

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 15

Responding Witness: Christopher M. Garrett / John J. Spanos

Q-1-15. Please provide any and all meeting notes taken that relate to any meetings conducted between KU and Gannett Fleming regarding the depreciation study.

A-1-15. There were no formal minutes taken by the Company during meetings and phone calls. Informal notes taken by Company representatives are the work product of counsel and are not produced.

Additionally, meeting notes and field trip notes taken by Mr. Spanos are attached.

Kentucky Utilities Co. / Louisville Gas and Electric Co.
Generator Ratings (MW)
2-Dec-2019

Plant Name	Owner	In-Service Date	Age (yr)	Ownership Percentage		Generator Nameplate Ratings
				KU	LGE	
Brown 3	KU	7/19/1971	48.4			464.0
Total Brown Coal						464.0
Brown 5	Joint	6/9/2001	18.5	47%	53%	123.3
Brown 6	Joint	8/11/1999	20.3	62%	38%	177.0
Brown 7	Joint	8/8/1999	20.3	62%	38%	177.0
Brown 8	KU	2/23/1995	24.8			126.0
Brown 9	KU	1/24/1995	24.9			126.0
Brown 10	KU	12/22/1995	24.0			126.0
Brown 11	KU	5/8/1996	23.6			126.0
Total Brown CT						981.3
Brown Solar	Joint	6/9/2016	3.5	61%	39%	10.0
Total Brown Solar						10.0
Archdiocese of Louisville Business Solar	LG&E	5/25/2018	1.5	0%	100%	0.03
Total Business Solar						0.03
Cane Run 7	Joint	6/19/2015	4.5	78%	22%	808.0
Total Cane Run						808.0
Dix Dam 1	KU	11/24/1925	94.1			11.2
Dix Dam 2	KU	11/24/1925	94.1			11.2
Dix Dam 3	KU	11/24/1925	94.1			11.2
Total Dix Dam						33.6
Ghent 1	KU	2/19/1974	45.8			556.9
Ghent 2	KU	4/20/1977	42.6			556.4
Ghent 3	KU	5/31/1981	38.5			556.6
Ghent 4	KU	8/18/1984	35.3			556.2
Total Ghent						2,226.1
Haefling 1	KU	10/7/1970	49.2			20.7
Haefling 2	KU	10/21/1970	49.1			20.7
Total Haefling						41.4
Mill Creek 1	LGE	7/11/1972	47.4			355.5
Mill Creek 2	LGE	6/11/1974	45.5			355.5
Mill Creek 3	LGE	6/28/1978	41.5			462.6
Mill Creek 4	LGE	7/15/1982	37.4			543.6
Total Mill Creek						1,717.2
Ohio Falls 1	LGE	1/1/1928	92.0			12.6
Ohio Falls 2	LGE	1/1/1928	92.0			12.6
Ohio Falls 3	LGE	1/1/1928	92.0			12.6
Ohio Falls 4	LGE	1/1/1928	92.0			12.6
Ohio Falls 5	LGE	1/1/1928	92.0			12.6
Ohio Falls 6	LGE	1/1/1928	92.0			12.6
Ohio Falls 7	LGE	1/1/1928	92.0			12.6
Ohio Falls 8	LGE	1/1/1928	92.0			12.6
Total Ohio Falls Hydro						100.6
Paddy's Run 13	Joint	6/27/2001	18.4	47%	53%	178.2
Total Paddys Run CT						178.2

Handwritten notes:
 - Circle around 78% and 22% in Cane Run 7 row.
 - Arrow pointing to the circle with text: "This Annotation is correct per EPCU Rules Provisions on 1-17-2020 (F.J.)"

Handwritten note:
 = Differs from EARLIER OWNERSHIP Doc. WHICH ONE IS CORRECT?

Kentucky Utilities Co. / Louisville Gas and Electric Co.

Generator Ratings (MW)

2-Dec-2019

Plant Name	Owner	In-Service Date	Age (yr)	Ownership Percentage		Generator Nameplate Ratings
				KU	LGE	
Simpsonville Solar 1	Joint	7/27/2019	0.4	56%	44%	0.4
Total Simpsonville Solar 1						0.4
Trimble County 1	LGE	12/23/1990	29.0			424.6
Trimble County 2	Joint	1/22/2011	8.9	81%	19%	628.5
Total Trimble County						1,053.1
Trimble County 5	Joint	5/14/2002	17.6	71%	29%	198.9
Trimble County 6	Joint	5/14/2002	17.6	71%	29%	198.9
Trimble County 7	Joint	6/1/2004	15.5	63%	37%	198.9
Trimble County 8	Joint	6/1/2004	15.5	63%	37%	198.9
Trimble County 9	Joint	7/1/2004	15.4	63%	37%	198.9
Trimble County 10	Joint	7/1/2004	15.4	63%	37%	198.9
Total Trimble CT						1,193.4
Paddy's Run 11	LGE	6/10/1968	51.5			16.0
Paddy's Run 12	LGE	7/16/1968	51.4			32.6
Zorn 1	LGE	5/23/1969	50.6			18.0
Total LG&E CT's						66.6

ITINERARY FOR
JOHN J. SPANOS

NOVEMBER 4 – 5, 2019

Monday, November 4

United Airlines – Confirmation Check-in PW8T3T

Leave	Harrisburg, PA	UA #4981	2:45 pm
Arrive	Washington, DC	Seat 3C	3:39 pm
Leave	Washington, DC	UA #4821	5:15 pm
Arrive	Louisville, KY	Seat 5B	7:15 pm

HOTEL: Louisville Marriott Downtown
280 West Jefferson
Louisville, KY 40202
1-502-627-5045

CONFIRMATION: 90801481

Tuesday, November 5

8:30 am Meet at office

PURPOSE: LG&E / KU Management Meetings
220 West Main Street
Louisville, KY 40202

CONTACTS: Sara Wiseman 502-627-3189
Eric Riggs 502-627-2822

United Airlines – Confirmation Check-in PW8T3T

Leave	Louisville, KY	UA #4752	6:00 pm
Arrive	Chicago, IL	Seat 10C	6:36 pm
Leave	Chicago, IL	UA #1082	7:35 pm
Arrive	Harrisburg, PA	Seat 12C	10:21 pm

AMS Discussion 1:00 Jonathan Whitehouse, Stuart Hough, Dave Hough, Adam Whitehouse

AMS methodology has been used
Current has 15 replaced when fail
20 operational life vs 15 day Detachable life
Electromechanical from up to 2008
2009 and on electronic relay only

Software 2:00 Dan Ambrose, Lewis P. Evans, John Fenn

3 yr operating common
Do not have control package

TRANSMISSION AND DISTRIBUTION DISCUSSION 9:00 ROBERT TRIMBLE, KYLIE BURNS, ADAM FOSTER, SUSANNE
REARVIEW DR. PROBLEMS JEREMY BORDO, TERRY HUNTER, CHRIS, ERIC, FRANK

DISTR. POWER

Primarily Wood

Few Steel in late 1970s

Pole Inspection + Treatment Program

Testing Program of All Trees Power

High Replacement Levels due to Program

3rd Party Attachments Require Lower Power

CONDUCTOR

NOT MUCH CONSIDERED OF CONDUCTOR

A LOT OF COPPER WERT, BEING REPLACED BY ALUM (ALUMINUM)

SMALL WIRE (LARGE) ACTUALLY REPLACES

MOST COPPER PUT IN PLACE TO MID 1960S

ULG CONDUCTOR

MOVING TO ULG MORE OFTEN

NEW CUSTOMERS COME ULG

NOT MUCH CONSIDERED

GROUND JOB WORKER LIKE FOR UGLES

1970S INSULATION WAS NOT GOOD CARETAKER THAN REFS FOR UGLES

- KU DID NOT HAVE MUCH AT THAT TIME

LINE TRANSPORTATION

POLE LOW PROBLEMS

SEWERS

MORE ULG SEWERS COME FORWARD

DIFFERENT ULG SEWER POUCHES BETWEEN COMPANIES

CAUSES OF LETS

- DIG-INS AND FAULTS CAUSE LETS

STREET LIGHTING

GROWTH IN 2014 + 2015

Substations

- Old Buildings being replaced by 2023
 - Electromechanical Replacement required in next few years
 - Vacuum Breakers being installed
 - moving 4KV \Rightarrow 12KV
- Some Control House but mostly cabinet controls

LED Lighting not having instructions yet

Transmission

new pole lines for Case 107

only within station

does a lot of transmission assets

2016 - 9M Kevlar poles were installed

Transmission System Improvement Program starting in 2017

- Reliability issues to end 2021

Poles

2013 - Wood Pole Inspection Program started

30,000 wood poles going to steel

Steel will have longer life

Tubular poles like 1570 to 1580

may not be wood in some instances

Other

Lighting Code left

ACSR going

going ACSR to have similar life

GENERATED WOOD TRUCK DRAGS, JUSTIN NEAL, STUART WILSON, LARRY MORRIS, JIMMY GARCIA, CHRIS THOMPSON COUNTY

PHYSICAL LIFE FOR UNIT 2 TO DOB6 REASONABLE
COST HANDLED AT THOMPSON REGION CONTRACTS

GROUND 3 - LOW CAPACITY FACTOR
COST OF FUEL SUBJECT

MILE CANCELL AND CANCEL - LIMITED SPACES
REDUCED WEIGHTS AND AT A TIME
CANTONMENT SCHEDULES ARE ABLE TO BE UTILIZED
REGULATION/ENVIRONMENTAL RULES ALWAYS IN PLAY

CTS
A LOT BEING LOOKED AT FOR REFINEMENT

CASE 11 TO BE RETURNED WITH
CASE 7 - 40 YR LIFE
PADON APR 13 - 5 YEAR PLAN
ZONING - 2000 LOT - SULLIVAN WATER COMPANY
HARDWARE - 1000 TO LOT
PADON'S 11 - STILL BEING WORKED BUT WITH CHANGES
ZONING HAS BEEN REPOSENDED FOR CONSTRUCTION REQUIREMENT
ANNUAL REFINEMENTS FOR SYSTEM SHOULD SLOW DOWN FOR NEXT 10 YRS

SHOULD NOT REDUCE CAPACITY TO LIFE STAYS

Trimble County Generating Station



Trimble County Station

Trimble County Generating Station is situated on more than 2,200 acres in a rural setting along 1 Bedford, Ky. — 50 miles northeast of Louisville.

The plant's generating assets currently consist of TC1, a pulverized-coal-fired unit with a net rated capacity of 760 megawatts; and TC5 through TC10, w

combustion turbines — each with a nominal rating of 160 megawatts.

TC1, LG&E and KU's lowest cost coal-fired generating unit, went into commercial operation in D predominantly in a base-load mode. TC2 began commercial operation in January 2011 and is a turbine units TC5 and TC6 went into commercial operation in May 2002; TC7 through TC10 bega

The combustion turbines are predominantly operated during times of peak demand because it i because the CTs can be started and ramped-up quickly to meet demand spikes and take advant

The same plant operating and maintenance personnel support both the coal-fired and combust other generating assets, which are wholly owned by LG&E and KU, TC1 and TC2 are owned in p Electric Agency and the Indiana Municipal Power Agency. IMEA and IMPA share a 25-percent ov in the assets supporting the operation of the coal-fired plant.

Environmentally-responsible power generation

Trimble County Station is one of the most environmentally and technologically advanced coal-fi which burns high-sulfur bituminous coal, is equipped with low-NOx (nitrogen oxide) burners an equipment, which reduce NOx emissions by more than 90 percent. A dry electrostatic precipitat by more than 98 percent.

A hydrated lime injection system reduces sulfur trioxide (SO₃) emissions to less than five parts p desulfurization (FGD) unit reduces sulfur dioxide (SO₂) emissions by more than 98 percent. In ad equipment installed on TC1, TC2 has been equipped with a carbon injection/baghouse system to electrostatic precipitator (WESP) for small particulate and acid mist emission reduction. TC2 was bituminous coal and low-sulfur sub-bituminous Powder River Basin coal.

Trimble County Station is a near-zero-discharge plant site, meaning there are only two discharg monitored and controlled. Aside from surface water runoff (rainfall) and cooling tower blow-dov permitted discharges to the Ohio River — all combustion process constituents and by-products off-site for beneficial re-use.

Fly ash is used as concrete filler and in the manufacturing of ceramic tile. Synthetic gypsum is ar wallboard; and bottom ash is used to produce blasting grit and in manufacturing roofing shingl

The plant site also has its own wildlife preserve. The company permanently dedicated 114 acres and forest areas. Many forms of wildlife inhabit the plant site. In addition to nesting pairs of Am other animals — such as fox, deer and wild turkeys — have grown accustomed to the plant's pr site.

Materials delivery

There is no rail delivery service to Trimble County Station. The plant's two barge unloading systems deliver coal to the plant via separate conveyor systems.

Coal and limestone are received in 1,500-ton barges and carried nearly a half-mile from the Ohio River. More than 1 million tons of coal and 180,000 tons of limestone are consumed by TC1 annually. A six-mile-long pipeline carries more than two billion cubic feet of natural gas that is consumed by the six combustion turbines annually. All major equipment are brought in by truck.

New technology; new construction

TC2 was built adjacent to TC1. The \$1.2 billion unit features modern, thermally efficient and advanced technology. It is the cleanest, most efficient coal-fired unit in Kentucky and one of the cleanest, most efficient in the world. TC2 received a \$125 million tax credit from the U.S. Department of Energy for its use of advanced clean coal technology. The tax credit was passed to customers by reducing the cost of construction of TC2.

Additionally, more than \$50 million was invested in new coal-blending, limestone- and coal-handling systems, new boiler water treatment systems and a new auxiliary boiler to replace the old one.

In your community

An important part of the company's mission is to positively impact the communities in which it operates. This is achieved through community outreach, environmental stewardship and the arts. Trimble County Station employees have a long tradition of volunteer service, community involvement and support of local charities. These and other activities help to improve the quality of life and being and success of the communities in which we work and live, and reinforce LG&E and KU's commitment to being a good corporate citizen.

Some of the local organizations and charitable causes Trimble County employees are proud to support are:

- Teen Leadership of Trimble County
- Jerry Stark Memorial Golf Scramble
- TC Emergency Search Unit
- TCMS Football
- KY Special Olympics
- Bedford Bash

- TCMS and TCHS Cross Country Teams
- Milton Fire & Rescue
- Trimble County Public Library
- TCMS Beta Club
- Parent Project Muscular Dystrophy
- ALS Foundation
- Trimble County Relay for Life
- Trimble County 4H Council
- TCHS Project Prom
- Boy Scouts of America
- 3rd and 5th Grade AAU Basketball
- Trimble County Community Based Instruction Program
- KY State Police Professional Association
- Milton Elementary PTO
- Milton Elementary Playground Project
- TCHS Football
- Trimble County Senior Citizens
- Trimble County Fair Board
- Trimble County Youth Baseball League
- TCHS Girls Golf
- Child Abuse Prevention Community Event
- Trimble County Youth Softball League
- Trimble County Christmas Wish Families
- Trimble County Park Football and Baseball Equipment

Trimble County Generating Station quick facts

- **Unit 1**
 - *Net generating capacity: 514 megawatts*

Case Nos. 2020-00349 and 2020-00350

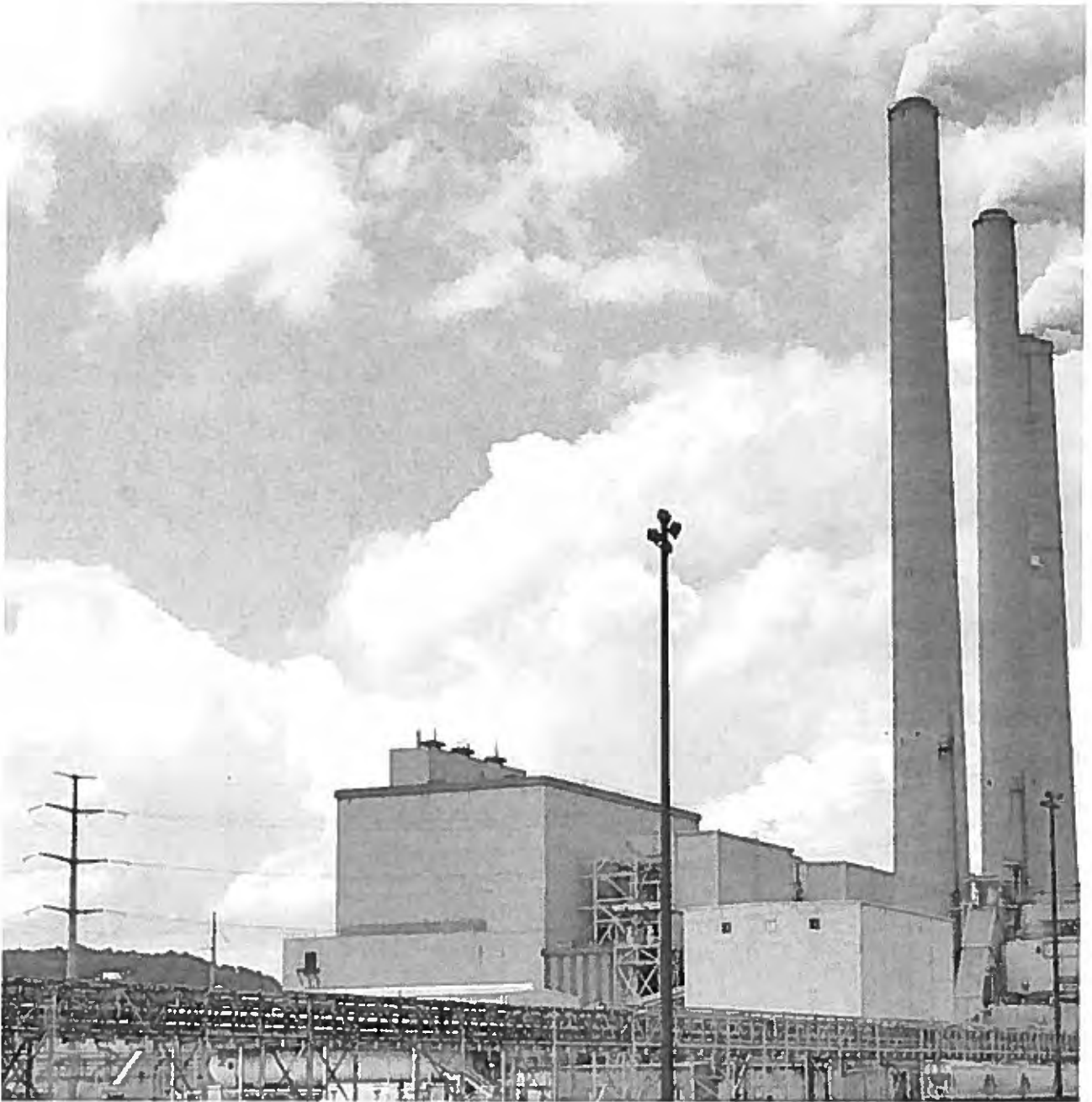
Attachment 3 to Response to DOD-FEA-1 Question 15

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Spanos

- *Original startup date:* 1990
- *Fuel:* Coal
- *Annual fuel consumption:* Approximately 1.7 million tons
- *Emission controls:* Low NOx, FGD, DESP, SCR
- **Unit 2**
 - *Net generating capacity:* 760 megawatts
 - *Original startup date:* 2011
 - *Fuel:* Coal
 - *Annual fuel consumption:* Approximately 2.5 million tons
 - *Emission controls:* Low NOx, FGD, DESP, WESP, SCR, Baghouse
- **Combustion Turbines**
 - *Net generating capacity:* 960 megawatts
 - *Original startup date:* 2002-2004
 - *Fuel:* Natural Gas
 - *Number of units in service:* 6

Mill Creek Generating Station



Mill Creek Station

The Mill Creek Generation Station is LG&E's largest coal-fired power plant, with a generating capacity on 544 acres in southwest Jefferson County, Ky.

The late 1960s and early 1970s saw an unprecedented increase in the construction of industrial facilities in the Louisville area.

As customers' demand for energy increased, LG&E needed additional generating capability to grow. Mill Creek began commercial operation in 1972 to meet this growing demand.

Innovative and cost-effective power generation

LG&E began construction on Mill Creek in 1968; Unit 1 went into service by 1972, and Unit 2 by 1978, and Unit 4 in 1982.

The construction of Mill Creek allowed the company to implement ideas that were innovative at the time and are now an industry standard today.

Identical generating systems were installed for Units 1 and 2 so that they could have the same controls and equipment such as a single stack.

The controls for all four generating units were computerized and located in a centralized area. A conveyor system was installed that stockpiles coal as it is received, reclaims it from storage, reduces dust emissions, and transports it to different locations.

With public concerns about aquatic life in the Ohio River, the company built Mill Creek's first cooling towers. It currently utilizes three large cooling towers.

LG&E pioneered the use of both electrostatic precipitators and scrubbers. All of the generating units have electrostatic precipitators to remove fly ash, and a flue gas desulfurization (FGD) system to remove sulfur dioxide.

Today, the company has the most extensive scrubber program of any utility in the country.

Every megawatt generated at Mill Creek station is scrubbed. LG&E has received local, national and international recognition for its removal efforts.

In 2000, LG&E installed its own facility for grinding limestone used in the scrubbing process.

Project Updates: Modernizing Our Emission Controls

Construction is nearing completion on modernizing emission controls at Mill Creek Generating Station to meet new requirements.

The new equipment will further increase the company's ability to control SO₂ emissions from current units.

percent removal rate. In addition, mercury and particulate emissions will be further reduced in h

Specific controls being retrofitted and enhanced include: new scrubbers for Mill Creek Units 1, 2
Unit 3.

Fabric filters or baghouses are being added to all four units to reduce particulate, mercury, sulfur
air pollutants.

For some of these pollutants, the company was already controlling up to 90 percent.

In your community

An important part of the company's mission is to positively impact the communities in which it
community outreach, environmental stewardship and the arts. Employees and contracted employees
of volunteer service, community involvement and support of local charities.

These and similar efforts contribute to the well-being and success of the communities in which
and KU's commitment to be both an employer of choice and a good corporate citizen.

Some of the local organizations and charitable causes Mill Creek employees are proud to support

- Volunteering for LG&E and KU's Annual Day of Caring
 - Each year, hundreds of volunteers assist nonprofit agencies and public parks across our
painting, mulching, cleaning up debris, building walkways and even building and remo
- Providing games for Metro Parks' Sun Valley Summer Day Camp
- Sponsoring Scholastic Book Fair reading programs at Watson Lane Elementary School
- Providing back-to-school supplies for Southwest Ministries, Meade County Board of Education
Ministries
- Sponsoring the Annual Southwest Community Festival
- Sponsor visiting author program at Valley High School
- Sponsor luncheons at Watson Lane Elementary and Valley High School during Teacher Appreciation
- Sponsor Annual Mayor's Derby Brunch at Riverside – The Farnsley Moremen Landing
- Hold bi-monthly Red Cross Blood Drives
- Mill Creek Engineers donate time to judge the Valley High School Annual Science Fair
- Sponsor Valley Woman's Club Annual Scholarship Program with 4 scholarships
- Sponsor JA Clays for Kids luncheon

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Attachment 3 to Response to DOD-FEA-1 Question 15

- Support various programs in Valley Village neighborhood (Annual Picnic, Thanksgiving Dinner)

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Spanos

Mill Creek Generating Station quick facts

- *Net generating capacity: 1,465 megawatts* → All LGE
- *Original startup date: 1972*
- *Fuel: Coal*
- *Annual fuel consumption: Approximately 4.8 million tons*
- *Number of units in service: 4*
- *Emission controls: units 1, 2: Low NOx, FGD, ESP; Units 3,4: Low NOx, FGD, ESP, SCR*

Ghent Generating Station

Kentucky Utilities - Ghent Station



Located on the Ohio River northeast of Carrollton, Ky., the Ghent Generating Station is Kentucky power plant.

Attachment 3 to Response to DOD-FEA-1 Question 15

The plant consists of four coal-fired generating units constructed on a compact site bounded by Ohio River to the north.

All of Ghent's generating units comply with local, state and federal air, water, and waste regulations further enhance environmental performance.

The largest coal-fired power plant in the LG&E and KU system, Ghent Generating Station began units have a net generating capacity of 1,919 megawatts.

Ghent is one of the most environmentally sound and technologically advanced coal-fired generating units can produce enough electricity to light nearly 5 million 100-watt light bulbs while complying with state air, water and waste regulations. The station consumes an average of 5.5 million tons of coal

Each of the generating units is equipped with electrostatic precipitators designed to remove dust from burning coal. A network of monitoring systems on the three chimneys measures air quality to ensure protection standards.

The Ghent Generating Station is looked upon as an international leader among utilities.

Recognized as a low-cost electricity producer, Ghent plays host to a number of utility professional Representatives from China, Russia, South Africa and other countries have visited the plant to learn production.

These visitors find that efficient management can run the station with about 200 employees, achieving minimal waste.

Modern emission controls

We are committed to protecting the environment and preserving the Earth's resources. We continue with sound environmental policy, and educate our customers about responsible energy use.

A \$600 million FGD installation at Ghent Station has resulted in all four units being equipped with

Now, Units 1, 3 and 4 are equipped with a single-module FGD. Unit 3's FGD equipment went into service in June 2008, and Unit 1 was switched over to its new FGD in February

Unit 2 was then connected to the original Unit 1 FGD, to make all units on FGDs in May 2009. Now for Units 1 and 4 in conjunction with the FGD projects.

A new limestone system was also installed in 2008. It includes new barge-unloading, storage and grinding mills. The existing grinding system that was installed in 1994 for Unit 1 was removed, replaced

Brown Generating Station for use on its FGD.

In your community

An important part of the company's mission is to positively impact the communities in which it operates through community outreach, environmental stewardship and the arts. Employees and contracted employees volunteer service, community involvement and support of local charities. These and similar efforts contribute to the success of the communities in which we work and live, and reinforce LG&E and KU's commitment to be a good corporate citizen.

Some of the local organizations and charitable causes our Ghent employees are proud to support include:

- Adopt-A-Highway
- Riversweep
- Day of Caring
- Repair Affair
- Local Boat Ramp Cleanup
- Ohio Valley United Charities
- Back-to-School Supply Drive Program
- School Tours
- Career Day

Ghent Generating Station quick facts

- **Net generating capacity:** 1,919 megawatts
- *Original startup date:* 1973
- *Fuel:* Coal
- *Annual fuel consumption:* Approximately 5.5 million tons
- *Number of units in Service:* 4
- *Emission controls:* Units 1, 3 and 4: Low NOx, FGD, SCR, ESP; Unit 2: Low NOx, FGD, ESP

E.W. Brown Generating Station



E.W. Brown Station

Situated on the banks of Lake Herrington near Harrodsburg, Ky., the E.W. Brown Plant is unique electricity-producing facilities — a hydroelectric plant, a coal-fired generating unit, natural-gas f solar facility.

Dix Dam and hydroelectric plant

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Attachment 3 to Response to DOD-FEA-1 Question 15

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Spans

Historical and important aspects of E.W. Brown's operations are Herrington Lake, Dix Dam and t capable of producing 33 megawatts of clean, low-cost energy. Herrington Lake was formed in t and the three-unit hydro plant were constructed to help meet Kentucky Utilities' growing energ water into Herrington Lake, and then is released so the plant can produce electricity. Upon com an engineering marvel, Kentucky's first hydroelectric dam, the world's largest rock-filled dam an Mountains.

Coal-fired unit

Of three original coal-fired units, only a 412-megawatt Unit 3, which went online in 1971, operat environmental improvements that coincide with other enhancements underway at the plant site pond to a dry storage facility, a system to treat water from the plant that comes in contact with a pond with a synthetic liner where the water will be discharged.

In February 2019, Brown retired decades-old coal-fired Units 1 and 2, which generated electricit periods of dynamic industrial expansion. In their day, both units were integral to economic grow territory and the entire Commonwealth of Kentucky.

Combustion turbines

Seven combustion-turbine units are located at E.W. Brown, some of which are jointly owned by units deliver 110 megawatts of power each; two have a capacity rating of 164 megawatts each; ; but one are fueled by either natural gas or fuel oil.

During periods of high demand, the combustion turbines can be started and come to full load in compared to the 10 hours needed to start a coal-burning unit. The combustion turbine units use generator. Air is compressed and forced into a chamber where combustion takes place, produci Fahrenheit. These gases are forced to a turbine, which uses the energy to propel the generator a

Universal solar facility

The newest addition to the E.W. Brown Plant is an 8-megawatt universal solar facility that stretch property. It uses more than 44,000 solar panels on fixed-tilt rack systems that are positioned to producing energy. Commercial operation began in spring 2016. The facility typically produces 1 annually (depending on the weather), enough to provide energy for 1,500 homes based on a us

The universal solar facility is part of LG&E and KU's continuous efforts to meet customers' energ energy options. The facility enables the utilities to learn more about this technology, including h

In your community

An important part of the company's mission is to positively impact the communities in which it operates through community outreach, environmental stewardship and the arts. Employees and contracted employees engage in volunteer service, community involvement and support of local charities. These and similar efforts contribute to the success of the communities in which we work and live, and reinforce LG&E and KU's commitment to be a good corporate citizen.

Some local organizations and charitable causes our E.W. Brown employees are proud to support include:

- The Herrington Lake Conservation League, which is dedicated to the preservation of the natural resources surrounding water shed.
- The E.W. Brown CARE Club, which was formed in 1988 to raise funds and provide support for the community.
- Periodic meetings to update fence-line neighbors aware of plant activities.
- Local civic groups and school system advisory boards.
- The local United Way as "Leadership Givers."
- The local back-to-school supply drive program, which supports disadvantaged students in the community.

E.W. Brown Generating Station Quick Facts

Coal-fired unit

- *Net generating capacity:* 412 megawatts
- *Original startup date:* 1957
- *Fuel:* Coal
- *Annual fuel consumption:* Approximately 1.0 million tons
- *Emission controls:* FGD, Low NOx, ESP

Hydroelectric plant

- *Three generating units*
- *Net generating capacity:* 31.5 megawatts

Solar facility

- 44,000 solar panels
- 8 megawatts
- Net generating capacity: 19,000 megawatt hours

Natural gas combustion turbines

- Seven units
- Net generating capacity: 906 megawatts

Cane Run Generating Station



Cane Run Generating Station quick facts

- Net generating capacity: 640 Megawatts
- Original startup date: 2015
- Fuel: Natural gas
- Number of units in service: 1

Want to know more?

See the history of the Cane Run Generating Station.

ITINERARY FOR
JOHN J. SPANOS & FREDERICK B. JOHNSTON, JR.

OCTOBER 14 – 16, 2019

Monday, October 14

United Airlines – Confirmation Check-in OJLNQD (JJS); OJP965 (FBJ)

Leave	Harrisburg, PA	UA #4880	6:25 am
Arrive	Washington, DC	Seat 5C, 8C	7:25 am
Leave	Washington, DC	UA #3620	8:21 am
Arrive	Louisville, KY	Seat 9B, 23B	10:10 am

10:30 am Sara Wiseman and Earl Riggs Pick-up at Airport. *CALL SARA'S CELL PHONE*
2019 Jeep Cherokee - Gray

PURPOSE: LG&E / KU Site Visits
220 West Main Street
Louisville, KY 40202

CONTACTS: Sara Wiseman 502-627-3189 *(w)* *502-338-0886 (c)*
Eric Riggs 502-627-2822

HOTEL: Louisville Marriott Downtown CONFIRMATION: 77229791 (JJS)
280 West Jefferson 77243598 (FBJ)
Louisville, KY 40202
1-502-627-5045

Tuesday, October 15

8:00 am Meet at office

Wednesday, October 16

8:00 am Meet at office

American Airlines – Confirmation Check-in USUXYD (JJS); ZCXLNI (FBJ)

Leave	Louisville, KY	AA #5277	6:10 pm
Arrive	Charlotte, NC	Seat 10D, 17C	7:53 pm
Leave	Charlotte, NC	AA #4896	10:09 pm
Arrive	Harrisburg, PA	Seat 4B, 13A	11:46 pm

Day 1 - October 14th - Monday

	<u>Travel and Site Visit Times</u>	
Arrival at Airport - Travel from LGE Bldg to Airport	20 min	10:10 AM
Paul Stratman - 364-8724 cell 643-2854		
Travel to Auburndale Service Center - 6900 Enterprise Drive	20 min	11:00 AM
Site Visit	1 hour	12:00 PM
Lunch	1 hour	1:00 PM
Mark Payne - 449-8842 cell 502-599-0725		
Travel to Cane Run Unit 7 CCGT - 5252 Cane Run Road	30 min	1:30 PM
Site Visit	1.5 hours	3:00 PM
Bob Barnett - 627-4421 cell 939-5791		
Riverport - 7301 Distribution Drive	1 hour	4:00 PM
Travel to Marriot Hotel and LG&E Garage	45 min	4:45 PM

Day 2 - October 15th - Tuesday

	<u>Travel and Site Visit Times</u>	
Pickup John and Fred at Marriot or LG&E Bldg		8:00 AM
Travel to E.W.Brown - 815 Dix Dam Road, Harrodsburg, KY	1.5 hours	9:30 AM
Brian Sumner - 1-859-748-4410 cell 1-859-265-3696		
Site Visit - Steam and CTs	2 hours	11:30 AM
Lunch		12:30 PM
Travel to Simpsonville	1 hour	1:30 PM
Travis Roberts - 722-6795 cell 859-556-9502		
Simpsonville Data Center - 55 Kingbrook Pkwy, Simpsonville KY	1 hour	2:30 PM
Return to Louisville	.5 hours	3:00 PM

Day 3 - October 16th - Wednesday

	<u>Travel and Site Visit Times</u>	
Mike Collins - cell 773-3563		
Pickup John and Fred at 8:00 AM - Travel to Cannons Lane		
Regulating Station - 552 Cannons Lane, Louisville KY	20 min	8:20 AM
Site Visit	30 min	8:50 AM
Travel to Elder Park City Gate Station - 3306 Elder Park Road	30 min	9:20 AM
Site Visit	30 min	9:50 AM
Travel to LaGrange City Gate Station - 3002 Hwy 146, LaGrange	20 min	10:10 AM
Site Visit	30 min	10:40 AM
Travel to Bedford City Gate Station - Hwy 3175 and US 42	20 min	11:00 AM
Site Visit	30 min	11:30 AM
Lunch - Hometown Buffet	1 hour	12:30 PM
Mike Buckner - cell 502-338-0165		
Travel to TC Plant - 487 Corn Creek Road, Bedford KY	20 min	12:50 PM
Site Visit	2 hours +	3:00 PM
Return from TC to Airport	1 hour	4:00 PM

August 1985 Facility Construction 10:45 Paul Strahan

Electric and Gas Cables

New Production Office

Acquired in early 1990s

Built Warehouse After Acquisition

Electric Vehicle Station

Plan to add Personnel in Back

2 - Control Computers

Elevator Added

Truck Group in Warehouse / Shop

Wood Shop

- Fabricated M+L Station

Automotive and Machine - Both Gas/Electric

Section of Building was Closed off, but will now be used

New Elevator Added - 2 Stalls

Power Lines

Motor Shop - Janitor's Room

Parking Lot 01/02/03 in Recent Years

CANE RUN GENERATING STATION 1:15 MARK PAYNE

6 COAL UNITS REMOVED

570 ACRE SITE

6 UNITS BUILT 1957-1969

UNIT 7 - 2015 COMBINED CYCLE - 640 MW

UNITS 1-3 REMOVED IN 1980S DUE TO NO PERMITS

UNITS 4-6 RETIRED 2015

2 v 1

CAN BYPASS STEAM TURBINE, BUT NOT EFFICIENT

CAN RUN 1 v 1 - ONLY 50% LOAD

UP TO FULL LOAD IN 2 HRS FROM COOLDOWN

RUN AT BASE LOAD

STRESS CONSTRUCTION AND STEAM TURBINES

VOLT MESS

NEW 138KV SUBSTATION

20 MILE 8" PIPING TO PLANT

16,600 TONS FOR CONSTRUCTION

2020 FIRST HOT GAS PATH & STEAM TURBINE MESS

EXPECT TO BE LIKE STAN

4 DIRECTOR GENERAL / BUREAU - 2018 BUREAU

2019 APPROX TRANSFER FACILITY

PUMP / PIPING FOR COOLING TOWERS OPERATED - WASTEWATER ISSUES

BYPASS VALVES - TO BE REMOVED PERIODICALLY

BURNING VALVES - HAVE BEEN REMOVED

LTA ON COMBUSTION TURBINES ONLY

LQ BUREAU REMOVED - 2017

DOLLAR REED PUMP OPERATIONAL

- Water Treatment - ADDON 3 TRAIN FOR REVERSE OSMOSIS
- GAS COMPRESSORS SEWAGE WASTEWATER
- BACKUP UPS SYSTEM ADDON - 2017
- CONTROL SYSTEM - STRONG/UNATON
- 10 CILS COOLING TOWER
- CHEMICAL FEED BLOC
- 2 RIVER PRESSURE RE WATER TREATMENT
- 2 GAS COMPRESSORS
- 2 STAGE BOILER FEED PUMP - PER UNIT
- SEWER HOUSE - LOCATION UNDER UNIT 1 + 2 SEWER WORK LOCATED
- CANOE RUN C7 11 - MODIFIED 2019
- TRENCH BLOC + UNDERGROUND - 2019
- EMERGENCY GENERATOR
- STEAM TUBES - LP + HP
- 3 CONDENSATE PUMPS FOR CONDENSATION
ONLY NEED 2 AT A TIME
- EMERGENCY POWER
- 3 TWIN DIESEL GENERATORS (4) - BLACK START CAPABLE
- RIVERPORT SERVICE / TUGAGE BLOC BUS BAR UNIT 3:00
- COMMERCIAL OPERATIONS
- CENTRAL SERVICE DUCT
- WORK ON TUGAGE OUTAGES
- UPGRADES INTERIOR IN 2017 / 2018

BROWN GENERATOR STATION 9:30 BUILT SUMMER

7 CTS

3 COAL UNITS

1 HYDRO

1 SOLAR FARM

COAL UNITS 1+2 REFINED - FEB 2019

UNIT 1 - 1957 110MW

UNIT 2 - 1963 180MW

UNIT 3 - 1971 463MW

WFGD (JANUARY) ~~ADDED~~ 2010

ADDED JUC

REMOVED INTERMITTENT AND ADDED ASSESSMENT - 2015

AMMONIA STORAGE - ADDED 2015

PUMP JET FERRIC HYDRO (OCTOBER) - REFINED PROCESS

REMOVED CONTACTS SINCE TUNING COUNTY 2 AND CONTACT 7

- 30 TO 40% CAPACITY - END OF RESERVE 2004

NIX POWR BEING CLOSED \Rightarrow USUAL DRY FUELS IN LOAD

UNITS 1-4 CTS 1970S UNITS 8-11 187MW

UNITS 5-7 CTS 2000S UNITS 6+7 - 170 MW EACH UNIT 5 - 123MW

6 OF 7 UNITS ARE DUAL FUEL

ICE MINT - ASS. TO UNITS 5, 8, 11

BUILT IN 2000

DIX DAM - ORIGINAL CONTACT FOUR FUELS DAM

NO FERC LICENSE

MAJOR UPDATES TO GENERATORS AND PUMPS - 24 MW \Rightarrow 33 MW

EXPECT TO GET FURTHER UPDATES

EMERGENCY DAMS REPAIRS - NOT TO LICENSE

FORMER FOR LATER

H-Dam - 3 UNITS - 1974 11 MW EACH

GAS PIPING RECONSTRUCTION TO AVOID DAM - 2019

SOLE FACILITY - 10 MW

2016 CONSTRUCTION

REMOVE 40 PANELS - MOST LIKELY DUE TO LIGHTNING

10 INVERTERS - HAVE HAD ISSUES

DIX TRANSMISSION CONTROL CENTER - ADDED TO DISPATCH

DRAWN UNIT 3 - 7 YR TURBINE OVERHAUL

BOILER OVERHAUL 18 MONTHS

UNIT 3 TURBINE CURRENTLY IN OVERHAUL STATE

CT UNIT 5 - GAS TURBINE OVERHAUL - HOT GAS PATH

CT UNIT 6 - OVERHAUL 2018

REVISIONS WATER DISCHARGE SYSTEM - WITH QUALIFICATION CONTRACTING

5 CAL ROOMS FOR UNIT 3

UNIT 3 CONTROL ROOM - INCLUDES CTS AND DAM

COOLING TOWERS (2) FOR UNIT 3 - 10 CWS

DIX DAM HEDCO RAMP 11:15

WALKWAY / BRIDGE TO POWERHOUSE UPGRADE

POWERHOUSE UPGRADE

69KV SUBSTATION

1- PROPOSE WITH 3 - TUNNELS TO UNITS

3 UNITS

GOVERNING UPGRADE - 2013 W/ UNITS

Joint/Joint Data Center 2:15 Harry Cooper

2 BUILDINGS

West - 2008

East - 2018

Conference Room

Kitchen

Control Center

- DISTRIBUTION BLDG - CALL CENTER (NEW)

TRAINING ROOM - SIMULATOR

CANOPY ADDON - 2018

2008 BUILDING

TRANSMISSION CONTROL CENTER

DATA CENTER

- SEPARATE JERARD FOR KV AND LV'S

CHIMNEYS - TEE BUILDING

2 EMERGENCY GENERATORS

CANNONS LINE REGULATED STATION 8:15 MIKE COLLINS

ISSUE TO BE REPAIRED

PLANTY LOCATED FOR EAST SIDE OF CRT

2 - PNEUMATIC VALVES - 2012 UPGRADE 2018

200/61 \rightarrow 90/61

90/61 BAST LINE PRESSURE BEFORE GOING TO DIST. PRESSURE

ALREADY 5 DOWN

RTU ADDED TO ALL STATIONS

FIBER ADDED 2017

3 BRICK STRUCTURES

STORAGE BUILDING - 3RD BRICK STRUCTURE

PLACE NEW STATION ON LOT NEXT TO IT

ELDER PARK CRT GATE STATION 9:00

WATER BATH HEATER - ADDED/REMOVED

EMERGENCY GENERATOR

ADDED ACTUATOR, MOVED PUMP TO NEW LOCATION

1960 CONSTRUCTION BUILDING

RTU BUILDING - WAS

600 lbs \Rightarrow 127 lbs TOTAL EXISTING SUPPLY

TYPICAL 250 lbs \Rightarrow 250 lbs

MEASUREMENT BUILDING - 2 RUNS

COULD ADD ANOTHER RUN

1/2 DOORWAY EQUIPMENT

UPGRADED REGULATED/MONITOR SYSTEM

Pipe Launching Added

SEWAGE AT OTHER END OF LINE

LA GRANDE CITY GATE STATION 9:30

ONLY MODIFIED STATION

PIPS TO THE EXISTING PUMP TO THIS STATION

1/2 ODOURANT EQUIPMENT

LOCATION NEEDS TO CHANGE - PREVIOUS ROAD AND TRAIL

640 lbs \Rightarrow 90 lbs

SMALL MIXER - 1997

NO REMOTE CONTROL - MUST HANDLE ON SITE

3 PUMPS w/ REGULATOR/HANDED

BEDFORD CITY GATE STATION 10:10

UNHANDLED CONTROL CONTINUOUS

ADDED PNEUMATIC AND ELECTRONIC CONTROL

1/2 ODOURANT EQUIPMENT - 2 PUMPS

SMALL CONTAINER

TEXAS EASTERN SUPPLIER

SMALL MIXER - 2001

2 LINES w/ LINE BYPASS

TURK COUNTY REGULATOR STATION 10:30

2018 CONSTRUCTION

NEW THERMOSTAT MIXER - COLD WATER

- 5 BRANCHES

1/2 ODOURANT

HIGH PRESSURE SYSTEM

640 lbs \Rightarrow 150 lbs

TAMPA COUNTY MEASUREMENT STATION 10:40

3 BUSES - UNIT 1 + 2 AND AUXILIARY BUSES

ALERT 3RD ASSETS

2018 CONSTRUCTION

RTU EQUIPMENT

MEASUREMENT EQUIPMENT

REGULATOR MIT

TAMPA COUNTY GENERATION STATION 12:45

UNIT 1 - 530 MW 1970

UNIT 2 - 810 MW / 760 MW 2011

UNIT 2 TOWER OVERHAUL BUILT FOR UNIT 1

STUDY REQUIRED TO CHANGE AND NEW UNIT 1 TOWER

TOWER ON CRACKS BUILT 2017

BUSING BUSES

FUEL OIL TO NATURAL GAS CONVERSION

BASE LOAD

UNIT 1 OUTAGE - 24 MONTH OUTAGE CYCLE

TENSION OF FUEL CYCLE

UNIT 2 - SEPARATION OF 2-3 YR CYCLE DUE TO SIZE

MAJOR BURNER COMPONENTS NEED ON VARIOUS BURNER RELIABILITY

5 BURNERS / UNIT - UNIT 1

6 BURNERS / UNIT - UNIT 2

} EFFICIENT OPERATING HAVE ALLOWED
FULL LOAD WITHOUT OVERHEATING

2015 - REVISIONS TO UNIT 1

2017 - MAJOR REVISIONS

Summer - 30 yrs old - cons. service Reduction of UGATES

A-5 VAS 1/1/20 - 2020, P-5 VAS 1/1/20 - 2021

EXPECT 25% of INCREASE of NEW SUMMER

LONGER - OVERALL LIFE EXPECTANCY 2020 ³⁰⁻³⁵ yrs

UNIT 2 RUNNING AT HIGH TEMPERATURES/PRESSURES THAT MUST

TEMPERATURE HAS JERS

- VERY COST EFFECTIVE

COAL COMING IN ON RANGE

45 DAYS of COAL SUPPLY - GENERAL LEVEL

COAL RATES UNUSUAL, CONTROLS

TUESDAY - UNITS 1 & 2 HAVE HIGH OVERLOADS

2015 - UNIT 1 DCS UPGRADE

HOPES TO DO WATER TREATMENT UPGRADES

CONCERN TO DO UPGRADES IN NEXT FEW YEARS

CTF

2 - 2002 160 MW

4 - 2004 160 MW

PERFORMS W/ 15 MINUTE START TIME

SOME USED AS STANDING RESERVE - UNIT 8 & 10

OPERATING DONE BY STANT BASCO

900 STARTS / OPERATING CYCLES

2016 UNIT 9 GENERATOR REPAIR

90% TO LIKE OPERATIONS DUE TO ROTOR LIFE CAP ONLY HAD TO DO MANY OVERLOADS

POW ELECTRIC - GYLSON AND AIR POUNDS W/ 5 YRS

All Project w/ in 5 yrs All investment for system

138 KV U/LG Lines could be moved to overhead

2017 - Boiler Room - Unit 2 Relocated

2 - Steam Roller Feed Pumps / UNIT

1 - Motor Drive BFP / UNIT

6 Core Recovery on each unit

15 Banners / Side - Unit 2

Bottom Ash - still the same

SFC Added - 2017 for Unit 1 - considering unit 2 Unit

Unit 2 Auxiliary feed

Recharge Unit 1 - 2016

Limestone / Slurry and New Pond

Concrete Ash Silo - 2015

Bridge to Landfill

Gypsum Storage Area

New Process Water System

10 Can Cooling Tower - Unit 1

2017

①

AUBURNDALE SERVICE CENTER

10-14-19

10:40 A.M.

PAUL STRATMAN

DAVID PIC

- ① VEHICLE CANOPY
- ② SERVICE CENTER OFFICES
- ③ ELECTRIC VEHICLE CHARGING STN.
 - E & G ASSETS @ TIM'S FACILITY
 - ≈ 1991 to 1993 PURCHASED BY LGE/KU
 - W/IT HOUSING
 - LGE/KU IS NOW ONLY BUSINESS ON PROPERTY
 - OFFICES, STORAGE, ASSEMBLY AREAS, GARAGES ON PROPERTY
- ④ GARAGE AREA AND TELECOM SHOP
- ⑤ MAINTENANCE GARAGE AREA
 - WELD SHOP (i.e. REG STNS PRE-FABRATED AND TRANSPORTED)
 - AUBURNDALE + EAST ARE GAS AND ELECTRIC
 - USING TRAILERS FOR TEMP OFFICE SPACE. PLAN IS TO REMODEL STORAGE AREA FOR OFFICES (w TRAILERS)
- ⑥ WAREHOUSE
- ⑦ VEHICLE / TRUCK BAYS CANOPY
- ⑧ WAREHOUSE (INTERIOR) → SHARED FACILITY
 - WAREHOUSE ALSO CONTAINS METAL SHOP
 - PARKING LOT IMPROVEMENTS @ END OF VEHICLE CANOPIES

DAVID PIC

- ⑨ SPACE TO BE ADDED
 - LARGE PAVY YARD AND ELECTRIC "LAY-DOWN" AREA

CANE RUN 7 (CCGT)

1:20 P.M

MARIL PAYNE

(10) COOLING TOWERS

- 500+ Acres
- UNIT 7 (v 2015) → 642 MW (2 GTs, 1 STEAM TURB.)
- UNITS 1, 2 + 3 RET. IN 1980s
- " 4, 5 + 6 " " 2015
- CAN RUN GTs w/o RUNNING THE STEAM TURBINE
- CAN OPERATE 1 ON 1
- CAN GO TO FULL LOAD IN JUST OVER 2 HRS
- RUNNING AS BASE-LOAD (INEXPENSIVE GAS)
- NOW USING HEPA FILTERS
- GTs 1 + 2 ARE IDENTICAL
- PPMO MOTORS ARE ALL SIEMENS (HRS 15 VOLT)
- NEW SWITCHYARD (138 KV)
- 8 MILES OF 20" PIPELINE FEEDS GAS FOR GTs
- EQUIPMENT OPERATING CYCLE
16,600 CI (≈ EVERY OTHER YEAR)



- SPRING OF 2020 IS FIRST HOT-GAS PATH
- STILL FEEL 40 YRS IS REASONABLE LIFE EST.
- 2018 AND PRIOR INVESTMENT
 - (1) 4 DIESEL GENERATORS (BLACK START) (NOT IN SERVICE YET)
 - (2) ADMIN BLDG
 - (3) EQUIP "
 - (4) STORAGE BLDG (UNDER CONSTRUCTION NOW)
 - (5) TRAINING CENTER (" " ")

- Accr 345 →

② \$8.3M Inv. In 2017 (Likely Break Start Asset)

- Have Had To Replace Pumps And Motors Related To Cooling Towers

a) 3 Motor Bearings

b) Pumps (Done Under Warranty)

- Upcoming Work

① Valve Replacements (Spring 2020)

②

- LTS A ON COMBUSTION TURBINES ONLY (FOR NOW)

- L-O BATTERIES REPLACED ≈ 2 YRS AGO

- BOTH BOILER FEED PUMPS HAVE BEEN OVERHAULED

- WATER TREATMENT

① ADDED 3RD TRAIN FOR RO

② ADDED STRAINER/FILTERS

- SUPPLIER IS TEXAS GAS

- BACKUP UPS SYSTEM INSTALLED ≈ 2017/2018

① CONTROL ROOM

② COOLING TOWER MOTORS

③ HRSG #1

④ STEAM TURBINE STRUCTURE

⑤ ETDI WITH TRAMP EQ

⑥ RO " " "

⑦ H₂O TANKS + PUMP HOUSE

⑧ H₂O TRAMP PLANT

- 19 Gas Compressor (1 of 2)
- 20 Boiler Feed Pump (1 per unit)
- 21 Gas Turbines + Gas Heater (Unit #1)
- 22 " " Ignition / Burners
 - CT #11 (MOTORIZED)
 - ↳ LOCAL CONTROLS OR PADDY'S RUN
- 23 Air Intake Str #1
- 24 New EQ STORAGE BLDG.
- 25 STEAM GENERATOR
- 26 STEAM TURBINES
- 27 LUBE OIL SYSTEM
- 28 HEAT EXCHANGERS
- 29 H₂O PUMPS
- 30 BLACK START UNITS STR
- 31 AUX. BOILER
- 32 BLACK START Diesel UNITS (4, 5 MW, 3 MW ea)

RIVERPORT DIST CTR

3:05 PM

- 33 SERVICE CENTER BLDG. BOB BARNETT
 - 2ND FLOOR WAS REMODELED (~~IN 2017/2018~~) 2017/2018
 - WORK ON AND DEV. PARTS FOR TURBINES
 - 1ST FLOOR PREVIOUS WREN BLDG. PURCHASED
- 34 MANUFACTURING SHOP
- 35 PRECISION EQ SHOP

10-15-19

344
2016
5648
13.1M

345
2016
5648
450K

Solar Assets

5

E.W. BROWN STN / Dike Dam

BRIAN SCUMMER

Ret In Feb. 2019

- 3 Steam Units (#1 - #2 → 1960s, #3 → 1971) } Very Clean
- 7 Gas Turbines ^{1959 1963} _{110 MW 130 MW} } ^{463 MW} _{SO_x AND NO_x}
- 1 Solar Field - 10 MW } ↳ BEHAVIOR INSTALLED IN 2010
- ↳ SCR
- ↳ BATHHOUSE ADDED IN 2015

- Ammonia Storage In 2015
- "Bathhouse" = Pulse Jet Fabric Filter
- Unit #3 is considered "Load Following"
 - ↳ Spends Much Time @ "Min" or "Medium" Load ("Spinning")
- Added Landfill ≈ 2015

GTs

- 4 @ 115 MWs (#8 - #11)
 - 2 @ 172 MWs (#6 - #7)
 - 1 @ 125 MWs (#5)
 - 6 of 7 ARE Dual-Fuel
- } Remaining Units

Thermal Energy Storage Plant (Ice Plant)

↳ Can Increase 100 MWs Of Generation

Dike Dam (No FERC License) → 33 MWs

- Pool Filled Dam
- Inspected Every 5 Years

- REPLACED PUMPS
 - GENERATORS RESTARTED / REPAIRED
 - NEW CONTROLS
 - LIFE EXTENSION WORK
 - FORMER HERRINGTON LAKE
- } INVESTMENT LAST couple OF YEARS
- 3 UNITS (FROM 24 MWs TO 33 MWs) (11 MWs each)
 - V1924

Solar Facility

- V 2016 / 2017
- 10 MWs
- REPLACED \approx 40 PANELS DUE TO LIGHTENING EVENT
- 10 INVERTERS
- FIXED PANELS (45K) 315 WATTS EACH

Dix TRANSMISSION CONTROL CENTER

- BACKUP TRANSMISSION CONTROL CENTER / BUNG 1'S ON THIS SITE

- UNIT #3 \rightarrow ON YRS BASED OVERHAUL SCHEDULE
- " " BOILER ON 18 Mo SCHEDULE (IS REVIEWED @ 12 Mos)

RECENT INVESTMENT

- 2012 WAS # 3 OVERHAUL, # 3 IS GETTING OFF NOW (2019)

- CTs

- a) #5 IN 2017 (\$3.5M) → "C" / NSR (GAS TURBINE OFF)
- b) #11 IN 2018 (\$7.5M) → OVERHAUL (GAS TURBINE)

FUTURE CAPITAL PLANS

① DISCHARGE WATER QUALITY IMPROVEMENT (MORE TREAT)

PLANT TOUR

- ③⑥ #3 REPL
- ③⑦ #3 TURBINE OFF
- ③⑧ COOLING TOWERS ASSEMBLY (UNIT #3)
- ③⑨ SCRUBBER
- ④⑩ BAGHOUSE
- ④⑪ LANDFILL
- ④⑫

VIA DAM

- ④⑫ POWERHOUSE
- ④⑬ POWERHOUSE
- ④⑭ NEW BRIDGES TO POWERHOUSE
- ④⑮ 3 UNITS
- POWER TUNNEL TO 3 PENSTOCKS
- ④⑯ CONTROLS
- ④⑰ GOVERNOR SYSTEMS
- ④⑱ PENSTOCK
- ④⑲ 69 KV SWITCHYARD (TRANSMISSION ASSET)

8

50 UNITS 5-7

51 " 5-7

52 UNITS 8-11

53 FUEL STORAGE

SIMPSONVILLE DATA CENTER

2:15 p.m.

- 2 BLDGS

Harry Cooper

54 NORTH ^{END} BLDG (DIST. CONTROL BLDG) ≡ v 2017/2018

55 WEST + EAST " (MECHANICAL BLDG) ≡ v 2008 ~~BLDG~~

- OFFICE / MTU SPACE

- TRANSMISSION CONTROL ROOM (LGE AND KU)

DISTRIBUTION

- TRAINING ROOM

- EXERCISE FACILITY

- EAST + WEST BLDG

EAST BLDG ^(END) = TRANSMISSION CONTROL

WEST BLDG ^(END) = DATA CENTER

- TRANSMISSION CONTROL ROOM

- TRANSMISSION + IT ENGINEERING OFFICE SPACE

~~WEST END OF BLDG (v 2008)~~

9

10-16-19

CANNONS LAKE REGULATING STATION

8:40 AM

- STN TO BR PUDONS IN 2020/2021

MILE COLLINS

- 3 BRICK BUDS

(56) REG. STRUCTURES

(57) PNEUMATIC VALVE

- 2 ROBUST PNEUMATIC VALVES

- 250 # / 90 # OUT (90 # IS "BETLINE" PRESSURE)

(58) CONTROL EQUIP. (RTU EQ.)

- 3RD BUDG IS FOR STORAGE ONLY

ELDER PARK CITY GATE STN

9:00 AM

(59) GAS HEATER

- STN PUDONS AREA OVER 5 YRS AGO

- \approx V 1960s (ORIG. INSTALL)

- CONTROL BUDG (RTU BUDG)

- IN @ \approx 650 #, OUT @ 125 # TO 250 #

(GUARANTEES DELIVERY OF 500 #)

(60) RTU STR

(61) M+R STR

(62) M+R EQ.

(63) VALVE/REG. REGULATING & MONITORING EQ.

(64) YE ODORANT SYS

(65) SCRUBBER/FILTER

10

LAGRANGE CITY GATE STN

9:20 AM

66 Heater (v1997)

- Just Monitor Heaters

67 Monitoring Reg. Eq.

68 YZ Odorant Sys.

DELETE Pic
(Not Owned)

69 Control Bldg

- In @ 250#, Out @ 90#

- STN HAS NOT BEEN UPGRADED LIKE ELDER PARK

- Regs are Pneumatically Controlled

BUDFORD CITY GATE STN

10:00 AM

70 Heater

- Station Also Upgraded

71 M+R Eq.

72 YZ Odorant Sys

- RTU is Outside

- Redundant Pumps on Odorant Sys

TRIMBLE COUNTY GENERATING STN.

10:30 AM

Gas Supply Assets

MIKE COLANIS

- v2018

73 Cold Water Technology Heater

378

74 YZ Odorant Sys

75 RTU Controls for Gas

76 Reg. + Monitoring Eq

(200# -> 150#)

Acct
342

11

- ACT 342
- ① TC GTs
 - ② PIPING + MEASURING EQ (v 2018)
 - ③ REGULATING EQ.

TRIMBUS COUNTY GENERATING STN

12:45 am

- #1 - 530 MW (v 1990)
- #2 - 798 MW (v 2011)
- BOTH UNITS BASELOAD

MIKE BUCKNER
CHARLES RANSING
MURA
MIKE POSTON

- HYPERBOLIC TOWER → Moved From #1 To #2 Due To SIZING

- Smaller Tower Stack Fault From For #1

- 25% Owned By Other Parties

RECENT INVESTMENT

a.) Act 311 → v 2017 → TRAINING CENTER

- #2 IS SHARED KU/LGE

b.) Act 312 → v 2014 - v 2018 →

Boiler Tubes

NATURAL GAS SWITCH-OVER (2016/2017)

- #1 ON 24 Mo. OUTAGE SCHEDULES

- #1 TURBINE OFF IN 2018

- #2 IS ON A SIMILAR SCHEDULE (MUST BE DOWN IN STAGES DUE TO SIZE) (2016/2019)

Humidifiers

HITTING MAJOR INV. POINT OF LIFE ON #1 (30 yrs)

12

- #1 → Upgrades Allow 100% on 4/5 Pulverizers
 - #2 → " " " " 5/6 "
- 2015 SCRUBBER WORK DONE

- Burns + Mac → Studied Scrubber In 2017. Determined
Major Inv. In 2021/2022 Would
Extend Life (Inv \approx 25% to 30% of
Cost for New Scrubber)

*

→ Should Extend Life 25-30 Yrs

- New Landfill \approx 25 Yr Life (In Service \approx 2021)

- #2 Running @ Higher Temps / Pressures

- #2 Des In Future Cwasing Inv.

i) Aus of Eq.

- 45 Days Supply of Coal on Pile (\approx 30 to 45 Days)

ii) Economies of Costs In Future

- All Coal Observed on Barge

- Coal Handling Eq. Inv (Recent)

→ Unloader

→ Movable Eq.

→ Conveyors / Structures

- 2015 Des Upgrade And Turning Conveyors (#1)

- Water Treat (Future Spending on This Horizon)

- GTS (6) → 176 MW to 180 MW → Patters

4 In 2002

2 In 2004

- 8+10 Loss Run Times
- Couple GTs Sit In "SPANNING" RESERVE
- OIIs ARE START BASED
 - ONCE ON, USUALLY RUN \cong 8 HRS PER START
- NOW GAS/FUEL FOR START HELPS START TIMES AND BURN EFFICIENCY @ START
- ~~#2 GENERATOR~~
- 2016 → #9 GT WAS REWOUND (GENERATOR)
- FUTURE INV.
 - a.) POND CLOSURES
 - b.) 138 KV LINES COMING INTO PLANT

PLANT TOUR

HARVEY TURNOR

- 80 UNIT #1
- 81 UNIT 2
- 82 BOILER FEED PUMP
- 83 COAL CRATES (1 OF 6 FOR UNIT #1)
- 84 COAL FEEDERS (1 OF 6 " " #2)
- 85 BOTTOM ASH CONVEYOR SYS. (UNIT #2)
- 86 PURVIZORS (U2)
- 87 DRY ASH SYS. (U1)
- 88 GTs (6)
- 89 BAGHOUSES
- 90 SLURRY VATS FOR SCRUBBER / AMMONIA STORAGE
- 91 GYPSUM STORAGE STR

92) SCRUB BUREAU

93) CONTROL ROOM

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 16

Responding Witness: John J. Spanos

Q-1-16. Please provide Exhibit JJS-KU-2 in Microsoft Excel format with all formulas and links intact.

A-1-16. See attachment being provided in Excel format.

The attachment is being provided in a separate file in Excel format.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 17

Responding Witness: John J. Spanos

- Q-1-17. Please provide a detailed narrative explaining how the plant and book reserve balances were estimated as of June 30, 2021 as shown in Exhibit JJS-KU-2. Please provide all workpapers that support this response.
- A-1-17. Plant additions and retirements were projected in 6-month intervals by FERC Account and generating location when applicable starting with the June 30, 2020 plant balances based on anticipated future projects. The activity was rolled forward from the plant balances developed at the end of the previous 6-month interval by FERC Account and generating station location to the date of June 30, 2021.

The book reserve was developed using the same 6-month interval process. Accruals were calculated for each period utilizing the proposed annual accrual rate as of June 30, 2020. The retirements reflected in each 6-month reserve interval were consistent with the plant retirements utilized in the development of the plant balance for the same interval. The net salvage amounts were calculated based on the associated retirement amount utilizing the proposed net salvage rate as June 30, 2020 where applicable. This developed reserve activity was then brought forward to the June 30, 2021 calculation date.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 18

Responding Witness: John J. Spanos

- Q-1-18. Please provide all workpapers that show the calculations performed to estimate future additions, retirements, plant balances, and reserve balances to support the depreciation rates presented in Exhibit JJS-KU-2.
- A-1-18. See attached for the schedules that support the developed plant and reserve balances as of June 30, 2021. "TAB 1 – PLANT" of the attachment provides the development of the June 30, 2021 plant balance by FERC Account and generating location. "TAB 2- RESERVE" of the attachment provides the development of the June 30, 2021 reserve balance by FERC Account and generating station location.

KENTUCKY UTILITIES COMPANY

ROLLFORWARD OF ELECTRIC PLANT AS OF JUNE 30, 2020 TO JUNE 30, 2021

ACCOUNT (1)	ORIGINAL COST AS OF			ORIGINAL COST AS OF			ORIGINAL COST	
	JUNE 30, 2020 (2)	ADDITIONS (3)	RETIREMENTS (4)	DECEMBER 31, 2020 (5)=(2)+(3)+(4)	ADDITIONS (6)	RETIREMENTS (7)	JUNE 30, 2021 (8)=(5)+(6)+(7)	
DEPRECIABLE PLANT								
INTANGIBLE PLANT								
302.00	FRANCHISES AND CONSENTS	55,918.83	104,245.30	0.00	160,164.13	0.00	0.00	160,164.13
303.00	MISCELLANEOUS INTANGIBLE PLANT	70,591,537.77	20,060,785.66	(6,425,525.95)	84,226,797.48	14,004,238.64	(4,672,890.86)	93,558,145.26
303.10	CCS SOFTWARE	18,744,842.88	(328,332.36)	(12,112.24)	18,404,398.28	261,249.97	(707,139.35)	17,958,508.90
303.30	CLOUD SOFTWARE	0.00	1,806,612.98	0.00	1,806,612.98	0.00	0.00	1,806,612.98
	TOTAL INTANGIBLE PLANT	89,392,299.48	21,643,311.58	(6,437,638.19)	104,597,972.87	14,265,488.61	(5,380,030.21)	113,483,431.27
STEAM PRODUCTION PLANT								
311.00	STRUCTURES AND IMPROVEMENTS							
	TRIMBLE COUNTY UNIT 2	96,921,494.51	808,419.71	0.00	97,729,914.22	0.00	0.00	97,729,914.22
	TRIMBLE COUNTY UNIT 2 SCRUBBER	5,781,870.34	0.00	0.00	5,781,870.34	0.00	0.00	5,781,870.34
	TRIMBLE COUNTY TRAINING CENTER	1,284,344.25	2,594.23	0.00	1,286,938.48	0.00	0.00	1,286,938.48
	SYSTEM LABORATORY	1,177,261.48	1,125.83	0.00	1,178,387.31	0.00	0.00	1,178,387.31
	BROWN UNIT 1	3,975,675.61	0.00	(13,126.92)	3,962,548.69	0.00	0.00	3,962,548.69
	BROWN UNIT 2	2,294,022.73	0.00	0.00	2,294,022.73	0.00	0.00	2,294,022.73
	BROWN UNIT 3	29,535,741.97	13,475.47	(10,589.44)	29,538,628.00	564,300.00	0.00	30,102,928.00
	BROWN UNIT 1, 2 AND 3 SCRUBBER	45,553,346.69	0.00	0.00	45,553,346.69	0.00	0.00	45,553,346.69
	GHEENT UNIT 1 SCRUBBER	8,491,198.64	0.00	0.00	8,491,198.64	0.00	0.00	8,491,198.64
	GHEENT UNIT 1	22,056,975.37	959,310.85	(9,984.50)	23,006,301.72	0.00	0.00	23,006,301.72
	GHEENT UNIT 2	17,043,478.80	265,235.97	0.00	17,308,714.77	0.00	0.00	17,308,714.77
	GHEENT UNIT 3	52,344,490.99	78,039.96	(5,434.21)	52,417,096.74	0.00	0.00	52,417,096.74
	GHEENT UNIT 4	47,120,498.40	3,171,849.98	(238,629.22)	50,053,719.16	750,000.00	0.00	50,803,719.16
	GHEENT UNIT 2 SCRUBBER	15,622,909.76	0.00	0.00	15,622,909.76	0.00	0.00	15,622,909.76
	GHEENT UNIT 4 SCRUBBER	0.00	130,475.60	0.00	130,475.60	0.00	0.00	130,475.60
	TOTAL ACCOUNT 311 - STRUCTURES AND IMPROVEMENTS	349,203,309.54	5,430,527.60	(277,764.29)	354,356,072.85	1,314,300.00	0.00	355,670,372.85
311.20	STRUCTURES AND IMPROVEMENTS - RETIRED PLANT							
	TYRONE UNIT 3	317,310.98	0.00	0.00	317,310.98	0.00	0.00	317,310.98
	TYRONE UNITS 1 AND 2	83,735.68	0.00	0.00	83,735.68	0.00	0.00	83,735.68
	GREEN RIVER UNIT 3	563,915.84	0.00	0.00	563,915.84	0.00	0.00	563,915.84
	GREEN RIVER UNIT 4	686,823.69	0.00	0.00	686,823.69	0.00	0.00	686,823.69
	GREEN RIVER UNITS 1 AND 2	480,446.20	0.00	0.00	480,446.20	0.00	0.00	480,446.20
	PINEVILLE UNIT 3	21,029.71	0.00	0.00	21,029.71	0.00	0.00	21,029.71
	TOTAL ACCOUNT 311.2 - STRUCTURES AND IMPROVEMENTS - RETIRED PLANT	2,153,262.10	0.00	0.00	2,153,262.10	0.00	0.00	2,153,262.10
312.00	BOILER PLANT EQUIPMENT							
	TRIMBLE COUNTY UNIT 2	685,667,780.85	16,645,362.84	(585,952.71)	701,727,190.98	2,463,116.02	(2,034,062.75)	702,156,244.25
	TRIMBLE COUNTY UNIT 2 SCRUBBER	73,202,109.88	99,750.00	0.00	73,301,859.88	0.00	0.00	73,301,859.88
	BROWN UNIT 1	7,916,857.07	0.00	0.00	7,916,857.07	0.00	0.00	7,916,857.07
	BROWN UNIT 2	1,476,288.33	0.00	0.00	1,476,288.33	0.00	0.00	1,476,288.33
	BROWN UNIT 3	475,691,478.30	29,903,557.42	(879,090.56)	504,715,945.16	562,853.08	0.00	505,278,798.24
	BROWN UNIT 1, 2 AND 3 SCRUBBER	335,830,028.21	2,168,944.12	(246,118.08)	337,752,854.25	0.00	0.00	337,752,854.25
	GHEENT UNIT 1 SCRUBBER	140,930,830.94	59,728.52	0.00	140,990,559.46	0.00	0.00	140,990,559.46
	GHEENT UNIT 1	369,600,397.57	1,789,863.06	(723,018.53)	370,667,242.10	26,313,153.65	(1,928,798.71)	395,051,597.04
	GHEENT UNIT 2	279,599,047.73	1,115,065.38	(546,836.04)	280,167,277.07	187,898.16	0.00	280,355,175.23
	GHEENT UNIT 3	446,413,638.44	6,713,766.75	(1,572,497.76)	451,554,907.43	0.00	(2,254,106.40)	449,300,801.03
	GHEENT UNIT 4	935,918,754.51	21,593,081.90	(4,395,724.94)	953,116,111.47	13,250,108.14	(2,534,619.76)	963,831,599.85
	GHEENT UNIT 2 SCRUBBER	71,576,383.69	0.00	(114,783.50)	71,461,600.19	0.00	0.00	71,461,600.19
	GHEENT UNIT 3 SCRUBBER	120,240,144.85	0.00	(113,717.81)	120,126,427.04	0.00	0.00	120,126,427.04
	GHEENT UNIT 4 SCRUBBER	255,524,659.98	15,859.38	(116,834.45)	255,423,684.91	0.00	0.00	255,423,684.91
	TOTAL ACCOUNT 312 - BOILER PLANT EQUIPMENT	4,199,588,400.35	80,104,979.37	(9,294,574.38)	4,270,398,805.34	42,777,129.05	(8,751,587.62)	4,304,424,346.77

KENTUCKY UTILITIES COMPANY

ROLLFORWARD OF ELECTRIC PLANT AS OF JUNE 30, 2020 TO JUNE 30, 2021

ACCOUNT (1)	ORIGINAL COST AS OF	ADDITIONS (3)	RETIREMENTS (4)	ORIGINAL COST AS OF	ADDITIONS (6)	RETIREMENTS (7)	ORIGINAL COST AS OF
	JUNE 30, 2020 (2)			DECEMBER 31, 2020 (5)=(2)+(3)+(4)			JUNE 30, 2021 (8)=(5)+(6)+(7)
312.10	BOILER PLANT EQUIPMENT - ASH PONDS						
	TRIMBLE COUNTY UNIT 2 - BOTTOM ASH	4,473,565.59	0.00	0.00	4,473,565.59	0.00	0.00
	TRIMBLE COUNTY UNIT 2 - GYPSUM ASH	4,610,665.23	0.00	0.00	4,610,665.23	0.00	0.00
	BROWN UNIT 1	13,208,176.67	0.00	0.00	13,208,176.67	0.00	0.00
	BROWN UNIT 3	19,802,080.26	0.00	(19,802,080.26)	0.00	0.00	0.00
	GHENT UNIT 1	2,100,620.94	0.00	0.00	2,100,620.94	0.00	0.00
	GHENT UNIT 4	32,692,663.87	0.00	0.00	32,692,663.87	0.00	0.00
	GHENT UNIT 2 SCRUBBER	1,901,133.18	0.00	0.00	1,901,133.18	0.00	0.00
	TOTAL ACCOUNT 312.1 - BOILER PLANT EQUIPMENT - ASH PONDS	78,788,905.74	0.00	(19,802,080.26)	58,986,825.48	0.00	0.00
314.00	TURBOGENERATOR UNITS						
	TRIMBLE COUNTY UNIT 2	92,095,706.20	132,643.90	(216,232.02)	92,012,118.08	5,501,465.96	(750,622.87)
	BROWN UNIT 1	250,130.24	0.00	0.00	250,130.24	0.00	0.00
	BROWN UNIT 2	393,782.15	0.00	0.00	393,782.15	0.00	0.00
	BROWN UNIT 3	51,368,471.06	111,806.18	(195,755.27)	51,284,521.97	0.00	0.00
	GHENT UNIT 1	43,274,490.39	85,004.53	(3,200.25)	43,356,294.67	13,351,542.47	(497,000.00)
	GHENT UNIT 2	37,337,160.32	142,092.76	(553,328.35)	36,925,924.73	0.00	0.00
	GHENT UNIT 3	52,603,066.50	401,300.38	(420,317.13)	52,584,049.75	0.00	(1,360,622.03)
	GHENT UNIT 4	59,246,409.64	19,359,749.86	(73,227.64)	78,532,931.86	4,879,689.01	0.00
	TOTAL ACCOUNT 314 - TURBOGENERATOR UNITS	336,569,216.50	20,232,597.61	(1,462,060.66)	355,339,753.45	23,732,697.44	(2,608,244.90)
315.00	ACCESSORY ELECTRIC EQUIPMENT						
	TRIMBLE COUNTY UNIT 2	46,199,255.43	537,714.30	0.00	46,736,969.73	0.00	0.00
	TRIMBLE COUNTY UNIT 2 SCRUBBER	1,415,469.10	0.00	0.00	1,415,469.10	0.00	0.00
	BROWN UNIT 1	3,252,466.89	0.00	0.00	3,252,466.89	0.00	0.00
	BROWN UNIT 2	573,582.12	0.00	0.00	573,582.12	0.00	0.00
	BROWN UNIT 3	16,028,996.37	329,421.53	0.00	16,358,417.90	391,782.63	0.00
	BROWN UNIT 1, 2 AND 3 SCRUBBER	29,324,457.10	0.00	(137,955.49)	29,186,501.61	0.00	0.00
	GHENT UNIT 1 SCRUBBER	12,223,379.51	0.00	0.00	12,223,379.51	0.00	0.00
	GHENT UNIT 1	13,719,112.62	66,418.08	0.00	13,785,530.70	0.00	0.00
	GHENT UNIT 2	21,943,434.37	276,598.04	0.00	22,220,032.41	0.00	0.00
	GHENT UNIT 3	33,509,060.03	0.00	0.00	33,509,060.03	0.00	0.00
	GHENT UNIT 4	52,634,601.80	300,348.59	(13,073.24)	52,921,877.15	450,340.95	0.00
	GHENT UNIT 2 SCRUBBER	951,198.87	0.00	0.00	951,198.87	0.00	0.00
	GHENT UNIT 3 SCRUBBER	12,041,998.28	0.00	0.00	12,041,998.28	0.00	0.00
	GHENT UNIT 4 SCRUBBER	15,148,041.55	0.00	0.00	15,148,041.55	0.00	0.00
	TOTAL ACCOUNT 315 - ACCESSORY ELECTRIC EQUIPMENT	258,965,054.04	1,510,500.54	(151,028.73)	260,324,525.85	842,123.58	0.00
316.00	MISCELLANEOUS POWER PLANT EQUIPMENT						
	TRIMBLE COUNTY UNIT 2	7,631,763.98	144,259.40	0.00	7,776,023.38	422,539.92	0.00
	SYSTEM LABORATORY	4,048,517.93	410,066.50	0.00	4,458,584.43	424,001.94	0.00
	BROWN UNIT 1	68,560.92	0.00	0.00	68,560.92	0.00	0.00
	BROWN UNIT 2	65,561.27	0.00	0.00	65,561.27	0.00	0.00
	BROWN UNIT 3	7,055,459.66	784,536.15	0.00	7,839,995.81	614,995.69	0.00
	GHENT UNIT 1 SCRUBBER	962,012.25	0.00	0.00	962,012.25	0.00	0.00
	GHENT UNIT 1	1,749,100.53	184,403.86	0.00	1,933,504.39	45,146.22	0.00
	GHENT UNIT 2	1,586,836.68	0.00	0.00	1,586,836.68	0.00	0.00
	GHENT UNIT 3	3,760,163.18	44,866.24	0.00	3,805,029.42	0.00	0.00
	GHENT UNIT 4	13,277,145.73	1,409,676.99	(37,610.38)	14,649,212.34	520,042.78	0.00
	TOTAL ACCOUNT 316 - MISCELLANEOUS POWER PLANT EQUIPMENT	40,205,122.13	2,977,809.14	(37,610.38)	43,145,320.89	2,026,726.55	0.00
	TOTAL STEAM PRODUCTION PLANT	5,265,473,270.40	110,256,414.26	(31,025,118.70)	5,344,704,565.96	70,692,976.62	(11,359,832.52)
	HYDROELECTRIC PRODUCTION PLANT						
3301.10	LAND RIGHTS						
	DIX DAM	855,636.47	0.00	0.00	855,636.47	0.00	0.00
	TOTAL ACCOUNT 330.1 - LAND RIGHTS	855,636.47	0.00	0.00	855,636.47	0.00	0.00

KENTUCKY UTILITIES COMPANY

ROLLFORWARD OF ELECTRIC PLANT AS OF JUNE 30, 2020 TO JUNE 30, 2021

ACCOUNT (1)	ORIGINAL COST AS OF	ADDITIONS (3)	RETIREMENTS (4)	ORIGINAL COST AS OF	ADDITIONS (6)	RETIREMENTS (7)	ORIGINAL COST AS OF
	JUNE 30, 2020 (2)			DECEMBER 31, 2020 (5)=(2)+(3)+(4)			JUNE 30, 2021 (8)=(5)+(6)+(7)
331.00	STRUCTURES AND IMPROVEMENTS DIX DAM	4,526,614.19	401.50	0.00	4,527,015.69	0.00	4,527,015.69
	<i>TOTAL ACCOUNT 331 - STRUCTURES AND IMPROVEMENTS</i>	4,526,614.19	401.50	0.00	4,527,015.69	0.00	4,527,015.69
332.00	RESERVOIRS, DAMS AND WATERWAYS DIX DAM	21,884,444.86	100,000.00	0.00	21,984,444.86	0.00	21,984,444.86
	<i>TOTAL ACCOUNT 332 - RESERVOIRS, DAMS AND WATERWAYS</i>	21,884,444.86	100,000.00	0.00	21,984,444.86	0.00	21,984,444.86
333.00	WATER WHEELS, TURBINES AND GENERATORS DIX DAM	14,046,741.58	0.00	0.00	14,046,741.58	0.00	14,046,741.58
	<i>TOTAL ACCOUNT 333 - WATER WHEELS, TURBINES AND GENERATORS</i>	14,046,741.58	0.00	0.00	14,046,741.58	0.00	14,046,741.58
334.00	ACCESSORY ELECTRIC EQUIPMENT DIX DAM	1,360,647.15	4,153.90	0.00	1,364,801.05	0.00	1,364,801.05
	<i>TOTAL ACCOUNT 334 - ACCESSORY ELECTRIC EQUIPMENT</i>	1,360,647.15	4,153.90	0.00	1,364,801.05	0.00	1,364,801.05
335.00	MISCELLANEOUS POWER PLANT EQUIPMENT DIX DAM	329,374.18	0.00	0.00	329,374.18	0.00	329,374.18
	<i>TOTAL ACCOUNT 335 - MISCELLANEOUS POWER PLANT EQUIPMENT</i>	329,374.18	0.00	0.00	329,374.18	0.00	329,374.18
336.00	ROADS, RAILROADS AND BRIDGES DIX DAM	198,899.83	0.00	0.00	198,899.83	0.00	198,899.83
	<i>TOTAL ACCOUNT 336 - ROADS, RAILROADS AND BRIDGES</i>	198,899.83	0.00	0.00	198,899.83	0.00	198,899.83
	TOTAL HYDROELECTRIC PRODUCTION PLANT	43,202,358.26	104,555.40	0.00	43,306,913.66	0.00	43,306,913.66
	OTHER PRODUCTION PLANT						
340.10	LAND RIGHTS BROWN CT PIPELINE	176,409.31	0.00	0.00	176,409.31	0.00	176,409.31
	<i>TOTAL ACCOUNT 340.1 - LAND RIGHTS</i>	176,409.31	0.00	0.00	176,409.31	0.00	176,409.31
341.00	STRUCTURES AND IMPROVEMENTS CANE RUN CC 7	50,851,902.40	152,097.05	0.00	51,003,999.45	0.00	51,003,999.45
	TRIMBLE COUNTY CT 5	3,740,231.32	0.00	0.00	3,740,231.32	0.00	3,740,231.32
	TRIMBLE COUNTY CT 6	3,588,684.24	0.00	0.00	3,588,684.24	0.00	3,588,684.24
	TRIMBLE COUNTY CT 7	3,559,154.97	0.00	0.00	3,559,154.97	0.00	3,559,154.97
	TRIMBLE COUNTY CT 8	3,548,851.71	0.00	0.00	3,548,851.71	0.00	3,548,851.71
	TRIMBLE COUNTY CT 9	3,655,976.41	0.00	0.00	3,655,976.41	0.00	3,655,976.41
	TRIMBLE COUNTY CT 10	4,414,423.76	0.00	0.00	4,414,423.76	0.00	4,414,423.76
	BROWN CT 5	1,053,014.69	0.00	0.00	1,053,014.69	0.00	1,053,014.69
	BROWN CT 6	222,026.00	0.00	(6,041.84)	215,984.16	0.00	215,984.16
	BROWN CT 7	555,992.76	0.00	0.00	555,992.76	0.00	555,992.76
	BROWN CT 8	2,012,654.95	0.00	0.00	2,012,654.95	0.00	2,012,654.95
	BROWN CT 9	4,660,156.04	0.00	0.00	4,660,156.04	0.00	4,660,156.04
	BROWN CT 10	1,865,718.20	0.00	0.00	1,865,718.20	0.00	1,865,718.20
	BROWN CT 11	1,919,015.13	0.00	0.00	1,919,015.13	0.00	1,919,015.13
	BROWN SOLAR	1,443,810.04	0.00	0.00	1,443,810.04	0.00	1,443,810.04
	HAEFLING UNITS 1, 2 AND 3	291,451.55	0.00	0.00	291,451.55	0.00	291,451.55
	PADDY'S RUN GENERATOR 13	2,198,885.41	0.00	0.00	2,198,885.41	0.00	2,198,885.41
	SIMPSONVILLE SOLAR	800,780.88	12,897.32	0.00	813,678.20	0.00	813,678.20
	<i>TOTAL ACCOUNT 341 - STRUCTURES AND IMPROVEMENTS</i>	90,382,730.46	164,994.37	(6,041.84)	90,541,682.99	0.00	90,541,682.99

KENTUCKY UTILITIES COMPANY

ROLLFORWARD OF ELECTRIC PLANT AS OF JUNE 30, 2020 TO JUNE 30, 2021

ACCOUNT (1)	ORIGINAL COST AS OF	ADDITIONS (3)	RETIREMENTS (4)	ORIGINAL COST AS OF	ADDITIONS (6)	RETIREMENTS (7)	ORIGINAL COST AS OF	
	JUNE 30, 2020 (2)			DECEMBER 31, 2020 (5)=(2)+(3)+(4)			JUNE 30, 2021 (8)=(5)+(6)+(7)	
342.00	FUEL HOLDERS, PRODUCERS AND ACCESSORIES							
	CANE RUN CC 7	6,595,518.10	0.00	0.00	6,595,518.10	0.00	0.00	6,595,518.10
	CANE RUN PIPELINE	23,410,569.22	0.00	0.00	23,410,569.22	0.00	0.00	23,410,569.22
	PADDY'S RUN CT PIPELINE	6,851,592.10	0.00	0.00	6,851,592.10	0.00	0.00	6,851,592.10
	TRIMBLE COUNTY CT 5	239,584.43	0.00	0.00	239,584.43	0.00	0.00	239,584.43
	TRIMBLE COUNTY CT 6	239,245.54	0.00	0.00	239,245.54	0.00	0.00	239,245.54
	TRIMBLE COUNTY CT PIPELINE	5,641,750.82	0.00	0.00	5,641,750.82	0.00	0.00	5,641,750.82
	TRIMBLE COUNTY CT 7	578,059.38	0.00	0.00	578,059.38	0.00	0.00	578,059.38
	TRIMBLE COUNTY CT 8	576,385.74	0.00	0.00	576,385.74	0.00	0.00	576,385.74
	TRIMBLE COUNTY CT 9	593,786.01	0.00	0.00	593,786.01	0.00	0.00	593,786.01
	TRIMBLE COUNTY CT 10	787,212.60	0.00	0.00	787,212.60	0.00	0.00	787,212.60
	BROWN CT 5	795,787.89	0.00	0.00	795,787.89	0.00	0.00	795,787.89
	BROWN CT 6	993,493.11	0.00	0.00	993,493.11	0.00	0.00	993,493.11
	BROWN CT 7	959,028.11	0.00	0.00	959,028.11	0.00	0.00	959,028.11
	BROWN CT 8	263,045.52	0.00	0.00	263,045.52	0.00	0.00	263,045.52
	BROWN CT 9	3,155,168.57	21,101,242.13	0.00	24,256,410.70	0.00	0.00	24,256,410.70
	BROWN CT 10	282,445.64	0.00	0.00	282,445.64	0.00	0.00	282,445.64
	BROWN CT 11	301,560.87	0.00	0.00	301,560.87	0.00	0.00	301,560.87
	BROWN CT PIPELINE	8,346,665.98	0.00	0.00	8,346,665.98	0.00	0.00	8,346,665.98
	HAEFLING UNITS 1, 2 AND 3	496,457.67	0.00	0.00	496,457.67	0.00	0.00	496,457.67
	PADDY'S RUN GENERATOR 13	1,977,968.08	0.00	0.00	1,977,968.08	0.00	0.00	1,977,968.08
	TOTAL ACCOUNT 342 - FUEL HOLDERS, PRODUCERS AND ACCESSORIES	63,085,325.38	21,101,242.13	0.00	84,186,567.51	0.00	0.00	84,186,567.51
343.00	PRIME MOVERS							
	CANE RUN CC 7	271,383,248.65	4,090,258.14	(414,205.18)	275,059,301.61	749,772.72	0.00	275,809,074.33
	TRIMBLE COUNTY CT 5	36,440,838.66	187,881.29	0.00	36,628,719.95	10,168,621.57	0.00	46,797,341.52
	TRIMBLE COUNTY CT 6	34,746,351.80	0.00	0.00	34,746,351.80	274,711.50	0.00	35,021,063.30
	TRIMBLE COUNTY CT 7	26,735,721.63	29,391.63	0.00	26,765,113.26	0.00	0.00	26,765,113.26
	TRIMBLE COUNTY CT 8	25,385,572.68	0.00	0.00	25,385,572.68	0.00	0.00	25,385,572.68
	TRIMBLE COUNTY CT 9	25,404,027.00	61,880.47	(51,239.86)	25,414,667.61	0.00	0.00	25,414,667.61
	TRIMBLE COUNTY CT 10	25,996,969.38	414,770.89	(114,294.79)	26,297,445.48	431,143.71	0.00	26,728,589.19
	BROWN CT 5	16,691,313.75	0.00	0.00	16,691,313.75	0.00	0.00	16,691,313.75
	BROWN CT 6	43,034,791.91	483,122.18	0.00	43,517,914.09	0.00	0.00	43,517,914.09
	BROWN CT 7	32,214,803.19	231,925.46	0.00	32,446,728.65	0.00	0.00	32,446,728.65
	BROWN CT 8	26,681,256.47	100,668.66	0.00	26,781,925.13	0.00	0.00	26,781,925.13
	BROWN CT 9	28,833,202.47	0.00	0.00	28,833,202.47	0.00	0.00	28,833,202.47
	BROWN CT 10	25,934,235.14	0.00	0.00	25,934,235.14	0.00	0.00	25,934,235.14
	BROWN CT 11	42,711,831.42	0.00	0.00	42,711,831.42	0.00	0.00	42,711,831.42
	PADDY'S RUN GENERATOR 13	19,578,532.35	0.00	0.00	19,578,532.35	0.00	0.00	19,578,532.35
	TOTAL ACCOUNT 343 - PRIME MOVERS	681,772,696.50	5,599,898.72	(579,739.83)	686,792,855.39	11,624,249.50	0.00	698,417,104.89
344.00	GENERATORS							
	CANE RUN CC 7	62,784,586.92	0.00	0.00	62,784,586.92	0.00	0.00	62,784,586.92
	TRIMBLE COUNTY CT 5	4,001,968.45	0.00	0.00	4,001,968.45	0.00	0.00	4,001,968.45
	TRIMBLE COUNTY CT 6	3,905,587.36	0.00	0.00	3,905,587.36	0.00	0.00	3,905,587.36
	TRIMBLE COUNTY CT 7	3,065,508.07	0.00	0.00	3,065,508.07	0.00	0.00	3,065,508.07
	TRIMBLE COUNTY CT 8	3,053,037.79	0.00	0.00	3,053,037.79	0.00	0.00	3,053,037.79
	TRIMBLE COUNTY CT 9	3,483,804.51	0.00	0.00	3,483,804.51	0.00	0.00	3,483,804.51
	TRIMBLE COUNTY CT 10	3,315,657.60	212,212.59	(90,163.96)	3,437,706.23	0.00	0.00	3,437,706.23
	BROWN CT 5	3,010,557.55	0.00	0.00	3,010,557.55	0.00	0.00	3,010,557.55
	BROWN CT 6	3,322,577.00	0.00	0.00	3,322,577.00	0.00	0.00	3,322,577.00
	BROWN CT 7	3,872,959.03	0.00	0.00	3,872,959.03	0.00	0.00	3,872,959.03
	BROWN CT 8	5,069,346.85	0.00	0.00	5,069,346.85	0.00	0.00	5,069,346.85
	BROWN CT 9	5,572,385.96	0.00	0.00	5,572,385.96	0.00	0.00	5,572,385.96
	BROWN CT 10	4,990,266.62	0.00	0.00	4,990,266.62	0.00	0.00	4,990,266.62
	BROWN CT 11	5,729,889.99	0.00	0.00	5,729,889.99	0.00	0.00	5,729,889.99
	BROWN SOLAR	13,068,659.23	0.00	0.00	13,068,659.23	0.00	0.00	13,068,659.23

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ACCOUNT (1)	ORIGINAL COST AS OF			ORIGINAL COST AS OF			ORIGINAL COST	
	JUNE 30, 2020 (2)	ADDITIONS (3)	RETIREMENTS (4)	DECEMBER 31, 2020 (5)=(2)+(3)+(4)	ADDITIONS (6)	RETIREMENTS (7)	JUNE 30, 2021 (8)=(5)+(6)+(7)	
HAEFLING UNITS 1, 2 AND 3	2,682,135.68	0.00	0.00	2,682,135.68	0.00	0.00	2,682,135.68	
PADDY'S RUN GENERATOR 13	5,326,518.41	0.00	0.00	5,326,518.41	0.00	0.00	5,326,518.41	
SIMPSONVILLE SOLAR	617,033.17	98,955.76	0.00	715,988.93	0.00	0.00	715,988.93	
OTHER SOLAR	248,072.16	(186.47)	0.00	247,885.69	0.00	0.00	247,885.69	
TOTAL ACCOUNT 344 - GENERATORS	137,120,552.35	310,981.88	(90,163.96)	137,341,370.27	0.00	0.00	137,341,370.27	
345.00	ACCESSORY ELECTRIC EQUIPMENT							
	CANE RUN CC 7	24,588,243.87	17.66	0.00	24,588,261.53	0.00	0.00	24,588,261.53
	TRIMBLE COUNTY CT 5	1,895,409.75	152,617.00	0.00	2,048,026.75	0.00	0.00	2,048,026.75
	TRIMBLE COUNTY CT 6	4,576,825.36	0.00	0.00	4,576,825.36	0.00	0.00	4,576,825.36
	TRIMBLE COUNTY CT 7	3,691,212.54	0.00	0.00	3,691,212.54	0.00	0.00	3,691,212.54
	TRIMBLE COUNTY CT 8	3,322,731.71	0.00	0.00	3,322,731.71	0.00	0.00	3,322,731.71
	TRIMBLE COUNTY CT 9	3,246,960.53	0.00	0.00	3,246,960.53	0.00	0.00	3,246,960.53
	TRIMBLE COUNTY CT 10	10,726,602.87	0.00	0.00	10,726,602.87	0.00	0.00	10,726,602.87
	BROWN CT 5	2,310,232.75	27,388.25	0.00	2,337,621.00	0.00	0.00	2,337,621.00
	BROWN CT 6	2,218,578.52	116,762.73	0.00	2,335,341.25	0.00	0.00	2,335,341.25
	BROWN CT 7	2,261,318.53	36,113.33	0.00	2,297,431.86	0.00	0.00	2,297,431.86
	BROWN CT 8	3,343,018.44	245,088.06	0.00	3,588,106.50	0.00	0.00	3,588,106.50
	BROWN CT 9	4,722,165.15	0.00	0.00	4,722,165.15	306,531.50	0.00	5,028,696.65
	BROWN CT 10	3,245,891.87	0.00	0.00	3,245,891.87	0.00	0.00	3,245,891.87
	BROWN CT 11	2,454,258.42	0.00	0.00	2,454,258.42	0.00	0.00	2,454,258.42
	BROWN SOLAR	445,469.72	0.00	0.00	445,469.72	0.00	0.00	445,469.72
	HAEFLING UNITS 1, 2 AND 3	816,263.41	0.00	0.00	816,263.41	0.00	0.00	816,263.41
	PADDY'S RUN GENERATOR 13	2,499,650.62	15,465.29	0.00	2,515,115.91	0.00	0.00	2,515,115.91
	SIMPSONVILLE SOLAR	329,568.03	0.00	0.00	329,568.03	0.00	0.00	329,568.03
	OTHER SOLAR	155,657.54	0.00	0.00	155,657.54	0.00	0.00	155,657.54
	TOTAL ACCOUNT 345 - ACCESSORY ELECTRIC EQUIPMENT	76,850,059.63	593,452.32	0.00	77,443,511.95	306,531.50	0.00	77,750,043.45
346.00	MISCELLANEOUS POWER PLANT EQUIPMENT							
	CANE RUN CC 7	3,249,199.52	0.00	0.00	3,249,199.52	0.00	0.00	3,249,199.52
	TRIMBLE COUNTY CT 5	28,963.63	0.00	0.00	28,963.63	0.00	0.00	28,963.63
	TRIMBLE COUNTY CT 7	8,888.93	0.00	0.00	8,888.93	0.00	0.00	8,888.93
	TRIMBLE COUNTY CT 8	8,861.01	0.00	0.00	8,861.01	0.00	0.00	8,861.01
	TRIMBLE COUNTY CT 9	9,113.52	0.00	0.00	9,113.52	0.00	0.00	9,113.52
	TRIMBLE COUNTY CT 10	41,868.51	0.00	0.00	41,868.51	0.00	0.00	41,868.51
	BROWN CT 5	2,112,385.83	0.00	0.00	2,112,385.83	0.00	0.00	2,112,385.83
	BROWN CT 6	118,067.98	0.00	0.00	118,067.98	0.00	0.00	118,067.98
	BROWN CT 7	83,161.41	0.00	0.00	83,161.41	0.00	0.00	83,161.41
	BROWN CT 8	335,415.82	0.00	0.00	335,415.82	295,400.00	0.00	630,815.82
	BROWN CT 9	841,612.82	0.00	0.00	841,612.82	0.00	0.00	841,612.82
	BROWN CT 10	237,307.12	0.00	0.00	237,307.12	0.00	0.00	237,307.12
	BROWN CT 11	560,127.19	0.00	0.00	560,127.19	0.00	0.00	560,127.19
	BROWN SOLAR	424,778.28	100,281.85	0.00	525,060.13	0.00	0.00	525,060.13
	HAEFLING UNITS 1, 2 AND 3	112,095.22	0.00	0.00	112,095.22	0.00	0.00	112,095.22
	PADDY'S RUN GENERATOR 13	1,097,040.45	0.00	0.00	1,097,040.45	27,990.21	0.00	1,125,030.66
	SIMPSONVILLE SOLAR	30,340.85	0.00	0.00	30,340.85	0.00	0.00	30,340.85
	TOTAL ACCOUNT 346 - MISCELLANEOUS POWER PLANT EQUIPMENT	9,299,228.09	100,281.85	0.00	9,399,509.94	323,390.21	0.00	9,722,900.15
	TOTAL OTHER PRODUCTION PLANT	1,058,687,001.72	27,870,851.27	(675,945.63)	1,085,881,907.36	12,254,171.21	0.00	1,098,136,078.57
	TRANSMISSION PLANT							
350.10	LAND RIGHTS	29,552,045.48	902,661.46	0.00	30,454,706.94	589,600.49	0.00	31,044,307.43
352.10	STRUCTURES AND IMPROVEMENTS - NON SYSTEM CONTROL	33,746,002.77	15,897.44	0.00	33,761,900.21	0.00	0.00	33,761,900.21
352.20	STRUCTURES AND IMPROVEMENTS - SYSTEM CONTROL		7,477.01	0.00	7,477.01	0.00	0.00	7,477.01
353.10	STATION EQUIPMENT - NON SYSTEM CONTROL	362,248,905.12	24,034,535.82	(1,210,281.58)	385,073,159.36	13,885,639.23	(1,409,266.97)	397,549,531.62
353.20	STATION EQUIPMENT - SYSTEM CONTROL	1,138,590.55	75,037.88	0.00	1,213,628.43	0.00	0.00	1,213,628.43

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ACCOUNT (1)	ORIGINAL COST AS OF			ORIGINAL COST AS OF			ORIGINAL COST	
	JUNE 30, 2020 (2)	ADDITIONS (3)	RETIREMENTS (4)	DECEMBER 31, 2020 (5)=(2)+(3)+(4)	ADDITIONS (6)	RETIREMENTS (7)	JUNE 30, 2021 (8)=(5)+(6)+(7)	
354.00	TOWERS AND FIXTURES	77,967,975.88	0.00	0.00	77,967,975.88	0.00	0.00	77,967,975.88
355.00	POLES AND FIXTURES	450,330,350.78	85,424,346.49	(1,295,880.85)	534,458,816.42	34,348,189.33	(1,355,110.49)	567,451,895.26
356.00	OVERHEAD CONDUCTORS AND DEVICES	228,934,133.38	14,194,454.90	(588,122.13)	242,540,466.15	19,008,260.13	(743,936.24)	260,804,790.04
357.00	UNDERGROUND CONDUIT	618,493.81	0.00	0.00	618,493.81	0.00	0.00	618,493.81
358.00	UNDERGROUND CONDUCTORS AND DEVICES	1,234,968.26	71,897.64	0.00	1,306,865.90	0.00	0.00	1,306,865.90
	TOTAL TRANSMISSION PLANT	1,185,771,466.03	124,726,308.64	(3,094,284.56)	1,307,403,490.11	67,831,689.18	(3,508,313.70)	1,371,726,865.59
	DISTRIBUTION PLANT							
360.10	LAND RIGHTS	2,613,745.11	0.00	0.00	2,613,745.11	0.00	0.00	2,613,745.11
361.00	STRUCTURES AND IMPROVEMENTS	24,453,464.59	2,574,880.61	0.00	27,028,345.20	3,273,283.96	0.00	30,301,629.16
362.00	STATION EQUIPMENT	259,387,332.02	31,546,577.50	(532,287.14)	290,401,622.38	10,367,040.79	(430,603.87)	300,338,059.30
364.00	POLES, TOWERS, AND FIXTURES	451,578,916.41	17,838,119.70	(667,772.12)	468,749,263.99	10,079,336.45	(523,697.67)	478,304,902.77
365.00	OVERHEAD CONDUCTORS AND DEVICES	449,079,449.15	34,721,950.37	(3,317,996.89)	480,483,402.63	16,818,631.07	(2,522,438.94)	494,779,594.76
366.00	UNDERGROUND CONDUIT	2,524,055.84	88.68	0.00	2,524,144.52	0.00	0.00	2,524,144.52
367.00	UNDERGROUND CONDUCTORS AND DEVICES	218,996,569.31	12,519,452.68	(161,963.07)	231,354,058.92	10,268,482.76	0.00	241,622,541.68
368.00	LINE TRANSFORMERS	329,001,554.34	4,199,601.12	(1,181,030.69)	332,020,124.77	4,058,117.28	(975,510.95)	335,102,731.10
369.00	SERVICES	131,194,897.17	9,994.48	0.00	131,204,891.65	0.00	0.00	131,204,891.65
370.00	METERS	64,525,347.18	1,895,526.85	(812,873.85)	65,608,000.18	1,088,339.49	(59,677.72)	66,636,661.95
370.01	METERS - AMS	2,928,714.98	74,565.70	0.00	3,003,280.68	0.00	0.00	3,003,280.68
370.11	METERS - AMI	770.41	0.00	0.00	770.41	0.00	0.00	770.41
370.20	METERS - CT AND PT	11,549,574.40	0.00	0.00	11,549,574.40	0.00	0.00	11,549,574.40
371.01	INSTALLATIONS ON CUSTOMERS' PREMISES - EV CHARGING STATIONS	159,233.81	0.00	0.00	159,233.81	0.00	0.00	159,233.81
373.00	STREET LIGHTING AND SIGNAL SYSTEMS	135,245,468.34	5,335,638.78	(800,432.94)	139,780,674.18	4,865,250.73	(577,610.16)	144,068,314.75
	TOTAL DISTRIBUTION PLANT	2,083,239,093.06	110,716,396.47	(7,474,356.70)	2,186,481,132.83	60,818,482.53	(5,089,539.31)	2,242,210,076.05
	GENERAL PLANT							
390.10	STRUCTURES AND IMPROVEMENTS - TO OWNED PROPERTY	79,952,897.07	18,340,396.92	(23,406.41)	98,269,887.58	2,275,352.68	0.00	100,545,240.26
390.20	STRUCTURES AND IMPROVEMENTS - TO LEASED PROPERTY	25,046.09	0.00	0.00	25,046.09	0.00	0.00	25,046.09
391.10	OFFICE FURNITURE AND EQUIPMENT	13,005,372.14	1,312,270.78	(3,652,645.55)	10,664,997.37	373,844.94	(241,917.70)	10,796,924.61
391.20	NON PC COMPUTER EQUIPMENT	26,951,985.79	4,339,763.88	(4,349,831.87)	26,941,917.80	587,500.01	(1,042,584.19)	26,486,833.62
391.31	PERSONAL COMPUTERS	6,521,661.06	1,054,354.07	(1,107,706.52)	6,468,308.61	64,792.00	(960,483.35)	5,572,617.26
392.00	TRANSPORTATION EQUIPMENT - CARS AND LIGHT TRUCKS	2,081,534.58	101,860.74	(58,759.78)	2,124,635.54	29,583.80	0.00	2,154,219.34
392.10	TRANSPORTATION EQUIPMENT - HEAVY TRUCKS AND OTHER	6,509,482.14	0.00	(6,659.48)	6,502,822.66	0.00	0.00	6,502,822.66
393.00	STORES EQUIPMENT	892,571.77	265,035.69	(40,568.42)	1,117,039.04	0.00	(77,466.28)	1,039,572.76
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT	15,658,384.10	1,204,157.84	(102,889.81)	16,759,652.13	991,401.22	(160,557.38)	17,590,495.97
396.10	POWER OPERATED EQUIPMENT - LARGE MACHINERY	4,942,427.89	(109,463.01)	(35,371.87)	4,797,593.01	0.00	0.00	4,797,593.01
396.20	POWER OPERATED EQUIPMENT - OTHER	1,044,051.11	0.00	0.00	1,044,051.11	0.00	0.00	1,044,051.11
397.00	COMMUNICATION EQUIPMENT - MICROWAVE, FIBER AND OTHER	35,825,398.49	3,091,242.51	(16,060.95)	38,900,580.05	4,007,848.36	0.00	42,908,428.41
397.10	COMMUNICATION EQUIPMENT - RADIO AND TELEPHONE	24,324,169.34	(88,212.13)	0.00	24,235,957.21	0.00	0.00	24,235,957.21
397.20	COMMUNICATION EQUIPMENT - DSM	7,606,691.11	(32,698.98)	0.00	7,573,992.13	31,749.98	0.00	7,605,742.11
	TOTAL GENERAL PLANT	225,341,672.68	29,478,708.31	(9,393,900.66)	245,426,480.33	8,362,072.99	(2,483,008.90)	251,305,544.42
	TOTAL DEPRECIABLE PLANT	9,951,107,161.63	424,796,545.93	(58,101,244.44)	10,317,802,463.12	234,224,881.14	(27,820,724.64)	#####
	NONDEPRECIABLE PLANT							
301.00	ORGANIZATION	44,455.58	0.00	0.00	44,455.58	0.00	0.00	44,455.58
310.20	LAND	24,987,391.84	6,320.57	0.00	24,993,712.41	0.00	0.00	24,993,712.41
317.07	ARO STEAM PRODUCTION- EQUIPMENT	17,559,790.99	0.00	(59,476.51)	17,500,314.48	0.00	0.00	17,500,314.48
317.08	ARO STEAM PRODUCTION - CCR	151,787,794.16	0.00	0.00	151,787,794.16	0.00	0.00	151,787,794.16
337.07	ARO HYDRAULIC PRODUCTION	645,787.99	0.00	0.00	645,787.99	0.00	0.00	645,787.99
340.20	LAND	718,103.59	0.00	0.00	718,103.59	0.00	0.00	718,103.59
347.07	ARO OTHER PRODUCTION	406,991.12	0.00	0.00	406,991.12	0.00	0.00	406,991.12
350.20	LAND	2,362,496.70	257,965.97	0.00	2,620,462.67	183,718.65	0.00	2,804,181.32
359.15	ARO TRANSMISSION (L/B)	38,195.86	0.00	0.00	38,195.86	0.00	0.00	38,195.86
359.17	ARO TRANSMISSION (EQUIPMENT)	216,121.55	0.00	0.00	216,121.55	0.00	0.00	216,121.55

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ACCOUNT (1)	ORIGINAL COST AS OF			ORIGINAL COST AS OF			ORIGINAL COST
	JUNE 30, 2020 (2)	ADDITIONS (3)	RETIREMENTS (4)	DECEMBER 31, 2020 (5)=(2)+(3)+(4)	ADDITIONS (6)	RETIREMENTS (7)	JUNE 30, 2021 (8)=(5)+(6)+(7)
360.20 LAND	6,371,965.21	261,122.93	0.00	6,633,088.14	0.00	0.00	6,633,088.14
374.05 ARO DISTRIBUTION (L/B)	484,890.78	0.00	0.00	484,890.78	0.00	0.00	484,890.78
374.07 ARO DISTRIBUTION (EQUIPMENT)	25,485.32	0.00	0.00	25,485.32	0.00	0.00	25,485.32
389.20 LAND	3,584,414.48	2,722.02	0.00	3,587,136.50	0.00	0.00	3,587,136.50
TOTAL NONDEPRECIABLE PLANT	209,233,885.17	528,131.49	(59,476.51)	209,702,540.15	183,718.65	0.00	209,886,258.80
TOTAL ELECTRIC PLANT	#####	425,324,677.42	(58,160,720.95)	10,527,505,003.27	234,408,599.79	(27,820,724.64)	#####

KENTUCKY UTILITIES COMPANY

BRINGFORWARD OF ELECTRIC RESERVE AS OF JUNE 30, 2020 TO JUNE 30, 2021

ACCOUNT (1)	BOOK RESERVE JUNE 30, 2020 (2)	JULY TO DECEMBER 2020			BOOK RESERVE DECEMBER 31, 2020 (6)=(2)+(3)+(4)+(5)	JANUARY TO JUNE 2021			BOOK RESERVE JUNE 30, 2021 (10)=(6)+(7)+(8)+(9)	
		ACCRUAL (3)	RETIREMENTS (4)	NET SALVAGE (5)		ACCRUAL (7)	RETIREMENTS (8)	NET SALVAGE (9)		
DEPRECIABLE PLANT										
INTANGIBLE PLANT										
302.00	FRANCHISES AND CONSENTS	74,420	0	0	0	74,420	0	0	0	74,420
303.00	MISCELLANEOUS INTANGIBLE PLANT	34,072,312	7,137,125	(6,425,526)	0	34,783,911	8,195,886	(4,672,891)	0	38,306,906
303.10	CCS SOFTWARE	8,088,610	712,917	(12,112)	0	8,789,415	697,826	(707,139)	0	8,780,102
303.30	CLOUD SOFTWARE	45,165	45,165	0	0	45,165	90,331	0	0	135,496
	TOTAL INTANGIBLE PLANT	42,235,342	7,895,207	(6,437,638)	0	43,692,911	8,984,043	(5,380,030)	0	47,296,924
STEAM PRODUCTION PLANT										
311.00	STRUCTURES AND IMPROVEMENTS									
	TRIMBLE COUNTY UNIT 2	21,944,531	1,002,455	0	0	22,946,986	1,006,618	0	0	23,953,604
	TRIMBLE COUNTY UNIT 2 SCRUBBER	3,419,962	36,426	0	0	3,456,388	36,426	0	0	3,492,814
	TRIMBLE COUNTY TRAINING CENTER	32,559	14,721	0	0	47,280	14,735	0	0	62,015
	SYSTEM LABORATORY	773,273	10,542	0	0	783,815	10,547	0	0	794,362
	BROWN UNIT 1	4,134,703	0	(13,127)	(525)	4,121,051	0	0	0	4,121,051
	BROWN UNIT 2	2,385,784	0	0	0	2,385,784	0	0	0	2,385,784
	BROWN UNIT 3	16,392,923	900,884	(10,589)	(424)	17,282,794	909,534	0	0	18,192,328
	BROWN UNIT 1, 2 AND 3 SCRUBBER	17,738,141	1,858,577	0	0	19,596,718	1,858,577	0	0	21,455,295
	GHEENT UNIT 1 SCRUBBER	6,589,785	90,007	0	0	6,679,792	90,007	0	0	6,769,799
	GHEENT UNIT 1	10,737,142	477,671	(9,985)	(699)	11,204,129	487,734	0	0	11,691,863
	GHEENT UNIT 2	9,583,870	317,758	0	0	9,901,628	320,211	0	0	10,221,839
	GHEENT UNIT 3	32,350,874	709,760	(5,434)	(380)	33,054,820	710,252	0	0	33,765,072
	GHEENT UNIT 4	18,031,143	993,606	(238,629)	(16,704)	18,769,416	1,031,267	0	0	19,800,683
	GHEENT UNIT 2 SCRUBBER	11,673,583	182,788	0	0	11,856,371	182,788	0	0	12,039,159
	GHEENT UNIT 4 SCRUBBER	0	763	0	0	763	1,527	0	0	2,290
	TOTAL ACCOUNT 311 - STRUCTURES AND IMPROVEMENTS	155,788,273	6,595,958	(277,764)	(18,732)	162,087,735	6,660,223	0	0	168,747,958
311.20	STRUCTURES AND IMPROVEMENTS - RETIRED PLANT									
	TYRONE UNIT 3	349,042	0	0	0	349,042	0	0	0	349,042
	TYRONE UNITS 1 AND 2	92,109	0	0	0	92,109	0	0	0	92,109
	GREEN RIVER UNIT 3	620,307	0	0	0	620,307	0	0	0	620,307
	GREEN RIVER UNIT 4	755,506	0	0	0	755,506	0	0	0	755,506
	GREEN RIVER UNITS 1 AND 2	528,491	0	0	0	528,491	0	0	0	528,491
	PINEVILLE UNIT 3	23,133	0	0	0	23,133	0	0	0	23,133
	TOTAL ACCOUNT 311.2 - STRUCTURES AND IMPROVEMENTS - RETIRED PLANT	2,368,588	0	0	0	2,368,588	0	0	0	2,368,588
312.00	BOILER PLANT EQUIPMENT									
	TRIMBLE COUNTY UNIT 2	129,987,925	8,116,261	(585,953)	(76,174)	137,442,059	8,212,718	(2,034,063)	(264,428)	143,356,286
	TRIMBLE COUNTY UNIT 2 SCRUBBER	23,493,665	747,170	0	0	24,240,835	747,679	0	0	24,988,514
	BROWN UNIT 1	8,233,531	0	0	0	8,233,531	0	0	0	8,233,531
	BROWN UNIT 2	1,535,340	0	0	0	1,535,340	0	0	0	1,535,340
	BROWN UNIT 3	112,434,187	25,049,410	(879,091)	(35,164)	136,569,342	25,805,366	0	0	162,374,708
	BROWN UNIT 1, 2 AND 3 SCRUBBER	110,279,694	15,206,134	(246,118)	(9,845)	125,229,865	15,249,541	0	0	140,479,406
	GHEENT UNIT 1 SCRUBBER	71,240,328	2,924,934	0	0	74,165,262	2,925,554	0	0	77,090,816
	GHEENT UNIT 1	124,256,311	10,012,120	(723,019)	(50,611)	133,494,801	10,356,347	(1,928,799)	(135,016)	141,787,333
	GHEENT UNIT 2	86,888,301	7,864,717	(546,836)	(38,279)	94,167,903	7,875,340	0	0	102,043,243
	GHEENT UNIT 3	198,136,005	8,665,396	(1,572,498)	(110,075)	205,118,828	8,693,258	(2,254,106)	(157,787)	211,400,193
	GHEENT UNIT 4	213,147,201	24,274,098	(4,395,725)	(307,701)	232,717,873	24,632,778	(2,534,620)	(177,423)	254,638,608
	GHEENT UNIT 2 SCRUBBER	65,165,290	418,386	(114,784)	(8,035)	65,460,857	418,050	0	0	65,878,907
	GHEENT UNIT 3 SCRUBBER	47,910,875	2,469,767	(113,718)	(7,960)	50,258,964	2,468,598	0	0	52,727,562
	GHEENT UNIT 4 SCRUBBER	111,014,196	4,943,425	(116,834)	(8,178)	115,832,609	4,942,448	0	0	120,775,057
	TOTAL ACCOUNT 312 - BOILER PLANT EQUIPMENT	1,303,722,849	110,691,818	(9,294,576)	(652,022)	1,404,468,069	112,327,677	(8,751,588)	(734,654)	1,507,309,504
312.10	BOILER PLANT EQUIPMENT - ASH PONDS									
	TRIMBLE COUNTY UNIT 2 - BOTTOM ASH	4,107,270	20,579	0	0	4,127,849	20,579	0	0	4,148,427
	TRIMBLE COUNTY UNIT 2 - GYPSUM ASH	4,339,188	21,209	0	0	4,360,397	21,209	0	0	4,381,606
	BROWN UNIT 1	13,150,171	29,004	0	0	13,179,175	29,003	0	0	13,208,177
	BROWN UNIT 3	18,784,748	1,017,332	(19,802,080)	0	0	0	0	0	0
	GHEENT UNIT 1	2,096,829	841	0	0	2,097,670	841	0	0	2,098,510
	GHEENT UNIT 4	27,811,650	438,082	0	0	28,249,732	438,082	0	0	28,687,813
	GHEENT UNIT 2 SCRUBBER	1,901,133	0	0	0	1,901,133	0	0	0	1,901,133
	TOTAL ACCOUNT 312.1 - BOILER PLANT EQUIPMENT - ASH PONDS	72,190,989	1,527,045	(19,802,080)	0	53,915,954	509,712	0	0	54,425,666
314.00	TURBOGENERATOR UNITS									
	TRIMBLE COUNTY UNIT 2	23,537,987	1,040,209	(216,232)	(28,110)	24,333,854	1,066,579	(750,623)	(97,581)	24,552,229

KENTUCKY UTILITIES COMPANY

BRINGFORWARD OF ELECTRIC RESERVE AS OF JUNE 30, 2020 TO JUNE 30, 2021

ACCOUNT (1)	BOOK RESERVE JUNE 30, 2020 (2)	JULY TO DECEMBER 2020			BOOK RESERVE DECEMBER 31, 2020 (6)=(2)+(3)+(4)+(5)	JANUARY TO JUNE 2021			BOOK RESERVE JUNE 30, 2021 (10)=(6)+(7)+(8)+(9)
		ACCRUAL (3)	RETIREMENTS (4)	NET SALVAGE (5)		ACCRUAL (7)	RETIREMENTS (8)	NET SALVAGE (9)	
BROWN UNIT 1	260,135	0	0	0	260,135	0	0	0	260,135
BROWN UNIT 2	409,533	0	0	0	409,533	0	0	0	409,533
BROWN UNIT 3	10,926,704	2,720,304	(195,755)	(7,830)	13,443,423	2,718,080	0	0	16,161,503
GHEHT UNIT 1	24,793,360	805,666	(3,200)	(224)	25,595,602	925,974	(497,000)	(34,790)	25,989,786
GHEHT UNIT 2	21,733,856	686,934	(553,328)	(38,733)	21,828,729	683,130	0	0	22,511,859
GHEHT UNIT 3	23,815,317	1,017,685	(420,317)	(29,422)	24,383,263	1,004,337	(1,360,622)	(95,244)	23,931,734
GHEHT UNIT 4	37,713,454	947,233	(73,228)	(5,126)	38,582,333	1,113,376	0	0	39,695,709
TOTAL ACCOUNT 314 - TURBOGENERATOR UNITS	143,190,346	7,218,031	(1,462,060)	(109,445)	148,836,872	7,511,476	(2,608,245)	(227,615)	153,512,488
315.00 ACCESSORY ELECTRIC EQUIPMENT									
TRIMBLE COUNTY UNIT 2	11,452,971	471,851	0	0	11,924,822	474,380	0	0	12,399,002
TRIMBLE COUNTY UNIT 2 SCRUBBER	848,756	9,979	0	0	858,735	9,979	0	0	868,714
BROWN UNIT 1	3,382,566	0	0	0	3,382,566	0	0	0	3,382,566
BROWN UNIT 2	596,525	0	0	0	596,525	0	0	0	596,525
BROWN UNIT 3	7,224,123	599,977	0	0	7,824,100	613,337	0	0	8,437,437
BROWN UNIT 1, 2 AND 3 SCRUBBER	10,389,867	1,253,597	(137,955)	(5,518)	11,499,991	1,250,642	0	0	12,750,633
GHEHT UNIT 1 SCRUBBER	6,951,331	219,410	0	0	7,170,741	219,410	0	0	7,390,151
GHEHT UNIT 1	8,795,425	213,849	0	0	9,009,274	214,365	0	0	9,223,639
GHEHT UNIT 2	11,522,428	435,010	0	0	11,957,438	437,735	0	0	12,395,173
GHEHT UNIT 3	26,572,938	283,152	0	0	26,856,090	283,152	0	0	27,139,242
GHEHT UNIT 4	22,253,545	1,015,981	(13,073)	(915)	23,255,538	1,023,081	0	0	24,278,619
GHEHT UNIT 2 SCRUBBER	383,184	22,686	0	0	405,870	22,686	0	0	428,556
GHEHT UNIT 3 SCRUBBER	5,575,078	215,552	0	0	5,790,630	215,552	0	0	6,006,182
GHEHT UNIT 4 SCRUBBER	5,031,760	329,470	0	0	5,361,230	329,470	0	0	5,690,700
TOTAL ACCOUNT 315 - ACCESSORY ELECTRIC EQUIPMENT	120,980,497	5,070,314	(151,028)	(6,433)	125,893,350	5,093,789	0	0	130,987,139
316.00 MISCELLANEOUS POWER PLANT EQUIPMENT									
TRIMBLE COUNTY UNIT 2	1,065,766	92,832	0	0	1,158,598	96,247	0	0	1,254,845
SYSTEM LABORATORY	1,190,089	79,329	0	0	1,269,418	87,106	0	0	1,356,524
BROWN UNIT 1	71,303	0	0	0	71,303	0	0	0	71,303
BROWN UNIT 2	68,184	0	0	0	68,184	0	0	0	68,184
BROWN UNIT 3	3,561,568	253,595	0	0	3,815,163	277,422	0	0	4,092,585
GHEHT UNIT 1 SCRUBBER	927,221	3,800	0	0	931,021	3,800	0	0	934,821
GHEHT UNIT 1	1,623,519	9,759	0	0	1,633,278	10,367	0	0	1,643,645
GHEHT UNIT 2	1,468,488	8,569	0	0	1,477,057	8,569	0	0	1,485,626
GHEHT UNIT 3	2,827,966	37,448	0	0	2,865,414	37,670	0	0	2,903,084
GHEHT UNIT 4	4,623,857	307,190	(37,610)	(2,633)	4,890,804	328,003	0	0	5,218,807
TOTAL ACCOUNT 316 - MISCELLANEOUS POWER PLANT EQUIPMENT	17,427,961	792,522	(37,610)	(2,633)	18,180,240	849,184	0	0	19,029,424
TOTAL STEAM PRODUCTION PLANT	1,815,669,503	131,895,688	(31,025,118)	(789,265)	1,915,750,808	132,952,061	(11,359,833)	(962,269)	2,036,380,767
HYDROELECTRIC PRODUCTION PLANT									
330.10 LAND RIGHTS									
DIX DAM	855,636	0	0	0	855,636	0	0	0	855,636
TOTAL ACCOUNT 330.1 - LAND RIGHTS	855,636	0	0	0	855,636	0	0	0	855,636
331.00 STRUCTURES AND IMPROVEMENTS									
DIX DAM	526,792	98,458	0	0	625,250	98,463	0	0	723,713
TOTAL ACCOUNT 331 - STRUCTURES AND IMPROVEMENTS	526,792	98,458	0	0	625,250	98,463	0	0	723,713
332.00 RESERVOIRS, DAMS AND WATERWAYS									
DIX DAM	10,603,722	282,954	0	0	10,886,676	283,599	0	0	11,170,275
TOTAL ACCOUNT 332 - RESERVOIRS, DAMS AND WATERWAYS	10,603,722	282,954	0	0	10,886,676	283,599	0	0	11,170,275
333.00 WATER WHEELS, TURBINES AND GENERATORS									
DIX DAM	3,202,719	268,293	0	0	3,471,012	268,293	0	0	3,739,305
TOTAL ACCOUNT 333 - WATER WHEELS, TURBINES AND GENERATORS	3,202,719	268,293	0	0	3,471,012	268,293	0	0	3,739,305
334.00 ACCESSORY ELECTRIC EQUIPMENT									
DIX DAM	384,781	26,301	0	0	411,082	26,341	0	0	437,423
TOTAL ACCOUNT 334 - ACCESSORY ELECTRIC EQUIPMENT	384,781	26,301	0	0	411,082	26,341	0	0	437,423

KENTUCKY UTILITIES COMPANY

BRINGFORWARD OF ELECTRIC RESERVE AS OF JUNE 30, 2020 TO JUNE 30, 2021

ACCOUNT (1)	BOOK RESERVE JUNE 30, 2020 (2)	JULY TO DECEMBER 2020			BOOK RESERVE DECEMBER 31, 2020 (6)=(2)+(3)+(4)+(5)	JANUARY TO JUNE 2021			BOOK RESERVE JUNE 30, 2021 (10)=(6)+(7)+(8)+(9)
		ACCRUAL (3)	RETIREMENTS (4)	NET SALVAGE (5)		ACCRUAL (7)	RETIREMENTS (8)	NET SALVAGE (9)	
335.00 MISCELLANEOUS POWER PLANT EQUIPMENT									
DIX DAM	174,515	4,825	0	0	179,340	4,825	0	0	184,165
<i>TOTAL ACCOUNT 335 - MISCELLANEOUS POWER PLANT EQUIPMENT</i>	174,515	4,825	0	0	179,340	4,825	0	0	184,165
336.00 ROADS, RAILROADS AND BRIDGES									
DIX DAM	65,363	3,391	0	0	68,754	3,391	0	0	72,145
<i>TOTAL ACCOUNT 336 - ROADS, RAILROADS AND BRIDGES</i>	65,363	3,391	0	0	68,754	3,391	0	0	72,145
TOTAL HYDROELECTRIC PRODUCTION PLANT	15,813,528	684,222	0	0	16,497,750	684,912	0	0	17,182,662
OTHER PRODUCTION PLANT									
340.10 LAND RIGHTS									
BROWN CT PIPELINE	134,050	1,006	0	0	135,056	1,006	0	0	136,062
<i>TOTAL ACCOUNT 340.1 - LAND RIGHTS</i>	134,050	1,006	0	0	135,056	1,006	0	0	136,062
341.00 STRUCTURES AND IMPROVEMENTS									
CANE RUN CC 7	6,863,332	748,641	0	0	7,611,973	749,759	0	0	8,361,732
TRIMBLE COUNTY CT 5	2,357,163	40,956	0	0	2,398,119	40,956	0	0	2,439,075
TRIMBLE COUNTY CT 6	2,265,113	39,117	0	0	2,304,230	39,117	0	0	2,343,347
TRIMBLE COUNTY CT 7	2,025,233	40,574	0	0	2,065,807	40,574	0	0	2,106,381
TRIMBLE COUNTY CT 8	2,019,371	40,457	0	0	2,059,828	40,457	0	0	2,100,285
TRIMBLE COUNTY CT 9	2,072,619	41,861	0	0	2,114,480	41,861	0	0	2,156,341
TRIMBLE COUNTY CT 10	2,136,052	58,050	0	0	2,194,102	58,050	0	0	2,252,152
BROWN CT 5	473,729	16,006	0	0	489,735	16,006	0	0	505,741
BROWN CT 6	113,800	3,285	(6,042)	(363)	110,680	3,240	0	0	113,920
BROWN CT 7	381,022	5,810	0	0	386,832	5,810	0	0	392,642
BROWN CT 8	1,766,591	12,982	0	0	1,779,573	12,982	0	0	1,792,555
BROWN CT 9	3,685,914	47,301	0	0	3,733,215	47,301	0	0	3,780,516
BROWN CT 10	1,444,909	18,844	0	0	1,463,753	18,844	0	0	1,482,597
BROWN CT 11	1,566,407	15,448	0	0	1,581,855	15,448	0	0	1,597,303
BROWN SOLAR	212,217	30,681	0	0	242,898	30,681	0	0	273,579
HAEFLING UNITS 1, 2 AND 3	282,196	4,474	0	0	286,670	4,474	0	0	291,144
PADDY'S RUN GENERATOR 13	1,323,639	25,397	0	0	1,349,036	25,397	0	0	1,374,433
SIMPSONVILLE SOLAR	28,242	16,548	0	0	44,790	16,680	0	0	61,470
<i>TOTAL ACCOUNT 341 - STRUCTURES AND IMPROVEMENTS</i>	31,017,549	1,206,432	(6,042)	(363)	32,217,576	1,207,637	0	0	33,425,213
342.00 FUEL HOLDERS, PRODUCERS AND ACCESSORIES									
CANE RUN CC 7	4,068,869	50,456	0	0	4,119,325	50,456	0	0	4,169,781
CANE RUN PIPELINE	3,480,724	352,329	0	0	3,833,053	352,329	0	0	4,185,382
PADDY'S RUN CT PIPELINE	793,573	160,670	0	0	954,243	160,670	0	0	1,114,913
TRIMBLE COUNTY CT 5	151,371	2,707	0	0	154,078	2,707	0	0	156,785
TRIMBLE COUNTY CT 6	151,169	2,703	0	0	153,872	2,703	0	0	156,575
TRIMBLE COUNTY CT PIPELINE	3,057,552	69,676	0	0	3,127,228	69,676	0	0	3,196,904
TRIMBLE COUNTY CT 7	329,545	6,821	0	0	336,366	6,821	0	0	343,187
TRIMBLE COUNTY CT 8	328,591	6,801	0	0	335,392	6,801	0	0	342,193
TRIMBLE COUNTY CT 9	337,525	7,007	0	0	344,532	7,007	0	0	351,539
TRIMBLE COUNTY CT 10	366,939	10,982	0	0	377,921	10,982	0	0	388,903
BROWN CT 5	435,928	10,584	0	0	446,512	10,584	0	0	457,096
BROWN CT 6	429,833	17,187	0	0	447,020	17,187	0	0	464,207
BROWN CT 7	423,482	16,351	0	0	439,833	16,351	0	0	456,184
BROWN CT 8	199,653	2,736	0	0	202,389	2,736	0	0	205,125
BROWN CT 9	1,795,375	252,872	0	0	2,048,247	252,872	0	0	2,298,119
BROWN CT 10	137,461	5,621	0	0	143,082	5,621	0	0	148,703
BROWN CT 11	187,775	4,297	0	0	192,072	4,297	0	0	196,369
BROWN CT PIPELINE	6,348,974	68,443	0	0	6,417,417	68,443	0	0	6,485,860
HAEFLING UNITS 1, 2 AND 3	439,127	11,791	0	0	450,918	11,791	0	0	462,709
PADDY'S RUN GENERATOR 13	1,256,991	22,054	0	0	1,279,045	22,054	0	0	1,301,099
<i>TOTAL ACCOUNT 342 - FUEL HOLDERS, PRODUCERS AND ACCESSORIES</i>	24,720,457	1,082,088	0	0	25,802,545	1,276,747	0	0	27,079,292
343.00 PRIME MOVERS									
CANE RUN CC 7	23,490,766	4,767,711	(414,205)	(41,421)	27,802,851	4,806,327	0	0	32,609,178
TRIMBLE COUNTY CT 5	19,076,162	540,715	0	0	19,616,877	540,715	0	0	20,157,592
TRIMBLE COUNTY CT 6	19,122,536	493,398	0	0	19,615,934	493,398	0	0	20,111,283
TRIMBLE COUNTY CT 7	12,569,268	399,919	0	0	12,969,187	399,919	0	0	13,369,325
TRIMBLE COUNTY CT 8	12,843,344	360,475	0	0	13,203,819	360,475	0	0	13,564,294
TRIMBLE COUNTY CT 9	13,102,216	354,460	(51,240)	(4,099)	13,401,337	354,460	0	0	13,755,872
TRIMBLE COUNTY CT 10	13,131,439	369,983	(114,295)	(9,144)	13,377,983	375,159	0	0	13,753,142
BROWN CT 5	8,330,574	256,212	0	0	8,586,786	256,212	0	0	8,842,998
BROWN CT 6	19,450,048	776,811	0	0	20,226,859	781,147	0	0	21,008,006
BROWN CT 7	21,060,936	402,518	0	0	21,463,454	403,962	0	0	21,867,416

KENTUCKY UTILITIES COMPANY

BRINGFORWARD OF ELECTRIC RESERVE AS OF JUNE 30, 2020 TO JUNE 30, 2021

ACCOUNT (1)	BOOK RESERVE JUNE 30, 2020 (2)	JULY TO DECEMBER 2020			BOOK RESERVE DECEMBER 31, 2020 (6)=(2)+(3)+(4)+(5)	JANUARY TO JUNE 2021			BOOK RESERVE JUNE 30, 2021 (10)=(6)+(7)+(8)+(9)
		ACCRUAL (3)	RETIREMENTS (4)	NET SALVAGE (5)		ACCRUAL (7)	RETIREMENTS (8)	NET SALVAGE (9)	
BROWN CT 8	21,580,721	249,940	0	0	21,830,661	250,411	0	0	22,081,072
BROWN CT 9	17,319,900	523,323	0	0	17,843,223	523,323	0	0	18,366,546
BROWN CT 10	14,961,883	462,926	0	0	15,424,809	462,926	0	0	15,887,735
BROWN CT 11	28,499,423	580,881	0	0	29,080,304	580,881	0	0	29,661,185
PADDY'S RUN GENERATOR 13	9,883,680	301,509	0	0	10,185,189	301,509	0	0	10,486,698
TOTAL ACCOUNT 343 - PRIME MOVERS	254,422,896	10,840,781	(579,740)	(54,664)	264,629,273	10,969,707	0	0	275,598,980
344.00 GENERATORS									
CANE RUN CC 7	10,831,929	878,984	0	0	11,710,913	878,984	0	0	12,589,897
TRIMBLE COUNTY CT 5	2,350,314	47,824	0	0	2,398,138	47,824	0	0	2,445,962
TRIMBLE COUNTY CT 6	2,253,998	47,648	0	0	2,301,646	47,648	0	0	2,349,294
TRIMBLE COUNTY CT 7	1,599,516	38,012	0	0	1,637,528	38,012	0	0	1,675,540
TRIMBLE COUNTY CT 8	1,592,676	37,858	0	0	1,630,534	37,858	0	0	1,668,392
TRIMBLE COUNTY CT 9	1,157,277	57,134	0	0	1,214,411	57,134	0	0	1,271,545
TRIMBLE COUNTY CT 10	1,864,621	43,222	(90,164)	(7,213)	1,810,466	44,003	0	0	1,854,469
BROWN CT 5	1,725,296	37,030	0	0	1,762,326	37,030	0	0	1,799,356
BROWN CT 6	2,150,436	38,708	0	0	2,189,144	38,708	0	0	2,227,852
BROWN CT 7	2,421,604	46,863	0	0	2,468,467	46,863	0	0	2,515,330
BROWN CT 8	4,244,200	39,794	0	0	4,283,994	39,794	0	0	4,323,788
BROWN CT 9	4,199,493	64,640	0	0	4,264,133	64,640	0	0	4,328,773
BROWN CT 10	3,527,188	62,129	0	0	3,589,317	62,129	0	0	3,651,446
BROWN CT 11	3,904,497	70,764	0	0	3,975,261	70,764	0	0	4,046,025
BROWN SOLAR	2,453,825	302,539	0	0	2,756,364	302,539	0	0	3,058,903
HAEFLING UNITS 1, 2 AND 3	2,850,466	16,093	0	0	2,866,559	16,093	0	0	2,882,652
PADDY'S RUN GENERATOR 13	2,805,560	71,908	0	0	2,877,468	71,908	0	0	2,949,376
SIMPSONVILLE SOLAR	23,801	15,130	0	0	38,931	16,253	0	0	55,184
OTHER SOLAR	4,736	5,418	0	0	10,154	5,416	0	0	15,570
TOTAL ACCOUNT 344 - GENERATORS	51,761,433	1,921,698	(90,164)	(7,213)	53,585,754	1,923,600	0	0	55,509,354
345.00 ACCESSORY ELECTRIC EQUIPMENT									
CANE RUN CC 7	3,431,542	352,841	0	0	3,784,383	352,842	0	0	4,137,225
TRIMBLE COUNTY CT 5	1,043,887	24,844	0	0	1,068,731	25,805	0	0	1,094,536
TRIMBLE COUNTY CT 6	2,504,538	58,355	0	0	2,562,893	58,355	0	0	2,621,248
TRIMBLE COUNTY CT 7	1,874,865	46,140	0	0	1,921,005	46,140	0	0	1,967,145
TRIMBLE COUNTY CT 8	1,784,103	39,707	0	0	1,823,810	39,707	0	0	1,863,517
TRIMBLE COUNTY CT 9	1,817,473	37,178	0	0	1,854,651	37,178	0	0	1,891,829
TRIMBLE COUNTY CT 10	4,196,556	159,826	0	0	4,356,382	159,826	0	0	4,516,208
BROWN CT 5	1,431,833	25,796	0	0	1,457,629	25,948	0	0	1,483,577
BROWN CT 6	1,388,628	27,210	0	0	1,415,838	27,907	0	0	1,443,745
BROWN CT 7	1,361,194	28,606	0	0	1,389,800	28,833	0	0	1,418,633
BROWN CT 8	2,536,476	36,042	0	0	2,572,518	37,316	0	0	2,609,834
BROWN CT 9	3,225,387	66,110	0	0	3,291,497	68,256	0	0	3,359,753
BROWN CT 10	2,172,924	44,144	0	0	2,217,068	44,144	0	0	2,261,212
BROWN CT 11	1,903,041	22,579	0	0	1,925,620	22,579	0	0	1,948,199
BROWN SOLAR	94,409	8,998	0	0	103,407	8,998	0	0	112,405
HAEFLING UNITS 1, 2 AND 3	742,060	17,264	0	0	759,324	17,264	0	0	776,588
PADDY'S RUN GENERATOR 13	1,577,802	27,080	0	0	1,604,882	27,163	0	0	1,632,045
SIMPSONVILLE SOLAR	599	7,185	0	0	7,784	7,185	0	0	14,969
OTHER SOLAR	1,943	1,806	0	0	3,749	1,806	0	0	5,555
TOTAL ACCOUNT 345 - ACCESSORY ELECTRIC EQUIPMENT	33,089,260	1,031,711	0	0	34,120,971	1,037,252	0	0	35,158,223
346.00 MISCELLANEOUS POWER PLANT EQUIPMENT									
CANE RUN CC 7	383,685	50,688	0	0	434,373	50,688	0	0	485,061
TRIMBLE COUNTY CT 5	18,102	326	0	0	18,428	326	0	0	18,754
TRIMBLE COUNTY CT 7	5,214	103	0	0	5,317	103	0	0	5,420
TRIMBLE COUNTY CT 8	5,197	103	0	0	5,300	103	0	0	5,403
TRIMBLE COUNTY CT 9	5,329	106	0	0	5,435	106	0	0	5,541
TRIMBLE COUNTY CT 10	19,887	574	0	0	20,461	574	0	0	21,035
BROWN CT 5	1,418,209	22,074	0	0	1,440,283	22,074	0	0	1,462,357
BROWN CT 6	52,843	1,995	0	0	54,838	1,995	0	0	56,833
BROWN CT 7	42,374	1,264	0	0	43,638	1,264	0	0	44,902
BROWN CT 8	251,605	3,673	0	0	255,278	3,673	0	0	259,951
BROWN CT 9	580,838	11,993	0	0	592,831	11,993	0	0	604,824
BROWN CT 10	169,106	3,049	0	0	172,155	3,049	0	0	175,204
BROWN CT 11	398,372	6,553	0	0	404,925	6,553	0	0	411,478
BROWN SOLAR	65,241	10,401	0	0	75,642	11,499	0	0	87,141

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KENTUCKY UTILITIES COMPANY

BRINGFORWARD OF ELECTRIC RESERVE AS OF JUNE 30, 2020 TO JUNE 30, 2021

ACCOUNT (1)	BOOK RESERVE JUNE 30, 2020 (2)	JULY TO DECEMBER 2020			BOOK RESERVE DECEMBER 31, 2020 (6)=(2)+(3)+(4)+(5)	JANUARY TO JUNE 2021			BOOK RESERVE JUNE 30, 2021 (10)=(6)+(7)+(8)+(9)
		ACCRUAL (3)	RETIREMENTS (4)	NET SALVAGE (5)		ACCRUAL (7)	RETIREMENTS (8)	NET SALVAGE (9)	
HAEFLING UNITS 1, 2 AND 3	96,220	2,948	0	0	99,168	2,948	0	0	102,116
PADDY'S RUN GENERATOR 13	732,425	11,519	0	0	743,944	11,666	0	0	755,610
SIMPSONVILLE SOLAR	54	667	0	0	721	667	0	0	1,388
TOTAL ACCOUNT 346 - MISCELLANEOUS POWER PLANT EQUIPMENT	4,244,701	128,036	0	0	4,372,737	130,898	0	0	4,503,635
TOTAL OTHER PRODUCTION PLANT	399,390,346	16,211,752	(675,946)	(62,240)	414,863,912	16,546,847	0	0	431,410,759
TRANSMISSION PLANT									
350.10 LAND RIGHTS	18,230,717	114,013	0	0	18,344,730	116,848	0	0	18,461,578
352.10 STRUCTURES AND IMPROVEMENTS	8,267,389	308,849	0	0	8,576,238	308,921	0	0	8,885,159
353.10 STATION EQUIPMENT	83,734,890	3,512,414	(1,210,282)	(181,542)	85,855,480	3,678,327	(1,409,267)	(211,390)	87,913,150
353.20 STATION EQUIPMENT - SYSTEM CONTROL/COMMUNICATION	1,251,881	1,764	0	0	1,253,645	1,820	0	0	1,255,465
354.00 TOWERS AND FIXTURES	54,271,322	779,680	0	0	55,051,002	779,680	0	0	55,830,682
355.00 POLES AND FIXTURES	88,419,343	8,567,666	(1,295,881)	(1,036,705)	94,654,423	9,586,623	(1,355,110)	(1,084,088)	101,801,848
356.00 OVERHEAD CONDUCTORS AND DEVICES	121,815,399	2,911,356	(588,122)	(470,498)	123,668,135	3,108,157	(743,936)	(595,149)	125,437,207
357.00 UNDERGROUND CONDUIT	206,431	5,010	0	0	211,441	5,010	0	0	216,451
358.00 UNDERGROUND CONDUCTORS AND DEVICES	885,622	6,100	0	0	891,722	6,273	0	0	897,995
TOTAL TRANSMISSION PLANT	377,082,994	16,206,852	(3,094,285)	(1,688,745)	388,506,816	17,591,659	(3,508,314)	(1,890,627)	400,699,534
DISTRIBUTION PLANT									
360.10 LAND RIGHTS	1,521,583	9,279	0	0	1,530,862	9,279	0	0	1,540,141
361.00 STRUCTURES AND IMPROVEMENTS	3,321,519	261,270	0	0	3,582,789	290,950	0	0	3,873,739
362.00 STATION EQUIPMENT	58,520,012	2,872,647	(532,287)	(106,457)	60,753,915	3,086,615	(430,604)	(86,121)	63,323,805
364.00 POLES, TOWERS, AND FIXTURES	178,929,901	5,867,092	(667,772)	(333,886)	183,795,335	6,037,470	(523,698)	(261,849)	189,047,258
365.00 OVERHEAD CONDUCTORS AND DEVICES	104,432,586	7,157,634	(3,317,997)	(995,399)	107,276,824	7,509,525	(2,522,439)	(756,732)	111,507,178
366.00 UNDERGROUND CONDUIT	1,089,070	30,037	0	0	1,119,107	30,037	0	0	1,149,144
367.00 UNDERGROUND CONDUCTORS AND DEVICES	56,303,489	2,769,656	(161,963)	(16,196)	58,894,986	2,908,806	0	0	61,803,792
368.00 LINE TRANSFORMERS	154,030,285	3,090,276	(1,181,031)	(59,052)	155,880,478	3,118,799	(975,511)	(48,776)	157,974,990
369.00 SERVICES	67,598,188	1,692,479	0	0	69,290,667	1,692,543	0	0	70,983,210
370.00 METERS	34,497,040	1,724,267	(812,874)	0	35,408,433	1,752,242	(59,678)	0	37,100,997
370.01 METERS - AMS	433,210	123,534	0	0	556,744	125,087	0	0	681,831
370.11 METERS - AMI	82	27	0	0	109	27	0	0	136
370.20 METERS - CT AND PT	6,136,397	731,666	0	0	6,868,063	731,666	0	0	7,599,729
371.01 INSTALLATIONS ON CUSTOMERS' PREMISES - EV CHARGING STATIONS	15,336	7,994	0	0	23,330	7,994	0	0	31,324
373.00 STREET LIGHTING AND SIGNAL SYSTEMS	48,376,479	2,344,598	(800,433)	(80,043)	49,840,601	2,419,813	(577,610)	(57,761)	51,625,043
TOTAL DISTRIBUTION PLANT	715,205,177	28,682,456	(7,474,357)	(1,591,033)	734,822,243	29,720,853	(5,089,539)	(1,211,239)	758,242,318
GENERAL PLANT									
390.10 STRUCTURES AND IMPROVEMENTS - OWNED PROPERTY	15,023,337	1,100,526	(23,406)	(3,511)	16,096,946	1,227,683	0	0	17,324,629
390.20 STRUCTURES AND IMPROVEMENTS - LEASEHOLD IMPROVEMENTS	12,538	435	0	0	12,973	435	0	0	13,408
391.10 OFFICE FURNITURE AND EQUIPMENT	6,028,173	239,071	(3,652,646)	0	2,614,598	216,765	(241,918)	0	2,589,445
391.20 NON PC COMPUTER EQUIPMENT	12,490,167	2,549,182	(4,349,832)	0	10,689,517	2,527,180	(1,042,584)	0	12,174,113
391.31 PERSONAL COMPUTERS	1,663,928	1,183,061	(1,107,707)	0	1,739,282	1,096,627	(960,483)	0	1,875,426
TRANSPORTATION EQUIPMENT									
392.00 CARS AND LIGHT TRUCKS	779,071	53,103	(58,760)	0	773,414	54,021	0	0	827,435
392.10 HEAVY TRUCKS AND OTHER	3,625,989	156,798	(6,659)	0	3,775,128	156,718	0	0	3,932,846
TOTAL TRANSPORTATION EQUIPMENT	4,405,060	209,901	(65,419)	0	4,549,542	210,739	0	0	4,760,281
393.00 STORES EQUIPMENT	440,725	15,976	(40,568)	0	416,133	17,145	(77,466)	0	355,812
394.00 TOOLS, SHOP AND GARAGE EQUIPMENT	5,415,922	320,128	(102,890)	0	5,633,160	339,208	(160,557)	0	5,811,811
POWER OPERATED EQUIPMENT									
396.10 LARGE MACHINERY	1,438,770	134,412	(35,372)	0	1,537,810	132,414	0	0	1,670,224
396.20 OTHER	349,060	26,049	0	0	375,109	26,049	0	0	401,158
TOTAL POWER OPERATED EQUIPMENT	1,787,830	160,461	(35,372)	0	1,912,919	158,463	0	0	2,071,382

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KENTUCKY UTILITIES COMPANY

BRINGFORWARD OF ELECTRIC RESERVE AS OF JUNE 30, 2020 TO JUNE 30, 2021

ACCOUNT (1)	BOOK RESERVE JUNE 30, 2020 (2)	JULY TO DECEMBER 2020			BOOK RESERVE DECEMBER 31, 2020 (6)=(2)+(3)+(4)+(5)	JANUARY TO JUNE 2021			BOOK RESERVE JUNE 30, 2021 (10)=(6)+(7)+(8)+(9)
		ACCRUAL (3)	RETIREMENTS (4)	NET SALVAGE (5)		ACCRUAL (7)	RETIREMENTS (8)	NET SALVAGE (9)	
COMMUNICATION EQUIPMENT									
397.00 MICROWAVE, FIBER AND OTHER	15,181,416	881,767	(16,061)	0	16,047,122	965,346	0	0	17,012,468
397.10 RADIO AND TELEPHONE	14,917,131	718,690	0	0	15,635,821	717,384	0	0	16,353,205
397.20 DSM	4,261,154	834,558	0	0	5,095,712	834,506	0	0	5,930,218
TOTAL COMMUNICATION EQUIPMENT	34,359,701	2,435,015	(16,061)	0	36,778,655	2,517,236	0	0	39,295,891
TOTAL GENERAL PLANT	81,627,381	8,213,756	(9,393,901)	(3,511)	80,443,725	8,311,481	(2,483,009)	0	86,272,197
TOTAL DEPRECIABLE PLANT	3,447,024,271	209,789,933	(58,101,245)	(4,134,794)	3,594,578,165	214,791,856	(27,820,725)	(4,064,135)	3,777,485,161
NONDEPRECIABLE PLANT									
301.00 ORGANIZATION		0	0	0	0	0	0	0	0
310.20 LAND		0	0	0	0	0	0	0	0
317.07 ARO STEAM PRODUCTION- EQUIPMENT	4,058,062	0	0	0	4,058,062	0	0	0	4,058,062
317.08 ARO STEAM PRODUCTION - CCR	100,498,428	0	0	0	100,498,428	0	0	0	100,498,428
337.07 ARO HYDRAULIC PRODUCTION	82,310	0	0	0	82,310	0	0	0	82,310
340.20 LAND		0	0	0	0	0	0	0	0
347.07 ARO OTHER PRODUCTION	103,751	0	0	0	103,751	0	0	0	103,751
350.20 LAND		0	0	0	0	0	0	0	0
359.15 ARO TRANSMISSION (L/B)	8,121	0	0	0	8,121	0	0	0	8,121
359.17 ARO TRANSMISSION (EQUIPMENT)	102,107	0	0	0	102,107	0	0	0	102,107
360.20 LAND		0	0	0	0	0	0	0	0
374.05 ARO DISTRIBUTION (L/B)	62,985	0	0	0	62,985	0	0	0	62,985
374.07 ARO DISTRIBUTION (EQUIPMENT)	69,412	0	0	0	69,412	0	0	0	69,412
389.20 LAND		0	0	0	0	0	0	0	0
TOTAL NONDEPRECIABLE PLANT	104,985,176	0	0	0	104,985,176	0	0	0	104,985,176
TOTAL ELECTRIC PLANT	3,552,009,447	209,789,933	(58,101,245)	(4,134,794)	3,699,563,341	214,791,856	(27,820,725)	(4,064,135)	3,882,470,337

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 19

Responding Witness: John J. Spanos

- Q-1-19. Please provide all workpapers that show the calculations performed to determine the composite remaining life and annual accrual rate for each account as of June 30, 2021, as shown in Exhibit JJS-KU-2. These workpapers should be similar to those shown in Part V of the Company's depreciation study filed as Exhibit JJS-KU-1.
- A-1-19. See attached for the remaining life calculations as of June 30, 2021 which supports Exhibit JJS-KU-2.

KENTUCKY UTILITIES COMPANY

ACCOUNT 302 FRANCHISES AND CONSENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 20-SQUARE						
NET SALVAGE PERCENT.. 0						
1991	1,588.57	1,589	1,589			
1992	792.28	792	792			
1993	6,183.50	6,184	6,184			
1995	30,302.58	30,303	30,303			
1996	10,457.30	10,457	10,457			
1997	1,725.32	1,725	1,725			
1998	2,055.48	2,055	2,055			
1999	711.08	711	711			
2002	585.80	557	586			
2003	1,516.92	1,365	1,517			
2020	104,245.30	6,515	18,501	85,744	18.75	4,573
	160,164.13	62,253	74,420	85,744		4,573
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					18.8	2.86

KENTUCKY UTILITIES COMPANY

ACCOUNT 303 MISCELLANEOUS INTANGIBLE PLANT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 5-SQUARE						
NET SALVAGE PERCENT.. 0						
2016	8,503,353.31	8,503,353	8,503,353			
2017	9,595,064.41	7,676,052	7,428,682	2,166,382	1.00	2,166,382
2018	13,166,187.92	7,899,713	7,645,136	5,521,052	2.00	2,760,526
2019	20,985,999.81	8,394,400	8,123,880	12,862,120	3.00	4,287,373
2020	27,303,301.17	6,825,825	6,605,855	20,697,446	3.75	5,519,319
2021	14,004,238.64		0	14,004,238	5.00	2,800,848
	93,558,145.26	39,299,343	38,306,906	55,251,239		17,534,448
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						3.2 18.74

KENTUCKY UTILITIES COMPANY

ACCOUNT 303.1 CCS SOFTWARE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SOFTWARE - 10 YEAR LIFE SURVIVOR CURVE.. 10-SQUARE NET SALVAGE PERCENT.. 0						
2011	2,098,773.95	2,098,774	2,098,774			
	2,098,773.95	2,098,774	2,098,774			
SOFTWARE - SUBSEQUENT TO 2011 INTERIM SURVIVOR CURVE.. SQUARE PROBABLE RETIREMENT YEAR.. 12-2027 NET SALVAGE PERCENT.. 0						
2013	1,149,615.52	634,266	690,347	459,268	6.50	70,657
2017	14,448,869.46	5,504,297	5,990,981	8,457,889	6.50	1,301,214
2021	261,249.97			261,250	6.50	40,192
	15,859,734.95	6,138,563	6,681,328	9,178,407		1,412,063
	17,958,508.90	8,237,337	8,780,102	9,178,407		1,412,063
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						6.5 7.86

KENTUCKY UTILITIES COMPANY

ACCOUNT 303.3 CLOUD SOFTWARE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 10-SQUARE						
NET SALVAGE PERCENT.. 0						
2020	1,806,612.98	225,827	135,496	1,671,117	8.75	190,985
	1,806,612.98	225,827	135,496	1,671,117		190,985
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						8.7 10.57

KENTUCKY UTILITIES COMPANY

ACCOUNT 311 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2066						
NET SALVAGE PERCENT.. -13						
1990	34,663,846.89	16,146,718	13,488,442	25,681,705	41.65	616,608
1997	449,904.13	178,196	148,859	359,533	42.36	8,488
2002	24,848.68	8,382	7,002	21,077	42.79	493
2003	61,493.38	19,954	16,669	52,819	42.87	1,232
2008	53,301.70	13,554	11,323	48,908	43.22	1,132
2011	57,888,820.41	11,927,002	9,963,429	55,450,938	43.41	1,277,377
2012	377,820.80	71,333	59,589	367,348	43.47	8,451
2013	79,448.45	13,586	11,349	78,427	43.52	1,802
2014	158,517.38	24,146	20,171	158,954	43.58	3,647
2015	155,486.13	20,710	17,300	158,399	43.63	3,631
2016	856,320.10	96,880	80,930	886,711	43.68	20,300
2017	348,931.66	32,210	26,907	367,386	43.73	8,401
2018	637,412.19	45,039	37,624	682,652	43.78	15,593
2019	926,517.48	44,601	37,258	1,009,707	43.83	23,037
2020	1,047,244.84	32,022	26,750	1,156,637	43.86	26,371
	97,729,914.22	28,674,333	23,953,604	86,481,199		2,016,563

TRIMBLE COUNTY UNIT 2 SCRUBBER
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5
PROBABLE RETIREMENT YEAR.. 6-2066
NET SALVAGE PERCENT.. -13

1990	5,493,644.11	2,558,987	3,453,201	2,754,617	41.65	66,137
2012	62,807.35	11,858	16,002	54,971	43.47	1,265
2017	72,476.48	6,690	9,028	72,871	43.73	1,666
2018	152,942.40	10,807	14,583	158,242	43.78	3,614
	5,781,870.34	2,588,342	3,492,814	3,040,699		72,682

KENTUCKY UTILITIES COMPANY

ACCOUNT 311 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY TRAINING CENTER						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2066						
NET SALVAGE PERCENT.. -5						
2017	1,133,285.27	97,207	57,747	1,132,202	43.73	25,891
2018	21,280.84	1,397	830	21,515	43.78	491
2019	124,136.78	5,553	3,299	127,045	43.83	2,899
2020	8,235.59	234	139	8,508	43.86	194
	1,286,938.48	104,391	62,015	1,289,270		29,475

SYSTEM LABORATORY						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2040						
NET SALVAGE PERCENT.. -1						
1989	724,776.82	457,479	597,288	134,736	18.55	7,263
1990	58,100.00	36,231	47,303	11,378	18.57	613
1994	6,176.00	3,647	4,762	1,476	18.63	79
1997	16,663.00	9,356	12,215	4,614	18.67	247
2011	19,253.00	6,679	8,720	10,725	18.81	570
2012	255,306.75	82,538	107,762	150,098	18.82	7,975
2014	8,935.37	2,420	3,160	5,865	18.83	311
2015	13,745.45	3,319	4,333	9,550	18.84	507
2017	14,162.74	2,478	3,235	11,069	18.85	587
2018	6,101.17	839	1,095	5,067	18.85	269
2020	55,167.01	3,437	4,487	51,231	18.86	2,716
	1,178,387.31	608,423	794,362	395,809		21,137

BROWN UNIT 1						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 2-2019						
NET SALVAGE PERCENT.. -4						
1956	2,193,997.50	2,281,757	2,281,757			
1958	380.33	396	396			
1965	281.95	293	293			
1979	12,522.62	13,024	13,024			
1982	90,968.64	94,607	94,607			
1983	1,961.01	2,039	2,039			
1984	5,201.79	5,410	5,410			
1985	1,845.50	1,919	1,919			
1987	43,061.54	44,784	44,784			

KENTUCKY UTILITIES COMPANY

ACCOUNT 311 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN UNIT 1						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 2-2019						
NET SALVAGE PERCENT.. -4						
1988	45,166.06	46,973	46,973			
1989	64,088.70	66,652	66,652			
1990	657.05	683	683			
1991	23,138.98	24,065	24,065			
1994	656,487.76	682,747	682,747			
1996	42,323.43	44,016	44,016			
1997	72,432.68	75,330	75,330			
1998	11,051.85	11,494	11,494			
2004	59,425.01	61,802	61,802			
2005	71,551.08	74,413	74,413			
2006	35,799.23	37,231	37,231			
2007	85,223.92	88,633	88,633			
2008	436,073.68	453,517	453,517			
2014	8,908.38	9,265	9,265			
	3,962,548.69	4,121,050	4,121,051			

BROWN UNIT 2
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5
PROBABLE RETIREMENT YEAR.. 2-2019
NET SALVAGE PERCENT.. -4

1963	1,267,982.45	1,318,702	1,318,702			
1965	11,589.52	12,053	12,053			
1979	24,545.95	25,528	25,528			
1980	399.92	416	416			
1992	96,409.90	100,266	100,266			
1997	19,477.46	20,257	20,257			
2004	43,200.52	44,929	44,929			
2005	5,793.58	6,025	6,025			
2007	565,018.59	587,619	587,619			
2009	21,690.24	22,558	22,558			
2012	133,555.40	138,898	138,898			
2015	91,828.24	95,501	95,501			
2016	12,530.96	13,032	13,033			
	2,294,022.73	2,385,784	2,385,784			

KENTUCKY UTILITIES COMPANY

ACCOUNT 311 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2028						
NET SALVAGE PERCENT.. -4						
1967	1,439.36	1,320	1,184	313	6.89	45
1968	93.78	86	77	20	6.89	3
1971	7,451,297.36	6,775,024	6,075,267	1,674,082	6.90	242,621
1972	56,622.84	51,362	46,057	12,831	6.90	1,860
1973	11,989.24	10,846	9,726	2,743	6.91	397
1974	2,997.48	2,705	2,426	692	6.91	100
1975	15,090.67	13,579	12,176	3,518	6.91	509
1977	1,211,007.22	1,083,238	971,356	288,092	6.92	41,632
1979	8,693.34	7,727	6,929	2,112	6.92	305
1980	275,133.52	243,679	218,511	67,628	6.93	9,759
1983	3,926.67	3,439	3,084	1,000	6.93	144
1984	146,396.81	127,668	114,482	37,771	6.94	5,443
1985	37,537.44	32,594	29,228	9,811	6.94	1,414
1986	44,517.64	38,480	34,506	11,793	6.94	1,699
1987	251,076.37	215,985	193,677	67,442	6.94	9,718
1988	56,877.87	48,668	43,641	15,512	6.95	2,232
1989	471,664.74	401,426	359,965	130,567	6.95	18,787
1990	17,135.65	14,501	13,003	4,818	6.95	693
1991	68,354.92	57,497	51,558	19,531	6.95	2,810
1992	756,242.53	632,080	566,796	219,696	6.95	31,611
1993	84,657.94	70,251	62,995	25,049	6.96	3,599
1995	22,955.79	18,765	16,827	7,047	6.96	1,012
1997	196,842.15	158,137	141,804	62,912	6.96	9,039
1998	127,912.46	101,770	91,259	41,770	6.96	6,001
2001	83,858.28	64,454	57,797	29,416	6.97	4,220
2003	122,637.26	91,639	82,174	45,369	6.97	6,509
2004	122,242.40	89,870	80,588	46,544	6.97	6,678
2005	95,122.81	68,686	61,592	37,336	6.97	5,357
2007	8,000,318.76	5,537,597	4,965,648	3,354,684	6.97	481,303
2009	191,682.81	125,611	112,637	86,713	6.98	12,423
2010	423,785.73	268,779	241,018	199,719	6.98	28,613
2011	43,315.26	26,442	23,711	21,337	6.98	3,057
2012	602,754.91	351,847	315,507	311,359	6.98	44,607
2013	504,010.74	278,948	250,137	274,034	6.98	39,260
2014	966,147.92	501,673	449,858	554,936	6.98	79,504
2015	57,109.99	27,381	24,553	34,841	6.98	4,992
2016	3,483,224.15	1,506,620	1,351,009	2,271,544	6.98	325,436
2017	2,574,482.38	972,293	871,870	1,805,592	6.98	258,681
2018	580,647.62	181,102	162,397	441,477	6.98	63,249

KENTUCKY UTILITIES COMPANY

ACCOUNT 311 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2028						
NET SALVAGE PERCENT.. -4						
2019	353,349.29	81,846	73,393	294,091	6.98	42,133
2020	13,473.90	2,128	1,908	12,105	6.98	1,734
2021	564,300.00			586,872	6.99	83,959
	30,102,928.00	20,287,743	18,192,328	13,114,717		1,883,148
BROWN UNITS 1, 2 AND 3 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2028						
NET SALVAGE PERCENT.. -4						
2013	45,235,689.37	25,036,000	21,349,824	25,695,293	6.98	3,681,274
2015	146,854.51	70,408	60,041	92,687	6.98	13,279
2018	170,802.81	53,273	45,429	132,206	6.98	18,941
	45,553,346.69	25,159,681	21,455,295	25,920,186		3,713,494
GHENT UNIT 1 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1997	8,362,584.36	5,782,354	6,725,688	2,222,277	12.86	172,805
2007	34,607.76	19,146	22,269	14,761	12.90	1,144
2018	94,006.52	18,778	21,841	78,746	12.94	6,085
	8,491,198.64	5,820,278	6,769,799	2,315,784		180,034
GHENT UNIT 1						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1974	14,109,386.44	11,772,222	9,114,377	5,982,666	12.67	472,191
1979	286,862.72	233,403	180,707	126,236	12.72	9,924
1980	27,158.03	21,971	17,011	12,049	12.73	947
1981	10,785.85	8,674	6,716	4,825	12.74	379
1985	107,213.30	83,931	64,982	49,737	12.78	3,892
1987	99,821.27	76,969	59,592	47,217	12.79	3,692
1988	20,299.74	15,522	12,018	9,703	12.80	758

KENTUCKY UTILITIES COMPANY

ACCOUNT 311 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 1						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1992	29,288.58	21,556	16,689	14,650	12.83	1,142
1994	193,357.52	139,141	107,727	99,166	12.84	7,723
1995	60,889.96	43,270	33,501	31,651	12.85	2,463
1996	351,612.15	246,649	190,962	185,263	12.85	14,417
2003	143,343.29	88,747	68,710	84,667	12.89	6,568
2005	240,416.59	141,508	109,559	147,686	12.89	11,457
2007	240,566.13	133,086	103,039	154,367	12.90	11,966
2009	333,891.65	170,983	132,380	224,884	12.91	17,419
2010	643,326.63	314,656	243,615	444,744	12.91	34,450
2011	503,656.59	233,527	180,803	358,110	12.92	27,717
2013	237,324.73	96,506	74,718	179,220	12.92	13,872
2015	1,094,010.89	368,491	285,296	885,296	12.93	68,468
2016	1,514,759.74	449,365	347,911	1,272,882	12.93	98,444
2017	724,255.76	181,587	140,590	634,364	12.94	49,023
2018	532,816.91	106,429	82,400	487,714	12.94	37,690
2019	261,436.87	37,124	28,742	250,995	12.94	19,397
2020	1,239,820.38	116,012	89,820	1,236,788	12.94	95,579
	23,006,301.72	15,101,329	11,691,863	12,924,880		1,009,578
GHENT UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1977	14,541,613.40	11,958,896	9,305,357	6,254,169	12.70	492,454
1979	227,477.00	185,084	144,016	99,384	12.72	7,813
1980	88,059.38	71,241	55,433	38,790	12.73	3,047
1981	10,786.00	8,674	6,749	4,792	12.74	376
1986	385,657.47	299,727	233,221	179,432	12.78	14,040
1988	13,292.75	10,164	7,909	6,315	12.80	493
1989	11,294.78	8,560	6,661	5,425	12.81	423
1991	1,929.73	1,435	1,117	948	12.82	74
1995	27,739.56	19,713	15,339	14,342	12.85	1,116
1998	67,159.90	45,755	35,603	36,259	12.86	2,820
2003	223,834.88	138,581	107,832	131,672	12.89	10,215
2013	194,635.03	79,147	61,585	146,674	12.92	11,352
2015	130,289.29	43,885	34,147	105,262	12.93	8,141
2016	351,144.86	104,170	81,056	294,669	12.93	22,790
2017	241,422.48	60,530	47,099	211,223	12.94	16,323

KENTUCKY UTILITIES COMPANY

ACCOUNT 311 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
2018	84,507.20	16,880	13,135	77,288	12.94	5,973
2019	372,603.17	52,910	41,170	357,516	12.94	27,629
2020	335,267.89	31,372	24,411	334,326	12.94	25,837
	17,308,714.77	13,136,724	10,221,839	8,298,486		650,916

GHENT UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
1981	33,982,323.58	25,861,459	25,768,176	10,592,911	15.59	679,468
1982	1,235,435.00	933,233	929,867	392,049	15.61	25,115
1983	511.16	383	382	165	15.62	11
1987	2,248,542.00	1,629,230	1,623,353	782,587	15.67	49,942
1996	195,780.51	127,204	126,745	82,740	15.77	5,247
2001	263,336.76	155,929	155,367	126,404	15.81	7,995
2002	234,131.24	135,517	135,028	115,492	15.81	7,305
2004	2,640,221.52	1,449,866	1,444,636	1,380,401	15.83	87,202
2005	105,410.84	56,199	55,996	56,793	15.83	3,588
2010	643,443.60	279,669	278,660	409,824	15.86	25,840
2011	109,662.90	44,966	44,804	72,535	15.87	4,571
2014	9,327,903.35	3,029,290	3,018,363	6,962,493	15.88	438,444
2016	64,860.31	16,484	16,425	52,976	15.89	3,334
2017	326,348.71	69,629	69,378	279,815	15.90	17,598
2018	136,518.82	22,991	22,908	123,167	15.90	7,746
2019	132,098.02	15,644	15,588	125,757	15.91	7,904
2020	770,568.42	59,612	59,397	765,111	15.91	48,090
	52,417,096.74	33,887,305	33,765,072	22,321,222		1,419,400

GHENT UNIT 4						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
1984	15,164,635.73	11,280,427	9,377,932	6,848,229	15.63	438,146
1985	821,848.67	606,155	503,924	375,454	15.65	23,991
1986	728,069.60	532,377	442,589	336,445	15.66	21,484
1987	15,729.79	11,397	9,475	7,356	15.67	469

KENTUCKY UTILITIES COMPANY

ACCOUNT 311 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 4						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
1988	8,050.84	5,778	4,804	3,811	15.68	243
1989	19,897.98	14,133	11,749	9,541	15.70	608
1991	16,105.13	11,193	9,305	7,927	15.72	504
1992	24,144.26	16,580	13,784	12,051	15.73	766
1993	17,300.81	11,732	9,753	8,759	15.74	556
1994	84,999.04	56,876	47,284	43,665	15.75	2,772
1996	54,480.76	35,398	29,428	28,866	15.77	1,830
1997	1,926,186.10	1,232,098	1,024,299	1,036,720	15.77	65,740
2001	616,214.38	364,877	303,339	356,011	15.81	22,518
2002	185,855.96	107,575	89,432	109,434	15.81	6,922
2003	85,795.68	48,423	40,256	51,545	15.82	3,258
2004	276,085.67	151,611	126,041	169,371	15.83	10,699
2005	181,346.07	96,683	80,377	113,663	15.83	7,180
2007	7,165,008.33	3,564,107	2,963,004	4,703,555	15.85	296,754
2010	580,422.02	252,277	209,729	411,322	15.86	25,935
2011	437,079.29	179,218	148,992	318,683	15.87	20,081
2012	265,341.48	101,940	84,747	199,168	15.87	12,550
2013	1,074,478.91	381,939	317,523	832,169	15.88	52,404
2014	10,135,497.03	3,291,560	2,736,423	8,108,558	15.88	510,614
2015	461,430.53	134,181	111,551	382,180	15.89	24,052
2016	901,839.75	229,199	190,544	774,425	15.89	48,737
2017	1,560,161.85	332,873	276,732	1,392,641	15.90	87,587
2018	1,342,106.27	226,020	187,901	1,248,153	15.90	78,500
2019	2,052,763.79	243,104	202,103	1,994,354	15.91	125,352
2020	3,850,843.44	297,905	247,662	3,872,741	15.91	243,416
2021	750,000.00			802,500	15.91	50,440
	50,803,719.16	23,817,636	19,800,683	34,559,297		2,184,108

GHENT UNIT 2 SCRUBBER

INTERIM SURVIVOR CURVE.. IOWA 100-R2.5

PROBABLE RETIREMENT YEAR.. 6-2034

NET SALVAGE PERCENT.. -7

1994	15,622,909.76	11,242,357	12,039,159	4,677,354	12.84	364,280
	15,622,909.76	11,242,357	12,039,159	4,677,354		364,280

KENTUCKY UTILITIES COMPANY

ACCOUNT 311 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 4 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
2020	130,475.60	10,094	2,290	137,319	15.91	8,631
	130,475.60	10,094	2,290	137,319		8,631
	355,670,372.85	186,945,470	168,747,958	215,476,222		13,553,446
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						15.9 3.81

KENTUCKY UTILITIES COMPANY

ACCOUNT 311.2 STRUCTURES AND IMPROVEMENTS - RETIRED PLANT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TYRONE UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 12-2015						
NET SALVAGE PERCENT.. -10						
1978	14,114.91	15,526	15,526			
1989	13,725.06	15,098	15,098			
1994	7,063.50	7,770	7,770			
1998	20,400.94	22,441	22,441			
2003	8,480.22	9,328	9,328			
2007	85,925.07	94,518	94,518			
2009	52,703.55	57,974	57,974			
2015	114,897.73	126,388	126,387			
	317,310.98	349,043	349,042			

TYRONE UNITS 1 AND 2
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5
PROBABLE RETIREMENT YEAR.. 12-2015
NET SALVAGE PERCENT.. -10

1974	35,937.44	39,531	39,531			
2000	36,257.09	39,883	39,883			
2002	6,858.03	7,544	7,544			
2004	4,683.12	5,151	5,151			
	83,735.68	92,109	92,109			

GREEN RIVER UNIT 3
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5
PROBABLE RETIREMENT YEAR.. 12-2015
NET SALVAGE PERCENT.. -10

1982	233,360.64	256,697	256,697			
1985	19,443.60	21,388	21,388			
1996	107,389.55	118,129	118,129			
1997	26,427.69	29,070	29,070			
2006	40,561.24	44,617	44,617			
2008	29,730.02	32,703	32,703			
2011	107,003.10	117,703	117,703			
	563,915.84	620,307	620,307			

KENTUCKY UTILITIES COMPANY

ACCOUNT 311.2 STRUCTURES AND IMPROVEMENTS - RETIRED PLANT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GREEN RIVER UNIT 4						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 12-2015						
NET SALVAGE PERCENT.. -10						
1991	18,753.13	20,628	20,628			
1992	453.00	498	498			
1994	0.20		0			
1995	238.43	262	262			
1997	4,342.17	4,776	4,776			
2000	2,251.24	2,476	2,476			
2001	189,750.76	208,726	208,726			
2002	17,285.03	19,014	19,014			
2005	36,465.31	40,112	40,112			
2007	32,170.54	35,388	35,388			
2009	84,512.80	92,964	92,964			
2010	102,969.33	113,266	113,266			
2011	149,591.79	164,551	164,551			
2013	5,857.28	6,443	6,443			
2016	42,182.68	46,401	46,401			
	686,823.69	755,505	755,506			

GREEN RIVER UNITS 1 AND 2
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5
PROBABLE RETIREMENT YEAR.. 12-2015
NET SALVAGE PERCENT.. -10

1961	67.20	74	74			
1965	6,953.70	7,649	7,649			
1970	0.08		0			
1973	5,098.15	5,608	5,608			
1974	28.00	31	31			
1975	366,037.07	402,641	402,641			
1978	34,073.00	37,480	37,480			
1997	68,189.00	75,008	75,008			
	480,446.20	528,491	528,491			

KENTUCKY UTILITIES COMPANY

ACCOUNT 311.2 STRUCTURES AND IMPROVEMENTS - RETIRED PLANT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
PINEVILLE UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 100-R2.5						
PROBABLE RETIREMENT YEAR.. 12-2015						
NET SALVAGE PERCENT.. -10						
2011	2,409.73	2,651	2,651			
2013	18,619.98	20,482	20,482			
	21,029.71	23,133	23,133			
	2,153,262.10	2,368,588	2,368,588			
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						0.0 0.00

KENTUCKY UTILITIES COMPANY

ACCOUNT 312 BOILER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2066						
NET SALVAGE PERCENT.. -13						
1990	30,014,537.94	14,261,519	16,736,827	17,179,600	34.11	503,653
1999	45,985.23	17,226	20,216	31,747	36.68	866
2002	234,168.74	78,902	92,597	172,014	37.40	4,599
2003	250,738.23	81,136	95,218	188,116	37.63	4,999
2004	103,265.36	32,030	37,589	79,101	37.85	2,090
2008	11,081.77	2,795	3,280	9,242	38.66	239
2011	468,334,021.75	95,465,535	112,035,063	417,182,381	39.21	10,639,693
2012	4,472,170.07	834,594	979,451	4,074,101	39.38	103,456
2013	298,319.04	50,322	59,056	278,044	39.55	7,030
2014	10,202,692.95	1,535,207	1,801,666	9,727,377	39.71	244,960
2015	5,472,318.01	719,661	844,569	5,339,150	39.86	133,948
2016	8,806,428.47	983,881	1,154,649	8,796,615	40.01	219,860
2017	13,327,716.15	1,213,711	1,424,369	13,635,950	40.16	339,541
2018	6,154,699.38	429,112	503,591	6,451,219	40.30	160,080
2019	108,442,535.18	5,138,105	6,029,903	116,510,162	40.44	2,881,062
2020	43,525,260.47	1,310,741	1,538,240	47,645,304	40.54	1,175,267
2021	2,460,305.51			2,780,145	40.70	68,308
	702,156,244.25	122,154,477	143,356,286	650,080,270		16,489,651

TRIMBLE COUNTY UNIT 2 SCRUBBER
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5
PROBABLE RETIREMENT YEAR.. 6-2066
NET SALVAGE PERCENT.. -13

1990	10,885,331.55	5,172,206	7,277,462	5,022,962	34.11	147,258
2003	51,829.65	16,771	23,597	34,970	37.63	929
2005	14,655.98	4,341	6,108	10,453	38.06	275
2007	131,148.15	35,034	49,294	98,903	38.47	2,571
2011	59,780,308.46	12,185,660	17,145,620	50,406,128	39.21	1,285,543
2012	1,218,956.00	227,481	320,073	1,057,347	39.38	26,850
2013	131,025.54	22,102	31,098	116,961	39.55	2,957
2014	338,774.33	50,976	71,725	311,090	39.71	7,834
2016	17,436.11	1,948	2,741	16,962	40.01	424
2018	457,849.34	31,922	44,915	472,454	40.30	11,723
2019	174,794.77	8,282	11,653	185,865	40.44	4,596
2020	99,750.00	3,004	4,227	108,491	40.54	2,676
	73,301,859.88	17,759,727	24,988,514	57,842,588		1,493,636

KENTUCKY UTILITIES COMPANY

ACCOUNT 312 BOILER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN UNIT 1						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 2-2019						
NET SALVAGE PERCENT.. -4						
1950	38,574.00	40,117	40,117			
1956	123,527.27	128,468	128,468			
1957	198,794.49	206,746	206,746			
1959	2,904.01	3,020	3,020			
1965	11,524.63	11,986	11,986			
1966	34.45	36	36			
1973	379,034.04	394,195	394,195			
1974	18,694.00	19,442	19,442			
1975	75,595.35	78,619	78,619			
1983	80,243.36	83,453	83,453			
1985	10,778.17	11,209	11,209			
1988	246,103.71	255,948	255,948			
1990	509.66	530	530			
1991	96,155.12	100,001	100,001			
1992	293,158.22	304,885	304,885			
1994	663,440.36	689,978	689,978			
1997	23,023.10	23,944	23,944			
1999	6,580.00	6,843	6,843			
2004	586,719.95	610,189	610,189			
2005	516,604.59	537,269	537,269			
2008	1,858,789.55	1,933,141	1,933,141			
2009	714,984.97	743,584	743,584			
2010	319,536.48	332,318	332,318			
2012	1,227,660.73	1,276,767	1,276,767			
2016	11,147.65	11,594	11,594			
2017	310,955.87	323,394	323,394			
2018	101,783.34	105,855	105,854			
	7,916,857.07	8,233,531	8,233,531			

BROWN UNIT 2
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5
PROBABLE RETIREMENT YEAR.. 2-2019
NET SALVAGE PERCENT.. -4

1980	2,147.24	2,233	2,233			
1985	3,930.00	4,087	4,087			
1998	380.00	395	395			
1999	34,961.86	36,360	36,360			
2004	32,179.90	33,467	33,467			

KENTUCKY UTILITIES COMPANY

ACCOUNT 312 BOILER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 2-2019						
NET SALVAGE PERCENT.. -4						
2005	6,141.23	6,387	6,387			
2007	201,771.91	209,843	209,843			
2010	14,012.98	14,573	14,573			
2012	441,813.61	459,486	459,486			
2013	87,553.08	91,055	91,055			
2015	15,856.66	16,491	16,491			
2016	228,299.10	237,431	237,431			
2017	233,712.30	243,061	243,061			
2018	173,528.46	180,470	180,470			
	1,476,288.33	1,535,339	1,535,340			
BROWN UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2028						
NET SALVAGE PERCENT.. -4						
1971	22,756,631.81	20,473,049	12,974,585	10,692,312	6.63	1,612,717
1972	348,341.43	312,665	198,148	164,127	6.64	24,718
1973	121,485.22	108,756	68,923	57,422	6.66	8,622
1974	22,953.34	20,496	12,989	10,882	6.67	1,631
1975	411.68	367	233	196	6.68	29
1976	8,008,219.84	7,112,247	4,507,314	3,821,235	6.69	571,186
1977	299,257.74	265,001	167,942	143,286	6.70	21,386
1980	327,461.78	287,198	182,009	158,551	6.73	23,559
1981	828.66	724	459	403	6.74	60
1982	1,741,154.49	1,515,984	960,739	850,061	6.75	125,935
1983	207,922.33	180,324	114,278	101,961	6.76	15,083
1984	582,353.28	502,990	318,765	286,883	6.77	42,376
1985	178,355.67	153,374	97,199	88,291	6.78	13,022
1986	6,291.32	5,387	3,414	3,129	6.78	462
1987	1,327,583.89	1,131,225	716,902	663,785	6.79	97,759
1988	823,436.57	698,048	442,381	413,993	6.80	60,881
1990	630,044.44	528,332	334,825	320,421	6.81	47,052
1991	23,164.03	19,305	12,234	11,856	6.82	1,738
1992	11,367,014.58	9,411,488	5,964,434	5,857,261	6.83	857,578
1993	2,336,877.59	1,922,117	1,218,122	1,212,231	6.83	177,486
1994	3,060,288.04	2,498,324	1,583,287	1,599,412	6.84	233,832
1995	737,406.10	597,471	378,641	388,261	6.84	56,763
1997	4,533,317.67	3,610,149	2,287,895	2,426,755	6.85	354,271

KENTUCKY UTILITIES COMPANY

ACCOUNT 312 BOILER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2028						
NET SALVAGE PERCENT.. -4						
1998	68,221.81	53,795	34,092	36,859	6.86	5,373
1999	400,975.03	312,948	198,328	218,686	6.86	31,878
2000	126,736.17	97,777	61,965	69,840	6.87	10,166
2001	250,517.16	190,946	121,010	139,528	6.87	20,310
2002	74,802.50	56,262	35,655	42,139	6.87	6,134
2003	41,462.78	30,718	19,467	23,654	6.88	3,438
2004	82,610.06	60,237	38,175	47,740	6.88	6,939
2005	3,188,783.15	2,284,391	1,447,709	1,868,625	6.88	271,602
2006	3,034,102.67	2,129,467	1,349,528	1,805,939	6.89	262,110
2007	8,063,525.48	5,535,559	3,508,104	4,877,963	6.89	707,977
2008	1,091,014.47	730,423	462,898	671,757	6.89	97,497
2009	245,297.25	159,494	101,078	154,031	6.90	22,323
2011	3,357,284.87	2,034,995	1,289,657	2,201,919	6.90	319,119
2012	126,605,743.65	73,346,759	46,482,757	85,187,216	6.91	12,328,107
2013	27,851,323.70	15,303,277	9,698,295	19,267,082	6.91	2,788,290
2014	2,075,845.97	1,069,984	678,091	1,480,788	6.91	214,296
2015	88,661,604.88	42,195,334	26,740,861	65,467,208	6.91	9,474,270
2016	98,874,745.82	42,423,436	26,885,418	75,944,318	6.92	10,974,612
2017	14,224,159.03	5,332,034	3,379,122	11,414,003	6.92	1,649,422
2018	2,501,994.00	774,013	490,523	2,111,551	6.92	305,137
2019	9,553,395.66	2,192,971	1,389,773	8,545,759	6.92	1,234,936
2020	54,900,997.55	8,546,856	5,416,482	51,680,555	6.93	7,457,512
2021	562,853.08			585,367	6.93	84,469
	505,278,798.24	256,216,697	162,374,708	363,115,242		52,624,063

BROWN UNITS 1, 2 AND 3 SCRUBBER
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5
PROBABLE RETIREMENT YEAR.. 6-2028
NET SALVAGE PERCENT.. -4

1994	5,133,599.83	4,190,911	3,137,457	2,201,487	6.84	321,855
2010	29,772,525.58	18,740,924	14,030,084	16,933,342	6.90	2,454,108
2012	254,048.30	147,178	110,182	154,028	6.91	22,291
2013	295,240,800.36	162,223,955	121,446,292	185,604,140	6.91	26,860,223
2014	763,244.58	393,410	294,520	499,254	6.91	72,251
2015	578,221.15	275,184	206,012	395,338	6.91	57,212
2016	1,606,262.67	689,187	515,948	1,154,565	6.92	166,845
2017	33,219.74	12,453	9,323	25,226	6.92	3,645

KENTUCKY UTILITIES COMPANY

ACCOUNT 312 BOILER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN UNITS 1, 2 AND 3 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2028						
NET SALVAGE PERCENT.. -4						
2018	1,678,804.47	519,352	388,804	1,357,152	6.92	196,120
2019	488,721.89	112,186	83,986	424,285	6.92	61,313
2020	2,203,405.68	343,021	256,797	2,034,745	6.93	293,614
	337,752,854.25	187,647,761	140,479,406	210,783,562		30,509,477

GHENT UNIT 1 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1997	20,664,483.89	14,085,811	16,653,968	5,457,030	12.46	437,964
2010	12,043.79	5,811	6,870	6,016	12.64	476
2011	642,770.28	294,267	347,918	339,846	12.65	26,865
2012	115,917,937.08	49,929,159	59,032,356	64,999,837	12.66	5,134,268
2013	152,123.49	61,030	72,157	90,615	12.67	7,152
2014	67,811.53	24,986	29,542	43,017	12.68	3,393
2015	452,417.04	150,406	177,828	306,258	12.69	24,134
2016	214,603.28	62,793	74,242	155,384	12.70	12,235
2017	1,120,790.72	277,697	328,327	870,919	12.71	68,522
2018	1,197,073.51	236,474	279,588	1,001,280	12.72	78,717
2019	488,776.33	68,899	81,461	441,530	12.72	34,711
2020	59,728.52	5,547	6,558	57,351	12.73	4,505
	140,990,559.46	65,202,880	77,090,816	73,769,083		5,832,942

GHENT UNIT 1						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1958	47,881.42	41,728	35,908	15,325	10.92	1,403
1974	42,409,512.79	34,876,761	30,012,084	15,366,095	11.80	1,302,211
1979	151,551.50	121,484	104,539	57,621	12.00	4,802
1980	478,232.27	381,208	328,036	183,672	12.03	15,268
1981	6,206.44	4,917	4,231	2,410	12.07	200
1982	36,968.52	29,108	25,048	14,508	12.10	1,199
1983	0.16		0			
1984	696.72	541	466	280	12.16	23
1985	3,865.67	2,982	2,566	1,570	12.19	129

KENTUCKY UTILITIES COMPANY

ACCOUNT 312 BOILER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 1						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1987	188,309.91	143,063	123,108	78,383	12.24	6,404
1989	83,861.37	62,635	53,899	35,833	12.29	2,916
1990	17,067.08	12,629	10,867	7,394	12.32	600
1991	307,321.68	225,212	193,799	135,035	12.34	10,943
1992	351,441.67	254,908	219,353	156,690	12.36	12,677
1994	76,483.33	54,247	46,681	35,157	12.40	2,835
1995	7,900,129.39	5,534,354	4,762,412	3,690,727	12.42	297,160
1996	640,062.24	442,554	380,826	304,041	12.44	24,441
1998	133,015.25	89,304	76,848	65,479	12.48	5,247
1999	147,864.29	97,710	84,081	74,134	12.49	5,935
2000	37,329.83	24,235	20,855	19,088	12.51	1,526
2001	2,626,936.65	1,674,154	1,440,640	1,370,182	12.52	109,439
2002	3,017,961.16	1,883,894	1,621,125	1,608,094	12.54	128,237
2003	1,464,446.69	894,404	769,651	797,307	12.55	63,530
2004	52,177,781.13	31,093,528	26,756,544	29,073,682	12.57	2,312,942
2005	6,489,445.62	3,766,128	3,240,821	3,702,886	12.58	294,347
2006	544,742.09	307,099	264,264	318,610	12.59	25,307
2007	1,350,807.61	737,295	634,456	810,908	12.60	64,358
2008	736,915.03	387,579	333,519	454,980	12.62	36,052
2009	3,502,907.95	1,769,071	1,522,318	2,225,794	12.63	176,231
2010	4,036,819.76	1,947,659	1,675,996	2,643,401	12.64	209,130
2011	4,898,807.90	2,242,724	1,929,905	3,311,820	12.65	261,804
2012	27,701,267.38	11,931,725	10,267,465	19,372,891	12.66	1,530,244
2013	1,539,423.56	617,595	531,452	1,115,732	12.67	88,061
2014	2,368,433.04	872,685	750,961	1,783,262	12.68	140,636
2015	170,159,143.70	56,569,237	48,678,852	133,391,431	12.69	10,511,539
2016	5,051,217.83	1,477,997	1,271,843	4,132,960	12.70	325,430
2017	4,583,213.70	1,135,579	977,186	3,926,852	12.71	308,958
2018	6,739,394.47	1,331,323	1,145,628	6,065,525	12.72	476,849
2019	3,599,726.96	507,424	436,648	3,415,060	12.72	268,480
2020	13,168,608.52	1,223,048	1,052,455	13,037,956	12.73	1,024,191
2021	26,275,794.76			28,115,100	12.74	2,206,837
	395,051,597.04	164,769,728	141,787,333	280,917,876		22,258,521

KENTUCKY UTILITIES COMPANY

ACCOUNT 312 BOILER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1977	55,111,739.93	44,662,367	35,604,049	23,365,513	11.92	1,960,194
1978	377,219.80	304,071	242,400	161,225	11.96	13,480
1979	123,576.21	99,059	78,968	53,258	12.00	4,438
1980	41,212.00	32,851	26,188	17,909	12.03	1,489
1981	6,247.62	4,949	3,945	2,740	12.07	227
1982	74,738.43	58,848	46,913	33,058	12.10	2,732
1986	607,710.26	465,241	370,882	279,368	12.22	22,862
1987	313,160.05	237,914	189,661	145,420	12.24	11,881
1988	392,311.48	295,541	235,600	184,173	12.27	15,010
1989	77,213.46	57,670	45,974	36,645	12.29	2,982
1990	3,070.38	2,272	1,811	1,474	12.32	120
1991	47,821.48	35,045	27,937	23,232	12.34	1,883
1994	552,899.78	392,150	312,615	278,988	12.40	22,499
1995	191,788.44	134,355	107,105	98,108	12.42	7,899
1996	1,256,941.95	869,079	692,814	652,113	12.44	52,421
1997	1,711,684.97	1,166,759	930,120	901,383	12.46	72,342
1998	31,028.56	20,832	16,607	16,594	12.48	1,330
1999	1,022,965.11	675,986	538,884	555,689	12.49	44,491
2001	405,378.65	258,349	205,951	227,804	12.52	18,195
2002	5,128,164.67	3,201,140	2,551,892	2,935,244	12.54	234,070
2003	280,701.76	171,437	136,667	163,684	12.55	13,043
2005	2,046,275.47	1,187,549	946,693	1,242,822	12.58	98,793
2006	387,716.51	218,576	174,245	240,612	12.59	19,111
2007	383,615.41	209,384	166,917	243,551	12.60	19,329
2010	4,712,651.64	2,273,730	1,812,577	3,229,960	12.64	255,535
2011	695,188.28	318,264	253,714	490,137	12.65	38,746
2012	30,232,796.21	13,022,127	10,381,009	21,968,083	12.66	1,735,236
2013	22,828,582.08	9,158,503	7,300,997	17,125,586	12.67	1,351,664
2014	1,719,696.55	633,648	505,133	1,334,942	12.68	105,279
2015	138,052,990.52	45,895,579	36,587,144	111,129,556	12.69	8,757,254
2016	1,123,644.04	328,781	262,098	940,201	12.70	74,032
2017	1,013,614.20	251,142	200,206	884,361	12.71	69,580
2018	2,176,908.73	430,034	342,815	1,986,477	12.72	156,170
2019	5,785,302.66	815,507	650,108	5,540,166	12.72	435,548
2020	1,250,719.78	116,162	92,602	1,245,668	12.73	97,853
2021	187,898.16			201,051	12.74	15,781
	280,355,175.23	128,004,901	102,043,243	197,936,794		15,733,499

KENTUCKY UTILITIES COMPANY

ACCOUNT 312 BOILER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
1981	123,154,155.44	92,234,556	90,346,162	41,428,785	14.55	2,847,339
1982	4,252,996.62	3,161,922	3,097,185	1,453,521	14.60	99,556
1983	173,593.68	128,095	125,472	60,273	14.64	4,117
1984	9,599,340.22	7,025,771	6,881,927	3,389,367	14.69	230,726
1985	12,879.28	9,347	9,156	4,625	14.74	314
1986	4,943.42	3,556	3,483	1,806	14.78	122
1987	452,831.08	322,803	316,194	168,335	14.82	11,359
1989	51,169.61	35,757	35,025	19,727	14.90	1,324
1990	23,955.04	16,560	16,221	9,411	14.94	630
1995	72,766.05	47,219	46,252	31,607	15.10	2,093
1996	132,208.31	84,509	82,779	58,684	15.13	3,879
1997	1,606,495.13	1,010,433	989,746	729,204	15.16	48,101
1998	205,138.02	126,865	124,268	95,230	15.18	6,273
1999	5,560,561.44	3,375,976	3,306,857	2,642,944	15.21	173,764
2000	72,326.82	43,057	42,175	35,214	15.23	2,312
2002	598,226.53	340,630	333,656	306,446	15.28	20,055
2003	783,521.34	435,130	426,221	412,147	15.30	26,938
2004	64,558,039.93	34,895,680	34,181,232	34,895,871	15.32	2,277,798
2005	3,681,635.21	1,931,739	1,892,189	2,047,161	15.34	133,452
2006	1,075,590.52	546,312	535,127	615,755	15.36	40,088
2007	169,702.01	83,142	81,440	100,141	15.38	6,511
2009	5,121,375.71	2,304,396	2,257,216	3,222,656	15.42	208,992
2010	3,698,965.69	1,581,930	1,549,542	2,408,351	15.44	155,981
2011	2,905,491.48	1,173,663	1,149,634	1,959,242	15.45	126,812
2012	5,604,957.03	2,118,608	2,075,232	3,922,072	15.47	253,528
2013	5,141,368.60	1,801,884	1,764,993	3,736,272	15.48	241,361
2014	170,332,605.14	54,487,220	53,371,658	128,884,229	15.50	8,315,112
2015	3,524,404.94	1,010,847	990,151	2,780,962	15.51	179,301
2016	2,080,629.73	520,592	509,933	1,716,340	15.53	110,518
2017	3,648,623.93	767,063	751,358	3,152,669	15.54	202,874
2018	17,474,405.41	2,894,578	2,835,315	15,862,299	15.56	1,019,428
2019	6,635,639.34	775,832	759,948	6,340,186	15.57	407,205
2020	6,890,258.33	523,158	512,447	6,860,129	15.58	440,316
	449,300,801.03	215,818,830	211,400,193	269,351,665		17,598,179

KENTUCKY UTILITIES COMPANY

ACCOUNT 312 BOILER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 4						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
1977	641,362.22	493,392	390,802	295,456	14.33	20,618
1984	119,314,150.03	87,326,193	69,168,646	58,497,495	14.69	3,982,130
1986	206,093.74	148,269	117,440	103,081	14.78	6,974
1987	108,767.49	77,535	61,413	54,968	14.82	3,709
1989	489,537.08	342,086	270,957	252,848	14.90	16,970
1990	158,137.01	109,318	86,588	82,619	14.94	5,530
1991	11,731.71	8,020	6,352	6,201	14.97	414
1992	89,938.57	60,743	48,113	48,121	15.01	3,206
1995	1,660,075.56	1,077,243	853,254	923,027	15.10	61,128
1996	697,377.79	445,769	353,081	393,113	15.13	25,982
1998	7,846.34	4,852	3,843	4,552	15.18	300
2000	41,664.33	24,803	19,646	24,935	15.23	1,637
2001	148,448.40	86,485	68,502	90,337	15.26	5,920
2002	657,720.96	374,507	296,637	407,125	15.28	26,644
2003	2,525,676.74	1,402,638	1,110,991	1,591,484	15.30	104,019
2004	52,228,294.42	28,231,059	22,361,036	33,523,239	15.32	2,188,201
2005	4,225,186.27	2,216,938	1,755,975	2,764,974	15.34	180,246
2007	709,847.79	347,777	275,464	484,073	15.38	31,474
2008	90,177.08	42,436	33,612	62,877	15.40	4,083
2009	7,927,805.46	3,567,167	2,825,454	5,657,298	15.42	366,881
2010	3,375,557.69	1,443,619	1,143,450	2,468,396	15.44	159,870
2011	6,197,280.87	2,503,369	1,982,849	4,648,242	15.45	300,857
2012	49,889,424.35	18,857,614	14,936,591	38,445,093	15.47	2,485,139
2013	9,554,562.87	3,348,567	2,652,307	7,571,076	15.48	489,088
2014	455,460,165.25	145,695,877	115,401,647	371,940,729	15.50	23,996,176
2015	1,850,141.48	530,646	420,310	1,559,341	15.51	100,538
2016	12,668,554.79	3,169,784	2,510,698	11,044,656	15.53	711,182
2017	7,451,587.22	1,566,574	1,240,840	6,732,359	15.54	433,228
2018	14,867,417.04	2,462,739	1,950,667	13,957,469	15.56	897,010
2019	13,041,331.52	1,524,778	1,207,734	12,746,491	15.57	818,657
2020	184,299,006.29	13,993,308	11,083,710	186,116,227	15.58	11,945,843
2021	13,236,731.49			14,163,303	15.60	907,904
	963,831,599.85	321,484,105	254,638,608	776,661,204		50,281,558

KENTUCKY UTILITIES COMPANY

ACCOUNT 312 BOILER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 2 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1994	55,069,075.68	39,058,304	57,033,656	1,890,255	12.40	152,440
2001	57,711.43	36,780	53,707	8,044	12.52	642
2002	372,523.50	232,539	339,558	59,042	12.54	4,708
2003	244,116.35	149,093	217,708	43,496	12.55	3,466
2004	462,456.61	275,585	402,414	92,414	12.57	7,352
2006	13,392.41	7,550	11,025	3,305	12.59	263
2012	8,769,190.61	3,777,140	5,515,449	3,867,584	12.66	305,496
2013	296,887.37	119,107	173,922	143,747	12.67	11,345
2015	580,005.15	192,822	281,562	339,043	12.69	26,717
2016	41,382.87	12,109	17,682	26,598	12.70	2,094
2017	3,688,949.48	914,008	1,334,651	2,612,525	12.71	205,549
2018	1,373,772.43	271,380	396,274	1,073,662	12.72	84,407
2019	492,136.30	69,372	101,298	425,288	12.72	33,435
	71,461,600.19	45,115,789	65,878,907	10,585,005		837,914

GHENT UNIT 3 SCRUBBER
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5
PROBABLE RETIREMENT YEAR.. 6-2037
NET SALVAGE PERCENT.. -7

2007	108,782,084.28	53,295,781	49,340,718	67,056,112	15.38	4,359,955
2011	6,680,281.86	2,698,476	2,498,223	4,649,679	15.45	300,950
2013	222,459.62	77,965	72,179	165,853	15.48	10,714
2014	566,739.77	181,293	167,839	438,572	15.50	28,295
2015	220,808.70	63,331	58,631	177,634	15.51	11,453
2016	437,112.31	109,369	101,253	366,457	15.53	23,597
2017	970,101.61	203,948	188,813	849,196	15.54	54,646
2018	1,256,923.57	208,205	192,754	1,152,154	15.56	74,046
2019	989,915.32	115,740	107,151	952,058	15.57	61,147
	120,126,427.04	56,954,108	52,727,562	75,807,715		4,924,803

GHENT UNIT 4 SCRUBBER
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5
PROBABLE RETIREMENT YEAR.. 6-2037
NET SALVAGE PERCENT.. -7

2011	18,322.69	7,401	9,342	10,263	15.45	664
2012	250,426,743.29	94,658,354	119,482,647	148,473,969	15.47	9,597,542

KENTUCKY UTILITIES COMPANY

ACCOUNT 312 BOILER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 4 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 65-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
2013	864,850.18	303,102	382,591	542,799	15.48	35,065
2014	435,480.04	139,304	175,837	290,127	15.50	18,718
2015	75,576.01	21,676	27,361	53,506	15.51	3,450
2016	20,209.56	5,057	6,383	15,241	15.53	981
2017	1,030,574.38	216,661	273,481	829,234	15.54	53,361
2018	910,590.24	150,836	190,393	783,939	15.56	50,382
2019	1,347,431.48	157,540	198,855	1,242,897	15.57	79,826
2020	293,907.04	22,316	28,168	286,312	15.58	18,377
	255,423,684.91	95,682,247	120,775,057	152,528,286		9,858,366
	4,304,424,346.77	1,686,580,120	1,507,309,504	3,119,379,290		228,442,609
	COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 13.7					5.31

KENTUCKY UTILITIES COMPANY

ACCOUNT 312.1 BOILER PLANT EQUIPMENT - ASH PONDS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY UNIT 2 - BOTTOM ASH INTERIM SURVIVOR CURVE.. IOWA 100-S4 PROBABLE RETIREMENT YEAR.. 9-2024 NET SALVAGE PERCENT.. 0						
1990	4,473,565.59	4,049,069	4,148,427	325,139	3.25	100,043
	4,473,565.59	4,049,069	4,148,427	325,139		100,043
TRIMBLE COUNTY UNIT 2 - GYPSUM ASH INTERIM SURVIVOR CURVE.. IOWA 100-S4 PROBABLE RETIREMENT YEAR.. 9-2023 NET SALVAGE PERCENT.. 0						
2011	4,610,665.23	3,763,824	4,381,606	229,059	2.25	101,804
	4,610,665.23	3,763,824	4,381,606	229,059		101,804
BROWN UNIT 1 INTERIM SURVIVOR CURVE.. IOWA 100-S4 PROBABLE RETIREMENT YEAR.. 10-2020 NET SALVAGE PERCENT.. 0						
1991	5,588,705.11	5,588,705	5,588,705			
1993	3,710,409.89	3,710,410	3,710,410			
2012	3,909,061.67	3,909,062	3,909,062			
	13,208,176.67	13,208,177	13,208,177			
GHENT UNIT 1 INTERIM SURVIVOR CURVE.. IOWA 100-S4 PROBABLE RETIREMENT YEAR.. 12-2021 NET SALVAGE PERCENT.. 0						
1974	1,777,792.39	1,759,072	1,777,099	694	0.50	694
1987	322,828.55	318,151	321,411	1,417	0.50	1,417
	2,100,620.94	2,077,223	2,098,510	2,111		2,111

KENTUCKY UTILITIES COMPANY

ACCOUNT 312.1 BOILER PLANT EQUIPMENT - ASH PONDS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 4						
INTERIM SURVIVOR CURVE.. IOWA 100-S4						
PROBABLE RETIREMENT YEAR.. 9-2024						
NET SALVAGE PERCENT.. 0						
1994	16,312,022.56	14,559,459	14,747,177	1,564,846	3.25	481,491
1995	232,346.12	206,530	209,193	23,153	3.25	7,124
2004	16,148,295.19	13,556,655	13,731,443	2,416,852	3.25	743,647
	32,692,663.87	28,322,644	28,687,813	4,004,851		1,232,262
GHENT UNIT 2 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 100-S4						
PROBABLE RETIREMENT YEAR.. 12-2021						
NET SALVAGE PERCENT.. 0						
1994	1,901,133.18	1,866,571	1,901,133			
	1,901,133.18	1,866,571	1,901,133			
	58,986,825.48	53,287,508	54,425,666	4,561,160		1,436,220
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						3.2 2.43

KENTUCKY UTILITIES COMPANY

ACCOUNT 314 TURBOGENERATOR UNITS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 60-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2066						
NET SALVAGE PERCENT.. -13						
1990	10,121,051.97	4,938,062	5,790,497	5,646,292	31.98	176,557
2008	9,944,506.80	2,534,684	2,972,235	8,265,058	37.63	219,640
2011	59,910,598.78	12,328,661	14,456,900	53,242,076	38.31	1,389,770
2012	35,586.01	6,699	7,855	32,357	38.52	840
2014	2,517,899.83	381,602	447,476	2,397,751	38.93	61,591
2015	577,516.97	76,438	89,633	562,961	39.12	14,391
2016	2,347,701.21	263,778	309,313	2,343,590	39.31	59,618
2017	1,261,959.50	115,493	135,430	1,290,584	39.49	32,681
2018	3,471,909.94	243,124	285,093	3,638,165	39.66	91,734
2019	952,280.88	45,292	53,111	1,022,967	39.83	25,683
2020	131,951.02	3,996	4,686	144,419	39.95	3,615
2021	5,489,998.26			6,203,698	40.15	154,513
	96,762,961.17	20,937,829	24,552,229	84,789,917		2,230,633

BROWN UNIT 1
INTERIM SURVIVOR CURVE.. IOWA 60-R1.5
PROBABLE RETIREMENT YEAR.. 2-2019
NET SALVAGE PERCENT.. -4

2010	0.03		0
2012	120,967.54	125,806	125,806
2013	11,912.34	12,389	12,389
2015	117,250.33	121,940	121,940
	250,130.24	260,135	260,135

BROWN UNIT 2
INTERIM SURVIVOR CURVE.. IOWA 60-R1.5
PROBABLE RETIREMENT YEAR.. 2-2019
NET SALVAGE PERCENT.. -4

2015	209,068.23	217,431	217,431
2017	25,702.27	26,730	26,730
2018	159,011.65	165,372	165,372
	393,782.15	409,533	409,533

KENTUCKY UTILITIES COMPANY

ACCOUNT 314 TURBOGENERATOR UNITS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 60-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2028						
NET SALVAGE PERCENT.. -4						
1971	5,859,340.38	5,265,030	2,704,730	3,388,984	6.53	518,987
1973	2,356.20	2,107	1,082	1,368	6.57	208
1984	13,386.20	11,548	5,932	7,989	6.72	1,189
1993	6,418.39	5,274	2,709	3,966	6.80	583
1994	190,384.88	155,276	79,768	118,233	6.81	17,362
1995	382,925.89	309,988	159,246	238,997	6.81	35,095
1997	9,219,618.91	7,333,307	3,767,237	5,821,167	6.83	852,294
1998	295,862.89	233,148	119,772	187,926	6.83	27,515
1999	68,377.52	53,308	27,385	43,727	6.84	6,393
2003	60,787.81	45,005	23,120	40,100	6.86	5,845
2005	4,189,950.76	2,997,427	1,539,826	2,817,723	6.87	410,149
2006	560,183.33	392,992	201,886	380,704	6.87	55,415
2008	778,583.11	520,776	267,531	542,195	6.88	78,807
2009	808,305.73	525,458	269,936	570,702	6.88	82,951
2011	405,983.90	245,806	126,274	295,949	6.89	42,953
2012	16,577,057.36	9,595,172	4,929,193	12,310,947	6.90	1,784,195
2013	60,415.97	33,158	17,034	45,799	6.90	6,638
2014	1,311,106.72	675,299	346,912	1,016,639	6.90	147,339
2015	1,343,417.01	638,164	327,835	1,069,319	6.91	154,749
2016	75,474.58	32,372	16,630	61,864	6.91	8,953
2017	1,334,029.34	499,724	256,716	1,130,674	6.91	163,629
2018	1,579,934.94	489,259	251,340	1,391,792	6.91	201,417
2019	6,048,941.41	1,382,991	710,465	5,580,434	6.92	806,421
2020	111,678.74	17,408	8,943	107,203	6.92	15,492
	51,284,521.97	31,459,997	16,161,503	37,174,400		5,424,579

GHENT UNIT 1
INTERIM SURVIVOR CURVE.. IOWA 60-R1.5
PROBABLE RETIREMENT YEAR.. 6-2034
NET SALVAGE PERCENT.. -7

1974	12,837,128.41	10,556,868	11,150,750	2,584,978	11.50	224,781
1975	38,048.53	31,145	32,897	7,815	11.55	677
1976	152.66	124	131	32	11.61	3
1979	21,568.93	17,284	18,256	4,822	11.76	410
1980	3,107.29	2,476	2,615	710	11.80	60
1985	154,643.38	119,220	125,927	39,542	12.01	3,292
1989	249,993.57	186,544	197,038	70,455	12.15	5,799
1992	57,626.89	41,758	44,107	17,554	12.24	1,434

KENTUCKY UTILITIES COMPANY

ACCOUNT 314 TURBOGENERATOR UNITS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 1						
INTERIM SURVIVOR CURVE.. IOWA 60-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1994	1,786,167.32	1,265,214	1,336,389	574,810	12.30	46,733
1995	13,081.18	9,153	9,668	4,329	12.32	351
1996	32,353.52	22,346	23,603	11,015	12.34	893
2001	421,015.90	267,977	283,052	167,435	12.45	13,449
2002	161,351.30	100,618	106,278	66,368	12.47	5,322
2003	1,082,438.74	660,064	697,196	461,013	12.49	36,911
2004	1,376,267.82	819,623	865,731	606,875	12.50	48,550
2006	1,492,645.83	839,931	887,182	709,949	12.54	56,615
2008	11,511,582.00	6,053,999	6,394,570	5,922,823	12.56	471,562
2009	424,581.66	214,272	226,326	227,976	12.58	18,122
2011	3,058,618.13	1,397,714	1,476,343	1,796,378	12.61	142,457
2012	58,555.06	25,198	26,616	36,038	12.62	2,856
2013	353,646.79	141,689	149,660	228,742	12.63	18,111
2014	23,283.22	8,580	9,063	15,850	12.64	1,254
2015	2,418,353.54	803,798	849,016	1,738,622	12.65	137,440
2016	700,761.08	204,767	216,286	533,528	12.67	42,110
2017	963,000.74	238,076	251,469	778,942	12.68	61,431
2018	1,421,311.95	280,512	296,292	1,224,511	12.69	96,494
2019	1,926,850.53	269,530	284,693	1,777,038	12.70	139,924
2020	293,455.51	27,107	28,632	285,365	12.70	22,470
2021	13,329,245.66			14,262,293	12.72	1,121,249
	56,210,837.14	24,605,587	25,989,786	34,155,810		2,720,760

GHENT UNIT 2
INTERIM SURVIVOR CURVE.. IOWA 60-R1.5
PROBABLE RETIREMENT YEAR.. 6-2034
NET SALVAGE PERCENT.. -7

1977	16,584,481.83	13,436,459	13,248,122	4,497,273	11.66	385,701
1978	4,222,224.40	3,402,611	3,354,917	1,162,863	11.71	99,305
1979	19,682.76	15,773	15,552	5,509	11.76	468
1980	2,220.56	1,769	1,744	632	11.80	54
1981	882.55	699	689	255	11.85	22
1985	126,441.41	97,478	96,112	39,181	12.01	3,262
1993	11,320.96	8,114	8,000	4,113	12.27	335
1996	1,955,272.61	1,350,477	1,331,548	760,594	12.34	61,636
1997	29,618.18	20,165	19,882	11,809	12.37	955
1998	63,595.95	42,653	42,055	25,993	12.39	2,098
1999	673,312.69	444,413	438,184	282,261	12.41	22,745

KENTUCKY UTILITIES COMPANY

ACCOUNT 314 TURBOGENERATOR UNITS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 60-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
2002	137,011.53	85,440	84,242	62,360	12.47	5,001
2003	0.10		0			
2004	818,069.16	487,193	480,364	394,970	12.50	31,598
2005	455,729.33	264,164	260,461	227,169	12.52	18,144
2006	171,887.64	96,723	95,367	88,553	12.54	7,062
2009	2,172,606.46	1,096,440	1,081,071	1,243,618	12.58	98,857
2011	239,978.53	109,664	108,127	148,650	12.61	11,788
2012	265,789.11	114,378	112,775	171,620	12.62	13,599
2013	1,335,382.88	535,022	527,523	901,337	12.63	71,365
2014	115,184.46	42,446	41,851	81,396	12.64	6,440
2015	248,188.17	82,491	81,335	184,227	12.65	14,563
2016	347,543.79	101,554	100,131	271,741	12.67	21,448
2017	873,022.01	215,832	212,807	721,327	12.68	56,887
2018	672,864.57	132,798	130,937	589,029	12.69	46,417
2019	3,153,851.95	441,164	434,980	2,939,641	12.70	231,468
2020	2,229,761.14	205,970	203,083	2,182,761	12.70	171,871
	36,925,924.73	22,831,890	22,511,859	16,998,880		1,383,089

GHENT UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 60-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
1981	19,620,904.33	14,705,715	13,648,770	7,345,597	14.21	516,932
1982	454,638.62	338,155	313,851	172,613	14.28	12,088
1984	6,852,666.59	5,016,869	4,656,291	2,676,062	14.40	185,838
1985	149,866.35	108,783	100,964	59,393	14.46	4,107
1987	42,479.48	30,281	28,105	17,348	14.57	1,191
1995	1,247,748.39	809,078	750,927	584,164	14.94	39,101
1996	2,209.44	1,411	1,310	1,055	14.98	70
1999	58,882.39	35,710	33,143	29,861	15.08	1,980
2003	284,757.34	157,945	146,593	158,097	15.20	10,401
2004	319,400.65	172,492	160,094	181,664	15.22	11,936
2005	249,727.10	130,878	121,471	145,737	15.25	9,557
2007	379,992.19	185,914	172,552	234,040	15.30	15,297
2009	903,710.75	406,166	376,974	589,997	15.34	38,461
2011	576,717.87	232,846	216,111	400,977	15.38	26,071
2012	1,299,911.95	491,282	455,972	934,934	15.40	60,710
2013	524,964.11	183,640	170,441	391,270	15.42	25,374

KENTUCKY UTILITIES COMPANY

ACCOUNT 314 TURBOGENERATOR UNITS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 60-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
2016	448,428.60	111,932	103,887	375,931	15.48	24,285
2017	514,817.42	108,287	100,504	450,351	15.49	29,074
2018	11,674,707.70	1,933,377	1,794,419	10,697,518	15.51	689,717
2019	4,853,525.31	566,119	525,430	4,667,842	15.53	300,569
2020	763,371.14	58,099	53,923	762,884	15.54	49,092
	51,223,427.72	25,784,979	23,931,734	30,877,334		2,051,851
GHENT UNIT 4						
INTERIM SURVIVOR CURVE.. IOWA 60-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
1984	40,800,152.07	29,869,983	30,368,278	13,287,885	14.40	922,770
1985	236,534.50	171,692	174,556	78,536	14.46	5,431
1986	51,346.65	36,937	37,553	17,388	14.52	1,198
1987	65,118.49	46,419	47,193	22,483	14.57	1,543
1989	118,763.95	82,955	84,339	42,739	14.68	2,911
1991	21,466.88	14,669	14,914	8,056	14.77	545
1993	193,903.00	129,264	131,420	76,056	14.86	5,118
1994	320,770.84	211,011	214,531	128,694	14.90	8,637
1996	33,822.65	21,601	21,961	14,229	14.98	950
2000	675.32	402	409	314	15.11	21
2003	3,698,827.95	2,051,616	2,085,841	1,871,905	15.20	123,152
2004	105,935.94	57,211	58,165	55,186	15.22	3,626
2005	674,421.46	353,455	359,351	362,280	15.25	23,756
2006	1,052,335.20	533,915	542,822	583,177	15.27	38,191
2007	390,678.69	191,142	194,331	223,696	15.30	14,621
2008	399,309.12	187,670	190,801	236,460	15.32	15,435
2009	1,460,869.34	656,577	667,530	895,600	15.34	58,383
2011	9,948.80	4,017	4,084	6,561	15.38	427
2012	3,948,340.06	1,492,215	1,517,108	2,707,616	15.40	175,819
2013	765,793.74	267,886	272,355	547,044	15.42	35,476
2014	2,163,026.93	690,860	702,385	1,612,054	15.44	104,408
2015	25,415.59	7,279	7,400	19,794	15.46	1,280
2016	12,546.73	3,132	3,184	10,241	15.48	662
2017	2,043,632.43	429,859	437,030	1,749,657	15.49	112,954
2018	54,014.68	8,945	9,094	48,701	15.51	3,140

KENTUCKY UTILITIES COMPANY

ACCOUNT 314 TURBOGENERATOR UNITS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 4						
INTERIM SURVIVOR CURVE.. IOWA 60-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
2019	251,717.63	29,361	29,851	239,487	15.53	15,421
2020	19,633,563.22	1,494,293	1,519,221	19,488,692	15.54	1,254,099
2021	4,879,689.01			5,221,267	15.56	335,557
	83,412,620.87	39,044,366	39,695,709	49,555,795		3,265,531
	376,464,205.99	165,334,316	153,512,488	253,552,136		17,076,443
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					14.8	4.54

KENTUCKY UTILITIES COMPANY

ACCOUNT 315 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2066						
NET SALVAGE PERCENT.. -13						
1990	9,212,360.93	4,730,289	4,789,003	5,620,965	36.61	153,536
2008	28,344.56	7,422	7,514	24,515	43.00	570
2011	33,331,379.03	7,034,214	7,121,525	30,542,933	43.50	702,136
2012	1,088,194.59	210,051	212,658	1,017,002	43.64	23,304
2013	159,449.60	27,778	28,123	152,055	43.78	3,473
2014	447,854.18	69,514	70,377	435,698	43.90	9,925
2015	228,635.93	30,951	31,335	227,023	44.01	5,158
2016	190,160.29	21,838	22,109	192,772	44.11	4,370
2017	87,287.23	8,186	8,288	90,347	44.20	2,044
2018	898,153.53	64,396	65,195	949,718	44.28	21,448
2019	527,435.56	25,712	26,031	569,971	44.36	12,849
2020	537,714.30	16,637	16,844	590,774	44.41	13,303
	46,736,969.73	12,246,988	12,399,002	40,413,774		952,116

TRIMBLE COUNTY UNIT 2 SCRUBBER
INTERIM SURVIVOR CURVE.. IOWA 70-R4
PROBABLE RETIREMENT YEAR.. 6-2066
NET SALVAGE PERCENT.. -13

1990	1,415,469.10	726,804	868,714	730,766	36.61	19,961
	1,415,469.10	726,804	868,714	730,766		19,961

BROWN UNIT 1
INTERIM SURVIVOR CURVE.. IOWA 70-R4
PROBABLE RETIREMENT YEAR.. 2-2019
NET SALVAGE PERCENT.. -4

1956	548,567.77	570,510	570,510			
1965	41,034.70	42,676	42,676			
1989	1,850.00	1,924	1,924			
1995	936,565.99	974,029	974,029			
2006	697,006.12	724,886	724,886			
2009	166,049.72	172,692	172,692			
2010	19,084.61	19,848	19,848			
2011	335.11	349	349			
2014	79,740.42	82,930	82,930			
2015	435,894.09	453,330	453,330			

KENTUCKY UTILITIES COMPANY

ACCOUNT 315 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN UNIT 1						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 2-2019						
NET SALVAGE PERCENT.. -4						
2016	48,892.14	50,848	50,848			
2017	66,485.66	69,145	69,145			
2019	210,960.56	219,399	219,399			
	3,252,466.89	3,382,566	3,382,566			
BROWN UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 2-2019						
NET SALVAGE PERCENT.. -4						
1963	150,083.40	156,087	156,087			
1994	185,597.00	193,021	193,021			
1995	12,605.00	13,109	13,109			
1997	36,014.00	37,455	37,455			
1998	10,424.35	10,841	10,841			
2010	105,240.55	109,450	109,450			
2012	41,535.50	43,197	43,197			
2014	20,568.37	21,391	21,391			
2016	11,513.95	11,975	11,974			
	573,582.12	596,526	596,525			
BROWN UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2028						
NET SALVAGE PERCENT.. -4						
1972	4,153,809.29	3,784,848	3,190,227	1,129,734	6.73	167,865
1973	69,444.66	63,109	53,194	19,028	6.75	2,819
1974	17,025.00	15,428	13,004	4,702	6.77	695
1984	4,045.00	3,539	2,983	1,224	6.91	177
1985	798.00	695	586	244	6.91	35
1988	8,408.74	7,217	6,083	2,662	6.94	384
1989	8,164.40	6,971	5,876	2,615	6.94	377
1990	9,591.76	8,141	6,862	3,113	6.95	448
1991	5,344.58	4,509	3,801	1,758	6.95	253
1997	778,846.00	627,150	528,621	281,379	6.98	40,312
2003	45,349.90	33,961	28,626	18,538	6.99	2,652
2004	18,213.04	13,418	11,310	7,632	6.99	1,092

KENTUCKY UTILITIES COMPANY

ACCOUNT 315 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2028						
NET SALVAGE PERCENT.. -4						
2005	6,057.20	4,383	3,694	2,605	6.99	373
2007	1,652,556.67	1,146,311	966,219	752,440	6.99	107,645
2010	208,220.77	132,288	111,505	105,045	7.00	15,006
2011	163,301.43	99,860	84,171	85,662	7.00	12,237
2012	1,510,611.21	883,283	744,514	826,521	7.00	118,074
2013	14,410.13	7,993	6,737	8,249	7.00	1,178
2014	100,296.43	52,154	43,960	60,348	7.00	8,621
2015	131,881.19	63,303	53,358	83,799	7.00	11,971
2016	6,475,762.92	2,806,186	2,365,318	4,369,475	7.00	624,211
2018	542,989.25	169,413	142,797	421,912	7.00	60,273
2019	103,868.80	24,005	20,234	87,790	7.00	12,541
2020	329,421.53	51,911	43,755	298,843	7.00	42,692
2021	391,782.63			407,454	7.00	58,208
	16,750,200.53	10,010,076	8,437,437	8,982,772		1,290,139
BROWN UNITS 1, 2 AND 3 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2028						
NET SALVAGE PERCENT.. -4						
2013	29,170,942.24	16,180,048	12,745,998	17,591,782	7.00	2,513,112
2017	15,559.37	5,884	4,635	11,547	7.00	1,650
	29,186,501.61	16,185,932	12,750,633	17,603,329		2,514,762
GHENT UNIT 1 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1997	2,978,785.13	2,070,630	2,508,507	678,793	12.90	52,620
2011	5,833.85	2,716	3,290	2,952	12.98	227
2012	9,121,453.85	3,991,919	4,836,092	4,923,864	12.99	379,050
2016	117,306.68	34,885	42,262	83,256	12.99	6,409
	12,223,379.51	6,100,150	7,390,151	5,688,865		438,306

KENTUCKY UTILITIES COMPANY

ACCOUNT 315 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 1						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1974	6,213,290.69	5,251,829	5,789,051	859,170	12.09	71,065
1978	851,482.92	704,316	776,362	134,725	12.33	10,927
1994	911,155.00	659,612	727,085	247,851	12.85	19,288
1995	70.00	50	55	20	12.87	2
1996	15,852.00	11,181	12,325	4,637	12.88	360
2000	14,398.00	9,526	10,500	4,905	12.93	379
2004	33,927.95	20,583	22,688	13,614	12.96	1,050
2005	160,601.93	94,889	104,595	67,249	12.96	5,189
2007	53,989.17	29,977	33,043	24,725	12.97	1,906
2009	84,877.13	43,609	48,070	42,749	12.98	3,293
2011	268,831.65	125,174	137,978	149,672	12.98	11,531
2012	178,069.98	77,931	85,903	104,632	12.99	8,055
2013	43,107.20	17,580	19,378	26,746	12.99	2,059
2014	33,762.45	12,651	13,945	22,181	12.99	1,708
2015	2,862,860.98	967,868	1,066,873	1,996,388	12.99	153,687
2016	127,767.94	37,996	41,883	94,829	12.99	7,300
2017	123,589.14	31,133	34,318	97,923	12.99	7,538
2018	297,909.87	59,606	65,703	253,060	13.00	19,466
2019	1,443,568.62	205,944	227,010	1,317,608	13.00	101,354
2020	66,418.08	6,234	6,872	64,196	13.00	4,938
	13,785,530.70	8,367,689	9,223,639	5,526,879		431,095

GHENT UNIT 2
INTERIM SURVIVOR CURVE.. IOWA 70-R4
PROBABLE RETIREMENT YEAR.. 6-2034
NET SALVAGE PERCENT.. -7

1977	9,212,904.67	7,663,164	8,056,777	1,801,031	12.28	146,664
1984	2,100,053.81	1,670,418	1,756,218	490,840	12.60	38,956
1989	42,801.92	32,673	34,351	11,447	12.75	898
1996	44,978.99	31,724	33,353	14,774	12.88	1,147
1997	152,868.92	106,263	111,721	51,849	12.90	4,019
2007	95,312.10	52,922	55,640	46,344	12.97	3,573
2009	292,925.23	150,503	158,233	155,197	12.98	11,957
2010	60,449.95	29,656	31,179	33,502	12.98	2,581
2011	1,111,858.00	517,705	544,297	645,392	12.98	49,722
2012	34,908.72	15,277	16,062	21,291	12.99	1,639
2013	66,340.84	27,054	28,444	42,541	12.99	3,275
2014	81,708.97	30,616	32,189	55,240	12.99	4,253

KENTUCKY UTILITIES COMPANY

ACCOUNT 315 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
2015	2,455,549.75	830,165	872,806	1,754,632	12.99	135,076
2018	230,069.90	46,032	48,396	197,778	13.00	15,214
2020	6,237,300.64	585,436	615,507	6,058,405	13.00	466,031
	22,220,032.41	11,789,608	12,395,173	11,380,262		885,005

GHENT UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
1976	639,635.42	511,576	579,385	105,025	14.73	7,130
1981	25,017,471.61	19,309,062	21,868,445	4,900,250	15.14	323,662
1982	687,842.97	526,713	596,528	139,464	15.21	9,169
1984	95,821.00	72,163	81,728	20,800	15.33	1,357
1987	68,793.51	50,387	57,066	16,543	15.49	1,068
1988	18,279.36	13,253	15,010	4,549	15.54	293
2000	4,283,840.81	2,608,039	2,953,730	1,629,980	15.87	102,708
2007	51,757.15	25,868	29,297	26,083	15.95	1,635
2012	72,766.46	28,032	31,748	46,113	15.98	2,886
2013	10,609.78	3,784	4,286	7,067	15.98	442
2014	2,410,294.66	785,594	889,723	1,689,292	15.98	105,713
2015	32,239.52	9,417	10,665	23,831	15.98	1,491
2016	18,243.03	4,650	5,266	14,254	15.99	891
2018	47,536.92	8,036	9,101	41,763	15.99	2,612
2019	53,927.83	6,415	7,265	50,437	15.99	3,154
	33,509,060.03	23,962,989	27,139,242	8,715,452		564,211

GHENT UNIT 4						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
1984	21,461,704.38	16,162,769	14,829,375	8,134,649	15.33	530,636
1985	48,262.01	36,023	33,051	18,589	15.39	1,208
1988	20,556.14	14,904	13,674	8,321	15.54	535
1991	5,681.42	3,984	3,655	2,424	15.66	155
1993	155,164.60	106,097	97,344	68,682	15.72	4,369
1994	24,273.53	16,370	15,020	10,953	15.75	695

KENTUCKY UTILITIES COMPANY

ACCOUNT 315 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 4						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
2000	2,475,835.52	1,507,310	1,382,960	1,266,184	15.87	79,785
2003	42,693.95	24,230	22,231	23,451	15.91	1,474
2011	27,698.95	11,405	10,464	19,174	15.97	1,201
2013	13,231.74	4,719	4,330	9,828	15.98	615
2014	22,677,864.46	7,391,458	6,781,678	17,483,637	15.98	1,094,095
2015	212,916.70	62,191	57,060	170,760	15.98	10,686
2016	230,236.65	58,684	53,843	192,511	15.99	12,039
2017	4,327,189.48	926,482	850,049	3,780,044	15.99	236,401
2018	97,319.10	16,451	15,094	89,038	15.99	5,568
2019	800,901.16	95,269	87,410	769,555	15.99	48,127
2020	300,347.36	23,303	21,381	299,991	15.99	18,761
2021	450,340.95			481,865	15.99	30,135
	53,372,218.10	26,461,649	24,278,619	32,829,654		2,076,485
GHENT UNIT 2 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
2011	5,833.85	2,716	2,806	3,436	12.98	265
2012	890,617.40	389,770	402,683	550,277	12.99	42,362
2013	54,747.62	22,327	23,067	35,513	12.99	2,734
	951,198.87	414,813	428,556	589,227		45,361
GHENT UNIT 3 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
2007	11,277,366.96	5,636,274	5,688,426	6,378,357	15.95	399,897
2011	764,631.32	314,843	317,756	500,399	15.97	31,334
	12,041,998.28	5,951,117	6,006,182	6,878,756		431,231

KENTUCKY UTILITIES COMPANY

ACCOUNT 315 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 4 SCRUBBER						
INTERIM SURVIVOR CURVE.. IOWA 70-R4						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
2011	5,833.83	2,402	2,342	3,900	15.97	244
2012	15,142,207.72	5,833,264	5,688,358	10,513,805	15.98	657,935
	15,148,041.55	5,835,666	5,690,700	10,517,704		658,179
	261,166,649.43	132,032,573	130,987,139	149,857,440		10,306,851
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						14.5 3.95

KENTUCKY UTILITIES COMPANY

ACCOUNT 316 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2066						
NET SALVAGE PERCENT.. -13						
2000	41,467.41	14,857	14,130	32,728	38.06	860
2002	26,900.64	8,968	8,529	21,869	38.45	569
2011	4,518,875.83	915,616	870,807	4,235,523	39.91	106,127
2012	124,070.29	23,025	21,898	118,301	40.05	2,954
2013	838,229.79	140,849	133,956	813,244	40.19	20,235
2014	593,898.10	88,942	84,589	586,516	40.32	14,547
2015	59,530.04	7,780	7,399	59,870	40.45	1,480
2016	125,813.18	13,995	13,310	128,859	40.57	3,176
2017	689,012.44	62,474	59,417	719,167	40.69	17,674
2018	433,287.83	30,067	28,596	461,020	40.81	11,297
2019	180,678.43	8,510	8,094	196,073	40.93	4,790
2020	144,259.40	4,333	4,121	158,892	41.01	3,874
2021	422,539.92			477,470	41.14	11,606
	8,198,563.30	1,319,416	1,254,845	8,009,532		199,189

SYSTEM LABORATORY
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5
PROBABLE RETIREMENT YEAR.. 6-2040
NET SALVAGE PERCENT.. -1

1983	229.68	151	139	93	17.36	5
1984	10,283.72	6,721	6,201	4,186	17.41	240
1986	48,397.00	31,020	28,619	20,262	17.51	1,157
1987	100,806.00	63,943	58,994	42,820	17.56	2,438
1989	3,576.00	2,219	2,047	1,565	17.64	89
1990	22,201.79	13,609	12,556	9,868	17.69	558
1991	72,843.39	44,086	40,674	32,898	17.73	1,855
1994	4,476.87	2,598	2,397	2,125	17.84	119
1995	3,198.74	1,827	1,686	1,545	17.87	86
1996	5,552.69	3,119	2,878	2,731	17.91	152
1997	47,150.16	26,020	24,006	23,616	17.94	1,316
1998	67,015.37	36,289	33,480	34,205	17.97	1,903
1999	62,975.53	33,413	30,827	32,779	18.00	1,821
2000	730.00	379	350	388	18.03	22
2002	276,203.04	136,609	126,035	152,930	18.08	8,459
2003	632,334.03	304,282	280,730	357,927	18.11	19,764
2004	199,225.39	93,095	85,889	115,328	18.13	6,361
2005	131,911.92	59,646	55,029	78,202	18.16	4,306
2006	31,404.52	13,710	12,649	19,070	18.18	1,049

KENTUCKY UTILITIES COMPANY

ACCOUNT 316 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SYSTEM LABORATORY						
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2040						
NET SALVAGE PERCENT.. -1						
2007	89,149.53	37,433	34,536	55,505	18.20	3,050
2009	212,514.89	81,402	75,101	139,539	18.25	7,646
2010	90,044.40	32,686	30,156	60,789	18.27	3,327
2011	245,283.88	83,745	77,263	170,474	18.29	9,321
2012	175,216.25	55,745	51,430	125,538	18.31	6,856
2013	161,221.62	47,280	43,620	119,213	18.33	6,504
2014	294,272.69	78,566	72,485	224,731	18.34	12,254
2015	38,318.47	9,120	8,414	30,288	18.36	1,650
2016	152,643.59	31,502	29,064	125,106	18.38	6,807
2017	458,721.29	78,957	72,846	390,463	18.40	21,221
2018	126,318.97	17,102	15,778	111,804	18.41	6,073
2019	46,527.57	4,392	4,052	42,941	18.43	2,330
2020	647,835.44	39,665	36,595	617,719	18.44	33,499
2021	424,001.94			428,242	18.46	23,198
	4,882,586.37	1,470,331	1,356,524	3,574,888		195,436

BROWN UNIT 1

INTERIM SURVIVOR CURVE.. IOWA 70-R1.5

PROBABLE RETIREMENT YEAR.. 2-2019

NET SALVAGE PERCENT.. -4

1954	7,308.72	7,601	7,601			
1955	921.00	958	958			
1956	15,668.07	16,295	16,295			
1988	1,387.17	1,443	1,443			
1990	18,405.00	19,141	19,141			
1992	7,705.00	8,013	8,013			
2007	497.91	518	518			
2011	8,037.82	8,359	8,359			
2018	8,630.23	8,975	8,975			
	68,560.92	71,303	71,303			

KENTUCKY UTILITIES COMPANY

ACCOUNT 316 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5						
PROBABLE RETIREMENT YEAR.. 2-2019						
NET SALVAGE PERCENT.. -4						
1963	36,651.30	38,117	38,117			
2012	20,279.74	21,091	21,091			
2018	8,630.23	8,975	8,976			
	65,561.27	68,183	68,184			
BROWN UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2028						
NET SALVAGE PERCENT.. -4						
1969	55,586.77	50,291	42,601	15,209	6.68	2,277
1970	2,634.00	2,378	2,014	725	6.69	108
1971	323,273.84	291,170	246,646	89,559	6.70	13,367
1972	14,486.08	13,016	11,026	4,040	6.71	602
1973	960.00	860	728	270	6.72	40
1974	3,179.00	2,842	2,407	899	6.73	134
1976	2,020.00	1,796	1,521	579	6.75	86
1977	39,153.91	34,711	29,403	11,317	6.75	1,677
1978	1,537.00	1,358	1,150	448	6.76	66
1980	769.95	676	573	228	6.78	34
1981	7,296.00	6,382	5,406	2,182	6.79	321
1982	1.31	1	1			
1983	52,115.16	45,241	38,323	15,877	6.80	2,335
1984	4,624.74	3,998	3,387	1,423	6.81	209
1985	8,678.68	7,472	6,329	2,696	6.81	396
1986	146,238.43	125,313	106,151	45,937	6.82	6,736
1987	209,971.72	179,097	151,710	66,660	6.82	9,774
1988	125,761.26	106,713	90,395	40,397	6.83	5,915
1989	210,175.64	177,421	150,291	68,292	6.83	9,999
1990	326,556.15	274,052	232,145	107,473	6.84	15,712
1991	378,859.70	316,098	267,762	126,252	6.84	18,458
1992	143,407.00	118,864	100,688	48,455	6.85	7,074
1993	213,117.96	175,468	148,636	73,006	6.85	10,658
1994	243,236.46	198,771	168,376	84,590	6.86	12,331
1995	378,604.30	307,037	260,087	133,662	6.86	19,484
1996	132,026.00	106,155	89,922	47,385	6.87	6,897
1997	113,295.86	90,295	76,488	41,340	6.87	6,017
1998	16,759.09	13,231	11,208	6,222	6.87	906
1999	78,147.46	61,036	51,703	29,571	6.88	4,298

KENTUCKY UTILITIES COMPANY

ACCOUNT 316 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2028						
NET SALVAGE PERCENT.. -4						
2000	12,638.00	9,761	8,268	4,875	6.88	709
2001	61,005.75	46,547	39,429	24,017	6.88	3,491
2003	183,331.37	135,974	115,182	75,483	6.89	10,955
2004	87,825.06	64,095	54,294	37,044	6.89	5,376
2005	126,190.46	90,411	76,586	54,652	6.90	7,921
2006	93,259.29	65,512	55,494	41,495	6.90	6,014
2007	109,967.17	75,550	63,997	50,369	6.90	7,300
2008	76,267.72	51,107	43,292	36,026	6.90	5,221
2009	25,225.68	16,415	13,905	12,330	6.91	1,784
2010	497,669.44	313,439	265,510	252,067	6.91	36,479
2011	184,777.66	112,079	94,940	97,228	6.91	14,071
2012	256,120.18	148,435	125,737	140,628	6.92	20,322
2013	319,773.21	175,797	148,915	183,649	6.92	26,539
2014	306,820.21	158,152	133,968	185,125	6.92	26,752
2015	417,186.02	198,575	168,210	265,663	6.92	38,391
2016	191,888.31	82,532	69,912	129,652	6.92	18,736
2017	201,975.09	75,643	64,076	145,978	6.93	21,065
2018	285,176.12	88,133	74,656	221,927	6.93	32,024
2019	385,889.45	88,480	74,950	326,375	6.93	47,096
2020	784,536.15	122,991	104,184	711,734	6.93	102,703
2021	614,995.69			639,596	6.93	92,294
	8,454,991.50	4,831,371	4,092,585	4,700,606		681,154

GHENT UNIT 1 SCRUBBER
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5
PROBABLE RETIREMENT YEAR.. 6-2034
NET SALVAGE PERCENT.. -7

1997	911,941.17	622,312	900,919	74,858	12.53	5,974
2000	2,454.00	1,595	2,309	317	12.57	25
2011	47,617.08	21,823	31,593	19,357	12.68	1,527
	962,012.25	645,730	934,821	94,532		7,526

KENTUCKY UTILITIES COMPANY

ACCOUNT 316 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 1						
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
1974	1,000,240.70	822,964	1,019,705	50,552	12.02	4,206
1976	12,253.24	9,987	12,375	736	12.08	61
1978	6,426.72	5,184	6,423	453	12.14	37
1983	4,043.88	3,166	3,923	404	12.27	33
1988	74,936.00	56,508	70,017	10,164	12.38	821
1989	2,178.22	1,628	2,017	313	12.40	25
1990	137,000.67	101,469	125,727	20,864	12.42	1,680
1994	52,592.00	37,344	46,272	10,002	12.48	801
1995	11,112.00	7,792	9,655	2,235	12.50	179
1996	153,652.05	106,357	131,783	32,625	12.51	2,608
1997	18,479.01	12,610	15,625	4,148	12.53	331
1998	2,709.00	1,821	2,256	642	12.54	51
1999	79,194.16	52,368	64,887	19,850	12.56	1,580
2000	2,880.81	1,872	2,320	763	12.57	61
2004	42,569.91	25,410	31,485	14,065	12.61	1,115
2006	30,770.07	17,355	21,504	11,420	12.64	903
2007	7,433.84	4,059	5,029	2,925	12.65	231
2013	68,502.65	27,509	34,085	39,212	12.70	3,088
2015	42,125.60	14,015	17,365	27,709	12.72	2,178
2020	184,403.86	17,103	21,192	176,120	12.75	13,813
2021	45,146.22			48,306	12.76	3,786
	1,978,650.61	1,326,521	1,643,645	473,511		37,588

GHENT UNIT 2
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5
PROBABLE RETIREMENT YEAR.. 6-2034
NET SALVAGE PERCENT.. -7

1976	97,461.37	79,437	98,019	6,264	12.08	519
1977	639,500.31	518,605	639,920	44,345	12.11	3,662
1978	591,177.00	476,887	588,443	44,116	12.14	3,634
1985	6,645.13	5,130	6,330	780	12.32	63
1989	51,128.40	38,218	47,158	7,549	12.40	609
1990	7,692.02	5,697	7,030	1,201	12.42	97
1991	6,857.97	5,032	6,209	1,129	12.43	91
1992	50,988.28	37,024	45,685	8,873	12.45	713
2006	15,073.78	8,502	10,491	5,638	12.64	446
2007	7,433.84	4,059	5,009	2,946	12.65	233
2013	17,365.58	6,974	8,605	9,976	12.70	786

KENTUCKY UTILITIES COMPANY

ACCOUNT 316 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 2						
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -7						
2014	9,654.84	3,563	4,396	5,934	12.71	467
2017	44,259.78	10,997	13,569	33,788	12.73	2,654
2020	41,598.38	3,858	4,760	39,750	12.75	3,118
	1,586,836.68	1,203,983	1,485,626	212,289		17,092

GHENT UNIT 3						
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
1981	2,065,847.73	1,547,718	1,825,060	385,397	14.79	26,058
1982	217,424.29	161,697	190,672	41,972	14.83	2,830
1983	4,043.88	2,984	3,519	808	14.87	54
1984	596,809.17	437,042	515,357	123,228	14.90	8,270
1987	14,126.58	10,077	11,883	3,233	15.00	216
1988	8,279.00	5,849	6,897	1,961	15.03	130
1993	31,841.79	21,261	25,071	9,000	15.17	593
1994	1,429.72	942	1,111	419	15.20	28
2004	70,857.65	38,335	45,204	30,613	15.40	1,988
2007	56,110.00	27,513	32,443	27,595	15.45	1,786
2013	8,682.80	3,045	3,591	5,700	15.53	367
2014	558,116.44	178,510	210,498	386,687	15.55	24,867
2016	70,989.53	17,785	20,972	54,987	15.57	3,532
2018	17,259.51	2,861	3,374	15,094	15.60	968
2020	83,211.33	6,303	7,432	81,604	15.62	5,224
	3,805,029.42	2,461,922	2,903,084	1,168,297		76,911

GHENT UNIT 4						
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
1984	1,544,418.16	1,130,973	1,058,475	594,052	14.90	39,869
1985	58,802.17	42,694	39,957	22,961	14.94	1,537
1986	61,142.00	44,011	41,190	24,232	14.97	1,619
1987	193,658.18	138,144	129,289	77,926	15.00	5,195
1988	237,326.27	167,666	156,918	97,021	15.03	6,455
1989	273,886.78	191,552	179,273	113,786	15.06	7,556

KENTUCKY UTILITIES COMPANY

ACCOUNT 316 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
GHENT UNIT 4						
INTERIM SURVIVOR CURVE.. IOWA 70-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2037						
NET SALVAGE PERCENT.. -7						
1990	240,634.03	166,509	155,835	101,643	15.09	6,736
1991	221,855.20	151,784	142,054	95,331	15.12	6,305
1992	184,249.51	124,548	116,564	80,583	15.15	5,319
1993	119,139.71	79,552	74,453	53,027	15.17	3,496
1994	89,572.74	59,009	55,226	40,616	15.20	2,672
1995	372,839.16	242,203	226,677	172,261	15.22	11,318
1996	145,959.58	93,369	87,384	68,793	15.25	4,511
1997	254,446.40	160,199	149,930	122,328	15.27	8,011
1998	16,091.52	9,960	9,322	7,896	15.29	516
1999	624,330.63	379,363	355,045	312,989	15.31	20,443
2000	69,721.20	41,539	38,876	35,725	15.33	2,330
2003	222,134.20	123,519	115,601	122,082	15.38	7,938
2004	258,361.73	139,777	130,817	145,630	15.40	9,456
2005	112,399.55	59,021	55,238	65,030	15.42	4,217
2006	15,034.08	7,644	7,154	8,932	15.43	579
2007	167,507.71	82,137	76,872	102,361	15.45	6,625
2008	38,205.62	18,006	16,852	24,028	15.46	1,554
2009	38,356.93	17,274	16,167	24,875	15.48	1,607
2010	818,567.66	350,618	328,143	547,725	15.49	35,360
2011	520,622.64	210,493	197,000	360,066	15.51	23,215
2012	693,319.39	262,519	245,691	496,161	15.52	31,969
2013	65,400.12	22,933	21,463	48,515	15.53	3,124
2014	109,137.92	34,907	32,669	84,108	15.55	5,409
2015	801,502.06	229,933	215,194	642,413	15.56	41,286
2016	380,311.91	95,279	89,171	317,762	15.57	20,409
2017	711,426.16	149,893	140,285	620,941	15.58	39,855
2018	1,049,709.06	174,016	162,861	960,327	15.60	61,559
2019	1,878,472.63	219,126	205,080	1,804,886	15.61	115,624
2020	2,060,669.73	156,086	146,081	2,058,836	15.62	131,808
2021	520,042.78			556,446	15.63	35,601
	15,169,255.12	5,576,256	5,218,807	11,012,296		711,083
	45,172,047.44	18,975,016	19,029,424	29,245,951		1,925,979
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						15.2 4.26

KENTUCKY UTILITIES COMPANY

ACCOUNT 330.1 LAND RIGHTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
DIX DAM						
INTERIM SURVIVOR CURVE.. IOWA 100-S4						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. 0						
1941	855,636.47	707,158	855,636			
	855,636.47	707,158	855,636			
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						0.0 0.00

KENTUCKY UTILITIES COMPANY

ACCOUNT 331 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
DIX DAM						
INTERIM SURVIVOR CURVE.. IOWA 85-S2.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -2						
1941	207,172.59	173,480	118,968	92,348	14.53	6,356
1967	1,469.92	1,114	764	735	17.74	41
1988	21,653.46	13,866	9,509	12,578	19.38	649
1990	54,778.00	34,220	23,467	32,406	19.47	1,664
1991	77,146.00	47,545	32,605	46,084	19.52	2,361
1992	1,037.00	630	432	626	19.56	32
2005	23,670.29	10,760	7,379	16,765	19.89	843
2007	66,025.06	27,784	19,054	48,292	19.92	2,424
2009	11,732.37	4,496	3,083	8,884	19.94	446
2010	75,260.09	27,283	18,710	58,055	19.95	2,910
2012	31,110.92	9,862	6,763	24,970	19.96	1,251
2013	6,860.35	2,001	1,372	5,625	19.97	282
2014	224,345.64	59,371	40,715	188,117	19.98	9,415
2016	2,174,143.44	443,880	304,402	1,913,224	19.98	95,757
2018	1,368,507.62	182,148	124,913	1,270,965	19.99	63,580
2019	181,701.44	16,856	11,559	173,776	19.99	8,693
2020	401.50	24	16	393	19.99	20
	4,527,015.69	1,055,320	723,713	3,893,843		196,724
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						19.8 4.35

KENTUCKY UTILITIES COMPANY

ACCOUNT 332 RESERVOIRS, DAMS AND WATERWAYS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
DIX DAM						
INTERIM SURVIVOR CURVE.. IOWA 110-S2.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -2						
1941	5,868,664.83	4,836,060	5,051,534	934,505	17.67	52,887
1944	862.00	705	736	143	17.88	8
1950	228,186.49	183,219	191,382	41,368	18.28	2,263
1971	3,719.85	2,725	2,846	948	19.35	49
1990	7,354.12	4,570	4,774	2,728	19.83	138
1991	1,200,006.00	736,178	768,979	455,027	19.84	22,935
1992	370,020.00	223,822	233,795	143,626	19.86	7,232
1993	16,470.00	9,819	10,256	6,543	19.87	329
1994	10,861.26	6,377	6,661	4,417	19.88	222
2003	136,421.67	65,963	68,902	70,248	19.96	3,519
2007	1,072,820.18	450,984	471,078	623,199	19.97	31,207
2008	842,093.55	338,575	353,660	505,275	19.98	25,289
2011	300,776.20	102,297	106,855	199,937	19.99	10,002
2012	11,493,426.01	3,639,497	3,801,657	7,921,638	19.99	396,280
2014	297,790.55	78,780	82,290	221,456	19.99	11,078
2015	34,972.15	8,235	8,602	27,070	19.99	1,354
2020	100,000.00	6,000	6,267	95,733	20.00	4,787
	21,984,444.86	10,693,806	11,170,275	11,253,859		569,579
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						19.8 2.59

KENTUCKY UTILITIES COMPANY

ACCOUNT 333 WATER WHEELS, TURBINES AND GENERATORS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
DIX DAM						
INTERIM SURVIVOR CURVE.. IOWA 75-R3						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -2						
1941	47,034.96	40,573	33,333	14,642	11.47	1,277
1957	67,525.73	53,949	44,322	24,554	15.35	1,600
1958	4,342.00	3,451	2,835	1,594	15.55	103
1992	12,412.14	7,525	6,182	6,478	19.24	337
1997	24,821.62	13,853	11,381	13,937	19.44	717
2005	1,992.81	905	744	1,289	19.67	66
2008	62,158.95	25,011	20,548	42,854	19.74	2,171
2010	4,035,403.02	1,462,866	1,201,836	2,914,275	19.77	147,409
2012	4,177,975.81	1,324,144	1,087,867	3,173,668	19.81	160,205
2013	5,285,996.18	1,542,139	1,266,963	4,124,753	19.82	208,111
2015	327,078.36	77,040	63,293	270,327	19.85	13,618
	14,046,741.58	4,551,456	3,739,305	10,588,371		535,614
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						19.8 3.81

KENTUCKY UTILITIES COMPANY

ACCOUNT 334 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
DIX DAM						
INTERIM SURVIVOR CURVE.. IOWA 40-L2.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -2						
1941	7,924.89	6,934	6,470	1,613	5.69	283
1947	10,865.00	9,273	8,653	2,430	6.53	372
1950	411.49	346	323	97	6.98	14
1952	206.57	172	160	50	7.29	7
1953	772.14	641	598	189	7.45	25
1960	1,738.80	1,390	1,297	477	8.63	55
1961	51.62	41	38	14	8.80	2
1962	3,724.00	2,945	2,748	1,050	8.97	117
1963	156.52	123	115	45	9.14	5
1974	3,361.98	2,496	2,329	1,100	10.76	102
1975	4,094.59	3,026	2,824	1,353	10.87	124
1989	5,503.19	3,801	3,547	2,067	12.16	170
2010	486,152.97	185,373	172,973	322,903	18.04	17,899
2012	401,455.77	132,800	123,916	285,568	18.48	15,453
2013	341,346.54	103,613	96,682	251,492	18.67	13,470
2014	7,365.24	2,019	1,884	5,629	18.85	299
2016	40,896.02	8,609	8,033	33,681	19.15	1,759
2017	19,285.88	3,373	3,147	16,524	19.28	857
2020	29,487.84	1,807	1,686	28,391	19.56	1,451
	1,364,801.05	468,782	437,423	954,674		52,464
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						18.2 3.84

KENTUCKY UTILITIES COMPANY

ACCOUNT 335 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
DIX DAM						
INTERIM SURVIVOR CURVE.. IOWA 45-S0						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -2						
1941	3,020.11	2,827	2,829	252	3.70	68
1947	1,160.75	1,027	1,028	156	5.97	26
1948	65.00	57	57	9	6.35	1
1949	41.43	36	36	6	6.74	1
1951	59.26	50	50	10	7.52	1
1952	2.05	2	2			
1962	18,423.86	14,113	14,121	4,671	11.15	419
1988	185,484.40	114,778	114,844	74,350	15.56	4,778
1990	1,449.67	877	878	601	15.78	38
1992	11,230.37	6,626	6,630	4,825	15.99	302
1994	22,393.40	12,846	12,853	9,988	16.20	617
1995	14,300.79	8,082	8,087	6,500	16.30	399
1996	9,512.12	5,289	5,292	4,410	16.40	269
2003	4,481.37	2,146	2,147	2,424	17.07	142
2010	10,026.50	3,648	3,650	6,577	17.73	371
2014	35,295.66	9,483	9,488	26,513	18.12	1,463
2017	12,427.44	2,172	2,173	10,503	18.43	570
	329,374.18	184,059	184,165	151,797		9,465

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 16.0 2.87

KENTUCKY UTILITIES COMPANY

ACCOUNT 336 ROADS, RAILROADS AND BRIDGES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
DIX DAM						
INTERIM SURVIVOR CURVE.. IOWA 65-R4						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -2						
1941	11,366.83	10,802	10,519	1,075	4.44	242
2009	129,383.46	49,592	48,293	83,678	19.90	4,205
2015	58,149.54	13,691	13,332	45,980	19.96	2,304
	198,899.83	74,085	72,145	130,733		6,751
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						19.4 3.39

KENTUCKY UTILITIES COMPANY

ACCOUNT 340.1 LAND RIGHTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT PIPELINE						
INTERIM SURVIVOR CURVE.. SQUARE						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. 0						
1994	167,723.31	96,352	129,465	38,259	20.00	1,913
1995	8,686.00	4,910	6,597	2,089	20.00	104
	176,409.31	101,262	136,062	40,347		2,017
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						20.0 1.14

KENTUCKY UTILITIES COMPANY

ACCOUNT 341 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
CANE RUN CC 7						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2055						
NET SALVAGE PERCENT.. -10						
2015	47,492,781.25	7,987,811	8,014,000	44,228,060	31.80	1,390,819
2016	62,902.47	9,023	9,053	60,140	31.94	1,883
2017	1,572,819.99	185,000	185,607	1,544,495	32.07	48,160
2018	1,388,667.78	125,838	126,251	1,401,284	32.19	43,532
2019	334,730.91	20,759	20,827	347,377	32.30	10,755
2020	152,097.05	5,976	5,996	161,311	32.39	4,980
	51,003,999.45	8,334,407	8,361,732	47,742,667		1,500,129
TRIMBLE COUNTY CT 5						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2042						
NET SALVAGE PERCENT.. -8						
2002	3,566,217.06	1,837,519	2,338,001	1,513,514	19.63	77,102
2004	27,551.15	13,357	16,995	12,760	19.79	645
2006	146,463.11	66,081	84,079	74,101	19.93	3,718
	3,740,231.32	1,916,957	2,439,075	1,600,375		81,465
TRIMBLE COUNTY CT 6						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2042						
NET SALVAGE PERCENT.. -8						
2002	3,564,353.91	1,836,559	2,328,392	1,521,110	19.63	77,489
2004	24,330.33	11,796	14,955	11,322	19.79	572
	3,588,684.24	1,848,355	2,343,347	1,532,432		78,061
TRIMBLE COUNTY CT 7						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	3,559,154.97	1,644,453	2,106,381	1,737,506	21.48	80,889
	3,559,154.97	1,644,453	2,106,381	1,737,506		80,889

KENTUCKY UTILITIES COMPANY

ACCOUNT 341 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY CT 8						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	3,548,851.71	1,639,693	2,100,285	1,732,475	21.48	80,655
	3,548,851.71	1,639,693	2,100,285	1,732,475		80,655
TRIMBLE COUNTY CT 9						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	3,655,976.41	1,689,188	2,156,341	1,792,114	21.48	83,432
	3,655,976.41	1,689,188	2,156,341	1,792,114		83,432
TRIMBLE COUNTY CT 10						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	3,653,029.99	1,687,827	2,101,241	1,844,032	21.48	85,849
2017	741,840.00	118,776	147,869	653,318	22.35	29,231
2018	19,553.77	2,444	3,043	18,075	22.39	807
	4,414,423.76	1,809,047	2,252,152	2,515,426		115,887
BROWN CT 5						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2001	673,822.59	358,454	407,454	306,798	18.70	16,406
2002	1,116.00	578	657	526	18.78	28
2004	19,933.20	9,733	11,063	10,066	18.92	532
2015	10,818.38	2,645	3,007	8,461	19.48	434
2016	347,324.52	73,511	83,560	284,604	19.52	14,580
	1,053,014.69	444,921	505,741	610,455		31,980

KENTUCKY UTILITIES COMPANY

ACCOUNT 341 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 6						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
1999	109,305.33	63,827	74,537	41,327	16.86	2,451
2005	37,546.34	18,718	21,859	17,940	17.22	1,042
2006	20,493.70	9,866	11,522	10,202	17.27	591
2019	48,638.79	5,140	6,002	45,555	17.70	2,574
	215,984.16	97,551	113,920	115,023		6,658
BROWN CT 7						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
1999	481,712.77	281,288	352,641	157,974	16.86	9,370
2002	4,117.50	2,242	2,811	1,554	17.06	91
2005	45,573.77	22,720	28,483	19,825	17.22	1,151
2006	2,042.62	983	1,232	933	17.27	54
2015	22,546.10	5,962	7,474	16,425	17.60	933
	555,992.76	313,195	392,642	196,710		11,599
BROWN CT 8						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
1994	143,346.95	99,872	129,583	22,365	13.14	1,702
1995	1,730,556.00	1,189,858	1,543,827	290,563	13.19	22,029
1997	120,183.00	80,282	104,165	23,229	13.28	1,749
2001	18,569.00	11,546	14,981	4,702	13.44	350
	2,012,654.95	1,381,558	1,792,555	340,859		25,830
BROWN CT 9						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -6						
1994	2,477,163.92	1,767,553	2,042,986	582,808	12.27	47,499
1995	512,980.00	361,371	417,682	126,076	12.32	10,233
1996	438,868.00	305,083	352,623	112,577	12.36	9,108

KENTUCKY UTILITIES COMPANY

ACCOUNT 341 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 9						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -6						
1997	1,190,538.00	815,889	943,027	318,944	12.40	25,721
2001	18,569.00	11,888	13,740	5,943	12.53	474
2012	6,254.64	2,700	3,121	3,509	12.78	275
2013	15,782.48	6,348	7,337	9,392	12.79	734
	4,660,156.04	3,270,832	3,780,516	1,159,249		94,044
BROWN CT 10						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
1995	1,751,485.20	1,204,248	1,395,184	461,390	13.19	34,980
1997	95,664.00	63,904	74,036	27,368	13.28	2,061
2001	18,569.00	11,546	13,377	6,306	13.44	469
	1,865,718.20	1,279,698	1,482,597	495,064		37,510
BROWN CT 11						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2036						
NET SALVAGE PERCENT.. -6						
1996	1,321,515.93	874,286	1,135,247	265,560	14.11	18,821
1997	65,678.00	42,779	55,548	14,071	14.16	994
1998	313,025.00	200,507	260,355	71,451	14.21	5,028
2001	81,269.00	49,111	63,770	22,375	14.35	1,559
2004	56,158.33	31,544	40,959	18,568	14.46	1,284
2011	36,259.52	15,333	19,910	18,525	14.66	1,264
2013	45,109.35	16,569	21,515	26,301	14.71	1,788
	1,919,015.13	1,230,129	1,597,303	436,853		30,738

KENTUCKY UTILITIES COMPANY

ACCOUNT 341 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN SOLAR						
INTERIM SURVIVOR CURVE.. IOWA 40-S3						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -3						
2016	1,443,810.04	300,310	273,579	1,213,545	19.76	61,414
	1,443,810.04	300,310	273,579	1,213,545		61,414
HAEFLING UNITS 1, 2 AND 3						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2025						
NET SALVAGE PERCENT.. -12						
1994	3,638.00	3,537	3,765	309	3.94	78
2000	287,491.35	269,712	287,123	34,867	3.96	8,805
2013	322.20	240	255	105	3.98	26
	291,451.55	273,489	291,144	35,282		8,909
PADDY'S RUN GENERATOR 13						
INTERIM SURVIVOR CURVE.. IOWA 55-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2001	1,902,531.27	1,012,093	1,284,668	732,015	18.70	39,145
2002	3,883.00	2,011	2,553	1,563	18.78	83
2013	42,179.89	12,774	16,214	28,496	19.40	1,469
2015	178,139.73	43,553	55,283	133,545	19.48	6,855
2016	8,143.22	1,724	2,188	6,444	19.52	330
2017	47,638.30	8,398	10,660	39,837	19.55	2,038
2018	16,370.00	2,259	2,867	14,485	19.58	740
	2,198,885.41	1,082,812	1,374,433	956,386		50,660

KENTUCKY UTILITIES COMPANY

ACCOUNT 341 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SIMPSONVILLE SOLAR						
INTERIM SURVIVOR CURVE.. IOWA 40-S3						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -1						
2019	800,780.88	65,334	60,840	747,949	22.76	32,862
2020	12,897.32	677	630	12,396	22.81	543
	813,678.20	66,011	61,470	760,345		33,405
	90,541,682.99	28,622,606	33,425,213	64,972,766		2,413,265
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						26.9 2.67

KENTUCKY UTILITIES COMPANY

ACCOUNT 342 FUEL HOLDERS, PRODUCERS AND ACCESSORIES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
CANE RUN CC 7						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2055						
NET SALVAGE PERCENT.. -10						
2015	6,319,398.10	1,064,389	4,046,045	2,905,293	30.64	94,820
2017	276,120.00	32,551	123,736	179,996	30.99	5,808
	6,595,518.10	1,096,940	4,169,781	3,085,289		100,628
CANE RUN PIPELINE						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2055						
NET SALVAGE PERCENT.. -10						
2015	23,410,569.22	3,943,089	4,185,382	21,566,244	30.64	703,859
	23,410,569.22	3,943,089	4,185,382	21,566,244		703,859
PADDY'S RUN CT PIPELINE						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2016	6,851,592.10	1,443,459	1,114,913	6,147,775	19.19	320,363
	6,851,592.10	1,443,459	1,114,913	6,147,775		320,363
TRIMBLE COUNTY CT 5						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2042						
NET SALVAGE PERCENT.. -8						
2002	237,747.79	121,995	155,655	101,113	18.99	5,325
2004	1,836.64	886	1,130	853	19.20	44
	239,584.43	122,881	156,785	101,966		5,369

KENTUCKY UTILITIES COMPANY

ACCOUNT 342 FUEL HOLDERS, PRODUCERS AND ACCESSORIES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY CT 6						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2042						
NET SALVAGE PERCENT.. -8						
2002	237,623.60	121,932	155,576	101,058	18.99	5,322
2004	1,621.94	783	999	753	19.20	39
	239,245.54	122,715	156,575	101,810		5,361
TRIMBLE COUNTY CT PIPELINE						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2002	4,474,853.28	2,197,203	2,820,069	2,012,773	20.50	98,184
2005	369,111.16	163,953	210,431	188,209	20.87	9,018
2006	6,150.29	2,626	3,370	3,272	20.99	156
2013	6,019.92	1,673	2,147	4,354	21.64	201
2017	785,616.17	125,352	160,887	687,579	21.92	31,368
	5,641,750.82	2,490,807	3,196,904	2,896,187		138,927
TRIMBLE COUNTY CT 7						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	578,059.38	266,078	343,187	281,117	20.76	13,541
	578,059.38	266,078	343,187	281,117		13,541
TRIMBLE COUNTY CT 8						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	576,385.74	265,308	342,193	280,304	20.76	13,502
	576,385.74	265,308	342,193	280,304		13,502

KENTUCKY UTILITIES COMPANY

ACCOUNT 342 FUEL HOLDERS, PRODUCERS AND ACCESSORIES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY CT 9						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	593,786.01	273,317	351,539	289,750	20.76	13,957
	593,786.01	273,317	351,539	289,750		13,957
TRIMBLE COUNTY CT 10						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	593,307.31	273,097	341,052	299,720	20.76	14,437
2007	29,565.29	12,095	15,105	16,826	21.09	798
2017	164,340.00	26,222	32,747	144,740	21.92	6,603
	787,212.60	311,414	388,903	461,287		21,838
BROWN CT 5						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2001	562,558.04	297,828	353,375	242,936	18.11	13,414
2002	837.00	431	511	376	18.21	21
2010	232,392.85	86,986	103,210	143,127	18.85	7,593
	795,787.89	385,245	457,096	386,439		21,028
BROWN CT 6						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
1999	89,103.45	51,767	69,537	24,913	16.35	1,524
2009	20,420.52	8,605	11,559	10,087	17.05	592
2010	232,392.75	92,790	124,642	121,694	17.11	7,112
2011	64,543.29	24,263	32,592	35,824	17.16	2,088
2014	553,157.19	163,051	219,021	367,325	17.29	21,245
2018	33,875.91	5,104	6,856	29,052	17.44	1,666
	993,493.11	345,580	464,207	588,896		34,227

KENTUCKY UTILITIES COMPANY

ACCOUNT 342 FUEL HOLDERS, PRODUCERS AND ACCESSORIES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 7						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
1999	87,848.59	51,038	68,473	24,646	16.35	1,507
2009	21,086.20	8,885	11,920	10,431	17.05	612
2010	232,392.85	92,790	124,488	121,848	17.11	7,121
2011	64,543.31	24,263	32,552	35,864	17.16	2,090
2014	553,157.16	163,051	218,751	367,596	17.29	21,261
	959,028.11	340,027	456,184	560,386		32,591
BROWN CT 8						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
1995	2,370.10	1,621	2,512			
1997	1,827.00	1,214	1,937			
2010	232,392.85	107,484	182,238	64,099	13.50	4,748
2012	26,455.57	10,875	18,438	9,604	13.56	708
	263,045.52	121,194	205,125	73,703		5,456
BROWN CT 9						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -6						
1994	82,736.81	58,710	39,002	48,699	11.96	4,072
1995	1,271,203.00	890,587	591,624	755,851	12.02	62,883
1996	198,281.39	137,091	91,071	119,108	12.07	9,868
1997	219,834.00	149,834	99,536	133,488	12.12	11,014
2010	232,392.85	111,953	74,371	171,965	12.58	13,670
2012	26,455.55	11,368	7,552	20,491	12.63	1,622
2013	1,019,249.16	408,144	271,133	809,271	12.65	63,974
2014	105,015.81	38,617	25,654	85,663	12.67	6,761
2020	21,101,242.13	1,950,654	1,295,835	21,071,481	12.77	1,650,077
	24,256,410.70	3,756,958	2,495,778	23,216,017		1,823,941

KENTUCKY UTILITIES COMPANY

ACCOUNT 342 FUEL HOLDERS, PRODUCERS AND ACCESSORIES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 10						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
1995	21,944.22	15,006	16,595	6,666	12.84	519
1997	1,653.00	1,098	1,214	538	12.96	42
2010	232,392.85	107,484	118,867	127,470	13.50	9,442
2012	26,455.57	10,875	12,027	16,016	13.56	1,181
	282,445.64	134,463	148,703	150,689		11,184
BROWN CT 11						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2036						
NET SALVAGE PERCENT.. -6						
1996	16,452.45	10,826	15,022	2,418	13.72	176
1997	18,693.00	12,107	16,799	3,015	13.79	219
1998	7,567.00	4,820	6,688	1,333	13.85	96
2010	232,392.85	103,333	143,382	102,955	14.42	7,140
2012	26,455.57	10,434	14,478	13,565	14.48	937
	301,560.87	141,520	196,369	123,286		8,568
BROWN CT PIPELINE						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
1994	7,687,474.69	4,703,199	6,111,070	2,037,654	17.26	118,056
1998	206.00	117	152	66	17.78	4
1999	381,882.00	212,036	275,508	129,287	17.90	7,223
2003	36,567.97	18,326	23,812	14,950	18.30	817
2013	68,291.83	20,582	26,743	45,646	19.03	2,399
2015	33,700.20	8,197	10,651	25,071	19.14	1,310
2016	138,543.29	29,188	37,925	108,931	19.19	5,676
	8,346,665.98	4,991,645	6,485,860	2,361,606		135,485

KENTUCKY UTILITIES COMPANY

ACCOUNT 342 FUEL HOLDERS, PRODUCERS AND ACCESSORIES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
HAEFLING UNITS 1, 2 AND 3						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2025						
NET SALVAGE PERCENT.. -12						
1970	29,175.92	30,010	32,677			
1971	16,121.21	16,559	18,056			
1973	245.00	251	274			
1977	18,105.67	18,427	20,278			
2011	350,911.66	279,544	351,042	41,979	3.97	10,574
2018	15,804.86	7,565	9,500	8,202	3.98	2,061
2019	66,093.35	24,592	30,882	43,143	3.98	10,840
	496,457.67	376,948	462,709	93,324		23,475
PADDY'S RUN GENERATOR 13						
INTERIM SURVIVOR CURVE.. IOWA 50-R2						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2001	1,952,323.88	1,033,593	1,286,338	783,126	18.11	43,243
2002	4,531.00	2,336	2,907	1,896	18.21	104
2005	19,123.07	8,981	11,177	9,093	18.48	492
2014	1,990.13	544	677	1,433	19.09	75
	1,977,968.08	1,045,454	1,301,099	795,547		43,914
	84,186,567.51	21,975,042	27,079,292	63,561,622		3,477,214
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						18.3 4.13

KENTUCKY UTILITIES COMPANY

ACCOUNT 343 PRIME MOVERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
CANE RUN CC 7						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2055						
NET SALVAGE PERCENT.. -10						
2015	242,372,158.47	40,799,233	31,029,337	235,580,037	28.06	8,395,582
2016	207,310.50	29,677	22,570	205,471	28.34	7,250
2017	8,880,558.11	1,040,650	791,453	8,977,161	28.60	313,887
2018	832,950.55	75,215	57,204	859,042	28.85	29,776
2019	1,458,274.43	90,038	68,477	1,535,625	29.09	52,789
2020	21,308,049.55	841,689	640,136	22,798,719	29.26	779,177
2021	749,772.72			824,750	29.54	27,920
	275,809,074.33	42,876,502	32,609,178	270,780,804		9,606,381

TRIMBLE COUNTY CT 5						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2042						
NET SALVAGE PERCENT.. -8						
2002	28,126,888.59	14,340,393	17,580,193	12,796,847	17.49	731,666
2004	535,878.89	256,380	314,302	264,448	17.83	14,832
2006	139,712.62	62,079	76,104	74,786	18.14	4,123
2007	41,824.49	17,805	21,828	23,343	18.29	1,276
2010	35,842.85	13,073	16,026	22,684	18.67	1,215
2011	504,489.32	172,434	211,391	333,458	18.79	17,747
2012	2,767,405.85	879,783	1,078,545	1,910,254	18.89	101,125
2013	20,239.38	5,903	7,237	14,622	19.00	770
2014	84,338.50	22,303	27,342	63,744	19.09	3,339
2016	1,473,358.73	299,612	367,301	1,223,927	19.27	63,515
2017	2,359,071.33	398,730	488,812	2,058,985	19.35	106,407
2018	50,661.89	6,697	8,210	46,505	19.43	2,393
2019	32,613.58	2,990	3,666	31,557	19.51	1,617
2020	456,393.93	27,144	33,276	459,629	19.56	23,498
2021	10,168,621.57			10,982,111	19.64	559,171
	46,797,341.52	16,505,326	20,234,230	30,306,899		1,632,694

TRIMBLE COUNTY CT 6						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2042						
NET SALVAGE PERCENT.. -8						
2002	28,065,525.56	14,309,107	17,604,827	12,705,941	17.49	726,469
2004	615,389.01	294,420	362,232	302,388	17.83	16,960

KENTUCKY UTILITIES COMPANY

ACCOUNT 343 PRIME MOVERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY CT 6						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2042						
NET SALVAGE PERCENT.. -8						
2007	9,593.87	4,084	5,025	5,337	18.29	292
2009	15,420.35	5,953	7,324	9,330	18.55	503
2010	17,172.22	6,263	7,706	10,840	18.67	581
2011	2,137,560.66	730,615	898,893	1,409,673	18.79	75,023
2012	823,396.88	261,765	322,056	567,213	18.89	30,027
2013	1,203,046.01	350,899	431,719	867,571	19.00	45,662
2014	84,314.06	22,297	27,433	63,627	19.09	3,333
2016	1,774,933.18	360,938	444,070	1,472,857	19.27	76,433
2021	274,711.50			296,688	19.64	15,106
	35,021,063.30	16,346,341	20,111,283	17,711,465		990,389

TRIMBLE COUNTY CT 7						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	19,953,603.76	9,132,629	11,355,743	10,194,149	19.09	534,005
2006	404,108.42	170,974	212,593	223,844	19.47	11,497
2007	4,356.44	1,765	2,195	2,510	19.64	128
2011	447,639.13	144,179	179,276	304,174	20.26	15,014
2012	3,194,626.52	954,635	1,187,017	2,263,179	20.39	110,995
2013	17,078.59	4,683	5,823	12,622	20.51	615
2014	74,826.31	18,535	23,047	57,766	20.63	2,800
2018	2,639,482.46	323,006	401,634	2,449,007	21.05	116,342
2020	29,391.63	1,606	1,997	29,746	21.21	1,402
	26,765,113.26	10,752,012	13,369,325	15,536,997		792,798

TRIMBLE COUNTY CT 8						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	20,538,649.40	9,400,400	11,811,061	10,370,681	19.09	543,252
2006	294,116.88	124,438	156,349	161,297	19.47	8,284
2007	4,356.44	1,765	2,218	2,487	19.64	127
2010	17,172.20	5,920	7,438	11,108	20.11	552
2011	447,639.11	144,179	181,153	302,298	20.26	14,921
2012	3,146,258.75	940,181	1,181,283	2,216,676	20.39	108,714

KENTUCKY UTILITIES COMPANY

ACCOUNT 343 PRIME MOVERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY CT 8						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2013	257,690.19	70,665	88,786	189,519	20.51	9,240
2014	272,690.21	67,548	84,870	209,635	20.63	10,162
2018	167,995.80	20,558	25,830	155,606	21.05	7,392
2019	239,003.70	20,141	25,306	232,818	21.15	11,008
	25,385,572.68	10,795,795	13,564,294	13,852,124		713,652

TRIMBLE COUNTY CT 9						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	20,581,861.09	9,420,178	12,023,937	10,204,473	19.09	534,545
2006	293,790.76	124,300	158,657	158,637	19.47	8,148
2007	4,347.89	1,761	2,248	2,448	19.64	125
2009	193,345.44	70,687	90,225	118,588	19.97	5,938
2010	17,140.31	5,909	7,542	10,969	20.11	545
2011	446,821.76	143,916	183,695	298,873	20.26	14,752
2012	3,058,212.57	913,871	1,166,467	2,136,403	20.39	104,777
2013	17,048.40	4,675	5,967	12,445	20.51	607
2014	74,696.78	18,503	23,617	57,055	20.63	2,766
2018	452,462.08	55,370	70,674	417,985	21.05	19,857
2019	97,055.01	8,179	10,440	94,380	21.15	4,462
2020	177,885.52	9,717	12,403	179,714	21.21	8,473
	25,414,667.61	10,777,066	13,755,872	13,691,969		704,995

TRIMBLE COUNTY CT 10						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	20,520,106.19	9,391,913	11,989,098	10,172,617	19.09	532,877
2006	293,426.41	124,146	158,477	158,424	19.47	8,137
2007	169,756.36	68,773	87,791	95,546	19.64	4,865
2009	15,359.30	5,615	7,168	9,420	19.97	472
2011	445,974.29	143,643	183,365	298,287	20.26	14,723
2012	727,984.90	217,540	277,697	508,526	20.39	24,940
2013	2,332,742.32	639,691	816,587	1,702,774	20.51	83,022
2014	99,247.10	24,584	31,382	75,805	20.63	3,675

KENTUCKY UTILITIES COMPANY

ACCOUNT 343 PRIME MOVERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY CT 10						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2017	238,293.18	37,366	47,699	209,658	20.96	10,003
2018	350,745.07	42,922	54,791	324,013	21.05	15,393
2019	584,357.32	49,245	62,863	568,243	21.15	26,867
2020	519,453.04	28,376	36,223	524,786	21.21	24,742
2021	431,143.71			465,635	21.32	21,840
	26,728,589.19	10,773,814	13,753,142	15,113,734		771,556

BROWN CT 5						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2001	10,655,634.30	5,604,904	6,896,244	4,398,728	16.69	263,555
2002	16,181.00	8,276	10,183	6,969	16.86	413
2003	122,530.71	60,823	74,836	55,046	17.02	3,234
2006	712,419.38	318,672	392,092	363,072	17.45	20,806
2007	23,148.35	9,934	12,223	12,315	17.58	701
2010	16,889.40	6,232	7,668	10,235	17.92	571
2011	1,590,074.69	550,275	677,055	1,008,424	18.03	55,930
2012	99,764.48	32,135	39,539	66,212	18.12	3,654
2017	3,422,514.27	591,523	727,807	2,900,058	18.53	156,506
2018	32,157.17	4,349	5,351	28,736	18.60	1,545
	16,691,313.75	7,187,123	8,842,998	8,849,795		506,915

BROWN CT 6						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
1999	21,543,991.59	12,428,151	14,307,764	8,528,867	15.10	564,826
2002	704,287.00	377,669	434,787	311,757	15.53	20,075
2006	3,756,478.72	1,775,077	2,043,537	1,938,331	16.00	121,146
2007	28,730.96	13,061	15,036	15,418	16.10	958
2008	5,042,392.81	2,195,112	2,527,097	2,817,839	16.20	173,941
2009	154,832.01	64,250	73,967	90,155	16.29	5,534
2010	116,152.53	45,692	52,602	70,519	16.37	4,308
2012	348,120.25	120,245	138,431	230,577	16.53	13,949
2014	62,091.32	17,989	20,710	45,107	16.67	2,706

KENTUCKY UTILITIES COMPANY

ACCOUNT 343 PRIME MOVERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 6						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
2017	12,195.46	2,297	2,644	10,283	16.85	610
2018	155,680.78	23,022	26,504	138,518	16.90	8,196
2019	11,109,838.48	1,153,148	1,327,548	10,448,881	16.95	616,453
2020	483,122.18	32,468	37,378	474,731	16.99	27,942
	43,517,914.09	18,248,181	21,008,006	25,120,983		1,560,644
BROWN CT 7						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
1999	18,861,302.05	10,880,580	13,667,035	6,325,945	15.10	418,937
2001	5,754,196.00	3,166,894	3,977,918	2,121,530	15.39	137,851
2003	143,366.38	74,752	93,896	58,073	15.66	3,708
2004	35,835.80	18,131	22,774	15,212	15.78	964
2006	3,466,202.13	1,637,910	2,057,370	1,616,805	16.00	101,050
2007	28,730.96	13,061	16,406	14,049	16.10	873
2009	3,609,344.21	1,497,765	1,881,334	1,944,571	16.29	119,372
2012	198,456.45	68,549	86,104	124,260	16.53	7,517
2013	105,173.75	33,530	42,117	69,367	16.60	4,179
2017	12,195.46	2,297	2,885	10,042	16.85	596
2020	231,925.46	15,586	19,577	226,264	16.99	13,317
	32,446,728.65	17,409,055	21,867,416	12,526,116		808,364
BROWN CT 8						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
1995	12,991,861.89	8,808,171	11,900,102	1,871,271	11.94	156,723
1997	989,546.00	650,781	879,225	169,694	12.15	13,967
1998	2,617,425.00	1,693,093	2,287,419	487,051	12.25	39,759
2006	1,654,779.20	886,803	1,198,097	555,969	12.87	43,199
2007	7,728,711.57	4,005,445	5,411,476	2,780,958	12.92	215,244
2010	20,578.26	9,376	12,667	9,146	13.08	699
2011	483,972.65	209,006	282,373	230,638	13.12	17,579
2012	43,169.43	17,493	23,634	22,126	13.17	1,680

KENTUCKY UTILITIES COMPANY

ACCOUNT 343 PRIME MOVERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 8						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
2013	139,017.01	52,356	70,735	76,624	13.21	5,800
2017	12,195.46	2,805	3,790	9,138	13.35	684
2020	100,668.66	8,552	11,554	95,155	13.43	7,085
	26,781,925.13	16,343,881	22,081,072	6,307,769		502,419

BROWN CT 9						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -6						
1994	12,880,721.98	9,062,554	9,813,961	3,839,605	11.14	344,668
1995	409,078.00	284,023	307,572	126,050	11.24	11,214
1996	472,854.00	323,661	350,497	150,728	11.34	13,292
1997	1,221,475.00	823,897	892,209	402,554	11.43	35,219
1998	2,439,970.00	1,620,463	1,754,821	831,547	11.51	72,246
2006	1,051,911.47	583,973	632,392	482,634	12.04	40,086
2008	1,524,046.02	790,055	855,561	759,928	12.13	62,649
2009	637,647.85	317,034	343,320	332,586	12.18	27,306
2012	43,169.43	18,313	19,831	25,928	12.29	2,110
2013	7,591,117.33	2,994,939	3,243,259	4,803,325	12.33	389,564
2014	164,063.77	59,511	64,445	109,462	12.36	8,856
2016	26,135.70	7,523	8,147	19,557	12.42	1,575
2017	44,883.17	10,974	11,884	35,692	12.44	2,869
2018	326,128.75	63,390	68,646	277,051	12.47	22,217
	28,833,202.47	16,960,310	18,366,546	12,196,649		1,033,871

BROWN CT 10						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
1995	12,525,108.03	8,491,723	9,494,715	3,781,899	11.94	316,742
1996	3,189,002.00	2,130,089	2,381,683	998,660	12.05	82,876
1997	61,215.88	40,259	45,014	19,875	12.15	1,636
1999	66,608.00	42,335	47,335	23,269	12.34	1,886
2006	1,075,401.49	576,312	644,383	495,543	12.87	38,504
2010	831,538.26	378,856	423,604	457,826	13.08	35,002
2012	43,169.43	17,493	19,559	26,200	13.17	1,989

KENTUCKY UTILITIES COMPANY

ACCOUNT 343 PRIME MOVERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 10						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
2014	70,820.51	24,463	27,352	47,717	13.24	3,604
2015	8,059,176.08	2,505,069	2,800,953	5,741,774	13.28	432,362
2017	12,195.46	2,805	3,136	9,791	13.35	733
	25,934,235.14	14,209,404	15,887,735	11,602,554		915,334
BROWN CT 11						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2036						
NET SALVAGE PERCENT.. -6						
1996	13,968,458.38	9,117,291	11,803,811	3,002,755	12.73	235,880
1997	744,351.00	477,818	618,613	170,399	12.85	13,261
1998	580,337.00	366,099	473,974	141,183	12.96	10,894
1999	2,301,040.00	1,424,826	1,844,668	594,434	13.07	45,481
2000	14,222,650.21	8,633,729	11,177,762	3,898,248	13.17	295,995
2002	330,251.31	191,742	248,241	101,825	13.36	7,622
2003	1,240,395.23	702,271	909,204	405,615	13.45	30,157
2004	26,608.61	14,668	18,990	9,215	13.53	681
2007	979,775.63	490,357	634,847	403,716	13.74	29,383
2012	43,169.43	16,762	21,701	24,058	14.03	1,715
2016	89,706.74	23,228	30,072	65,017	14.20	4,579
2017	814,812.64	177,750	230,126	633,575	14.24	44,493
2018	7,370,275.24	1,273,827	1,649,176	6,163,316	14.27	431,907
	42,711,831.42	22,910,368	29,661,185	15,613,356		1,152,048
PADDY'S RUN GENERATOR 13						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2001	13,635,667.06	7,172,413	8,228,656	6,225,151	16.69	372,987
2002	37,538.00	19,199	22,026	17,764	16.86	1,054
2005	23,907.18	11,108	12,744	12,598	17.31	728
2007	40,130.09	17,222	19,758	22,780	17.58	1,296
2009	1,637,901.07	638,669	732,722	1,003,453	17.82	56,310
2012	3,717,041.26	1,197,307	1,373,628	2,566,436	18.12	141,636
2013	42,179.90	12,504	14,345	30,365	18.21	1,667

KENTUCKY UTILITIES COMPANY

ACCOUNT 343 PRIME MOVERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
PADDY'S RUN GENERATOR 13						
INTERIM SURVIVOR CURVE.. IOWA 40-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2014	114,061.15	30,670	35,187	85,718	18.30	4,684
2017	132,655.46	22,927	26,303	114,311	18.53	6,169
2019	197,451.18	18,590	21,328	187,971	18.67	10,068
	19,578,532.35	9,140,609	10,486,698	10,266,546		596,599
	698,417,104.89	241,235,787	275,598,980	479,477,760		22,288,659
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						21.5 3.19

KENTUCKY UTILITIES COMPANY

ACCOUNT 344 GENERATORS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
CANE RUN CC 7						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2055						
NET SALVAGE PERCENT.. -10						
2015	57,858,855.74	9,983,314	12,013,181	51,631,560	32.09	1,608,961
2017	928,780.35	111,964	134,729	886,929	32.42	27,357
2018	3,926,958.26	363,197	437,044	3,882,610	32.57	119,208
2019	55,673.45	3,529	4,247	56,994	32.71	1,742
2020	14,319.12	578	696	15,056	32.81	459
	62,784,586.92	10,462,582	12,589,897	56,473,149		1,757,727
TRIMBLE COUNTY CT 5						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2042						
NET SALVAGE PERCENT.. -8						
2002	3,727,131.97	1,952,352	2,361,448	1,663,855	19.60	84,891
2004	28,850.68	14,223	17,203	13,955	19.79	705
2012	37,125.91	12,209	14,767	25,329	20.42	1,240
2016	197,740.51	41,495	50,190	163,370	20.65	7,911
2017	11,119.38	1,946	2,354	9,655	20.69	467
	4,001,968.45	2,022,225	2,445,962	1,876,164		95,214
TRIMBLE COUNTY CT 6						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2042						
NET SALVAGE PERCENT.. -8						
2002	3,644,726.66	1,909,187	2,270,751	1,665,554	19.60	84,977
2004	25,477.86	12,560	14,939	12,577	19.79	636
2012	37,125.91	12,209	14,521	25,575	20.42	1,252
2016	188,639.76	39,585	47,082	156,649	20.65	7,586
2017	9,617.17	1,683	2,002	8,385	20.69	405
	3,905,587.36	1,975,224	2,349,294	1,868,740		94,856

KENTUCKY UTILITIES COMPANY

ACCOUNT 344 GENERATORS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY CT 7						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	2,897,246.55	1,363,098	1,641,063	1,487,963	21.48	69,272
2012	32,943.60	10,201	12,281	23,298	22.24	1,048
2016	15,577.37	3,052	3,674	13,149	22.52	584
2017	8,161.25	1,326	1,596	7,218	22.58	320
2018	111,579.30	14,058	16,925	103,581	22.64	4,575
	3,065,508.07	1,391,735	1,675,540	1,635,209		75,799
TRIMBLE COUNTY CT 8						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	2,884,921.85	1,357,299	1,633,949	1,481,766	21.48	68,984
2012	32,943.58	10,201	12,280	23,299	22.24	1,048
2016	15,495.88	3,036	3,655	13,081	22.52	581
2017	8,097.18	1,316	1,584	7,161	22.58	317
2018	111,579.30	14,058	16,923	103,582	22.64	4,575
	3,053,037.79	1,385,910	1,668,392	1,628,889		75,505
TRIMBLE COUNTY CT 9						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	2,519,460.55	1,185,357	1,093,984	1,627,033	21.48	75,746
2012	32,943.58	10,201	9,415	26,164	22.24	1,176
2016	923,247.72	180,865	166,923	830,184	22.52	36,864
2017	8,152.66	1,325	1,223	7,582	22.58	336
	3,483,804.51	1,377,748	1,271,545	2,490,964		114,122
TRIMBLE COUNTY CT 10						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	2,858,898.17	1,345,056	1,564,959	1,522,651	21.48	70,887
2012	32,662.90	10,114	11,768	23,508	22.24	1,057

KENTUCKY UTILITIES COMPANY

ACCOUNT 344 GENERATORS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY CT 10						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2016	17,722.17	3,472	4,040	15,100	22.52	671
2017	316,212.04	51,394	59,796	281,713	22.58	12,476
2020	212,210.95	11,952	13,906	215,282	22.72	9,475
	3,437,706.23	1,421,988	1,654,469	2,058,254		94,566
BROWN CT 5						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2001	2,703,804.50	1,460,129	1,727,028	1,139,004	18.67	61,007
2002	3,906.00	2,055	2,431	1,710	18.76	91
2011	67,603.05	24,212	28,638	43,021	19.44	2,213
2012	8,674.12	2,890	3,418	5,776	19.50	296
2017	11,722.36	2,089	2,471	9,955	19.74	504
2018	214,847.52	29,904	35,370	192,368	19.78	9,725
	3,010,557.55	1,521,279	1,799,356	1,391,835		73,836
BROWN CT 6						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
1999	3,299,781.01	1,951,999	2,221,205	1,276,562	16.82	75,895
2012	8,674.11	3,096	3,523	5,672	17.63	322
2017	14,121.88	2,745	3,124	11,846	17.81	665
	3,322,577.00	1,957,840	2,227,852	1,294,080		76,882
BROWN CT 7						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
1999	3,494,399.87	2,067,127	2,447,807	1,256,257	16.82	74,688
2001	29,668.00	16,791	19,883	11,565	16.97	681

KENTUCKY UTILITIES COMPANY

ACCOUNT 344 GENERATORS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 7						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
2012	8,674.11	3,096	3,666	5,528	17.63	314
2017	9,540.89	1,855	2,197	7,917	17.81	445
2019	330,676.16	35,280	41,777	308,740	17.87	17,277
	3,872,959.03	2,124,149	2,515,330	1,590,007		93,405
BROWN CT 8						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
1995	4,898,303.90	3,398,244	4,271,055	921,147	13.15	70,049
2012	8,674.11	3,614	4,542	4,652	13.82	337
2017	162,368.84	38,343	48,191	123,920	13.92	8,902
	5,069,346.85	3,440,201	4,323,788	1,049,720		79,288
BROWN CT 9						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -6						
1994	5,278,019.61	3,796,956	4,185,459	1,409,241	12.23	115,228
1995	118,873.00	84,455	93,096	32,909	12.28	2,680
2012	8,674.11	3,777	4,163	5,031	12.85	392
2017	166,819.24	41,779	46,054	130,775	12.93	10,114
	5,572,385.96	3,926,967	4,328,773	1,577,956		128,414
BROWN CT 10						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
1995	4,723,695.32	3,277,108	3,585,988	1,421,129	13.15	108,071
2012	8,674.11	3,614	3,955	5,240	13.82	379
2017	160,707.99	37,951	41,528	128,822	13.92	9,254
2018	97,189.20	18,255	19,976	83,045	13.93	5,962
	4,990,266.62	3,336,928	3,651,446	1,638,237		123,666

KENTUCKY UTILITIES COMPANY

ACCOUNT 344 GENERATORS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 11						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2036						
NET SALVAGE PERCENT.. -6						
1996	4,380,722.17	2,928,140	3,444,320	1,199,245	14.06	85,295
1997	119,111.00	78,386	92,204	34,054	14.12	2,412
2012	8,674.11	3,468	4,079	5,115	14.78	346
2013	1,061,783.54	393,944	463,389	662,101	14.80	44,737
2017	159,599.17	35,733	42,032	127,143	14.90	8,533
	5,729,889.99	3,439,671	4,046,025	2,027,658		141,323
BROWN SOLAR						
INTERIM SURVIVOR CURVE.. IOWA 25-S2.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -3						
2016	13,068,659.23	3,028,393	3,058,903	10,401,816	17.19	605,109
	13,068,659.23	3,028,393	3,058,903	10,401,816		605,109
HAEFLING UNITS 1, 2 AND 3						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2025						
NET SALVAGE PERCENT.. -12						
1970	2,280,419.06	2,354,622	2,472,265	81,805	3.80	21,528
1971	146,547.00	151,158	158,710	5,422	3.80	1,427
1975	18,497.00	18,974	19,922	795	3.83	208
2001	236,672.62	220,727	231,755	33,318	3.97	8,392
	2,682,135.68	2,745,481	2,882,652	121,340		31,555
PADDY'S RUN GENERATOR 13						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2001	4,940,529.59	2,668,022	2,891,274	2,345,688	18.67	125,639
2002	11,002.00	5,787	6,271	5,391	18.76	287
2012	26,588.67	8,860	9,601	18,583	19.50	953
2014	23,196.65	6,457	6,997	17,591	19.60	898

KENTUCKY UTILITIES COMPANY

ACCOUNT 344 GENERATORS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
PADDY'S RUN GENERATOR 13						
INTERIM SURVIVOR CURVE.. IOWA 60-S1.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2017	4,616.70	823	892	4,002	19.74	203
2018	12,559.21	1,748	1,894	11,418	19.78	577
2019	308,025.59	29,941	32,446	294,061	19.81	14,844
	5,326,518.41	2,721,638	2,949,376	2,696,734		143,401
SIMPSONVILLE SOLAR						
INTERIM SURVIVOR CURVE.. IOWA 25-S2.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -1						
2019	279,373.45	25,443	27,670	254,497	20.18	12,611
2020	436,615.48	25,299	27,514	413,468	20.54	20,130
	715,988.93	50,742	55,184	667,965		32,741
OTHER SOLAR						
SURVIVOR CURVE.. IOWA 25-S2.5						
NET SALVAGE PERCENT.. -10						
2020	247,885.69	13,634	15,570	257,104	23.75	10,825
	247,885.69	13,634	15,570	257,104		10,825
	137,341,370.27	48,344,335	55,509,354	92,745,821		3,848,234
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						24.1 2.80

KENTUCKY UTILITIES COMPANY

ACCOUNT 345 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
CANE RUN CC 7						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2055						
NET SALVAGE PERCENT.. -10						
2015	18,137,467.80	3,080,268	3,328,219	16,622,995	32.37	513,531
2017	6,212,379.94	737,894	797,292	6,036,326	32.63	184,993
2019	61,073.06	3,818	4,125	63,055	32.86	1,919
2020	177,340.73	7,023	7,588	187,486	32.94	5,692
	24,588,261.53	3,829,003	4,137,225	22,909,863		706,135
TRIMBLE COUNTY CT 5						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2042						
NET SALVAGE PERCENT.. -8						
2002	1,605,793.77	834,958	1,006,412	727,845	19.85	36,667
2004	12,857.15	6,286	7,577	6,309	20.02	315
2011	24,962.92	8,758	10,556	16,404	20.47	801
2012	68,399.27	22,337	26,924	46,947	20.51	2,289
2016	79,472.16	16,610	20,021	65,809	20.67	3,184
2019	103,924.48	9,768	11,774	100,465	20.77	4,837
2020	152,617.00	9,352	11,272	153,554	20.78	7,390
	2,048,026.75	908,069	1,094,536	1,117,333		55,483
TRIMBLE COUNTY CT 6						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2042						
NET SALVAGE PERCENT.. -8						
2002	4,273,501.25	2,222,075	2,529,984	2,085,398	19.85	105,058
2004	11,354.12	5,551	6,320	5,942	20.02	297
2012	5,249.63	1,714	1,952	3,718	20.51	181
2014	207,248.18	56,282	64,081	159,747	20.60	7,755
2016	79,472.18	16,610	18,912	66,918	20.67	3,237
	4,576,825.36	2,302,232	2,621,248	2,321,723		116,528

KENTUCKY UTILITIES COMPANY

ACCOUNT 345 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY CT 7						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	3,100,555.26	1,445,992	1,783,699	1,564,900	21.75	71,949
2009	2,204.23	826	1,019	1,362	22.17	61
2012	22,579.92	6,924	8,541	15,845	22.37	708
2013	50,147.90	14,093	17,384	36,775	22.43	1,640
2014	445,207.65	113,172	139,603	341,221	22.48	15,179
2016	70,517.58	13,699	16,898	59,261	22.57	2,626
	3,691,212.54	1,594,706	1,967,145	2,019,365		92,163
TRIMBLE COUNTY CT 8						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	3,137,127.45	1,463,048	1,804,652	1,583,445	21.75	72,802
2009	2,204.23	826	1,019	1,362	22.17	61
2012	5,249.63	1,610	1,986	3,684	22.37	165
2014	178,150.40	45,286	55,860	136,543	22.48	6,074
	3,322,731.71	1,510,770	1,863,517	1,725,033		79,102
TRIMBLE COUNTY CT 9						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	3,222,176.42	1,502,712	1,882,122	1,597,828	21.75	73,463
2009	2,204.19	826	1,035	1,346	22.17	61
2012	22,579.92	6,924	8,672	15,714	22.37	702
	3,246,960.53	1,510,462	1,891,829	1,614,888		74,226
TRIMBLE COUNTY CT 10						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	7,144,489.03	3,331,944	3,810,822	3,905,226	21.75	179,551
2009	2,204.23	826	945	1,436	22.17	65
2011	49,925.08	16,503	18,875	35,044	22.31	1,571

KENTUCKY UTILITIES COMPANY

ACCOUNT 345 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY CT 10						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2012	5,249.63	1,610	1,841	3,828	22.37	171
2013	59,208.10	16,640	19,032	44,913	22.43	2,002
2014	238,412.63	60,604	69,314	188,171	22.48	8,371
2017	3,227,114.17	520,562	595,379	2,889,904	22.61	127,815
	10,726,602.87	3,948,689	4,516,208	7,068,523		319,546
BROWN CT 5						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2001	2,262,097.84	1,213,946	1,460,953	936,871	18.90	49,570
2002	3,069.00	1,603	1,929	1,324	18.99	70
2010	11,853.65	4,488	5,401	7,164	19.49	368
2012	33,212.26	10,985	13,220	21,985	19.58	1,123
2020	27,388.25	1,723	2,074	26,958	19.81	1,361
	2,337,621.00	1,232,745	1,483,577	994,301		52,492
BROWN CT 6						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
1999	1,930,284.42	1,136,364	1,362,763	683,338	17.02	40,149
2010	44,931.99	18,141	21,755	25,873	17.62	1,468
2012	41,923.74	14,880	17,845	26,595	17.68	1,504
2013	9,502.80	3,113	3,733	6,340	17.71	358
2017	33,285.09	6,431	7,712	27,570	17.81	1,548
2019	158,650.48	16,867	20,227	147,942	17.85	8,288
2020	116,762.73	8,096	9,709	114,060	17.86	6,386
	2,335,341.25	1,203,892	1,443,745	1,031,717		59,701

KENTUCKY UTILITIES COMPANY

ACCOUNT 345 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 7						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
1999	1,920,146.21	1,130,395	1,351,724	683,630	17.02	40,166
2010	15,635.77	6,313	7,549	9,025	17.62	512
2012	41,923.74	14,880	17,793	26,646	17.68	1,507
2013	9,502.80	3,113	3,723	6,350	17.71	359
2019	274,110.01	29,143	34,849	255,707	17.85	14,325
2020	36,113.33	2,504	2,994	35,286	17.86	1,976
	2,297,431.86	1,186,348	1,418,633	1,016,645		58,845
BROWN CT 8						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
1993	1,248,083.99	886,614	1,080,726	242,243	13.17	18,394
1995	1,075,103.50	744,256	907,201	232,409	13.28	17,501
1997	302,783.00	203,556	248,122	72,828	13.38	5,443
2007	10,526.68	5,591	6,815	4,343	13.73	316
2012	530,214.36	220,118	268,310	293,717	13.84	21,222
2014	159,624.16	56,427	68,781	100,421	13.87	7,240
2018	16,682.75	3,118	3,801	13,883	13.92	997
2020	245,088.06	21,394	26,078	233,715	13.93	16,778
	3,588,106.50	2,141,074	2,609,834	1,193,559		87,891
BROWN CT 9						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -6						
1994	1,895,387.28	1,360,931	1,452,640	556,471	12.35	45,058
1995	1,463,066.43	1,037,209	1,107,103	443,747	12.40	35,786
1996	293,484.00	205,297	219,131	91,962	12.44	7,392
1997	336,423.00	231,981	247,613	108,995	12.48	8,734
2011	217,486.58	100,320	107,080	123,456	12.85	9,607
2012	353,258.42	153,185	163,508	210,946	12.87	16,391

KENTUCKY UTILITIES COMPANY

ACCOUNT 345 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 9						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -6						
2014	148,050.77	54,974	58,679	98,255	12.89	7,623
2017	15,008.67	3,747	3,999	11,910	12.92	922
2021	306,531.50			324,923	12.95	25,091
	5,028,696.65	3,147,644	3,359,753	1,970,665		156,604
BROWN CT 10						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
1993	940,073.23	667,809	715,815	280,663	13.17	21,311
1995	1,483,977.47	1,027,305	1,101,153	471,863	13.28	35,532
1997	320,442.00	215,428	230,914	108,754	13.38	8,128
2012	353,258.41	146,655	157,197	217,257	13.84	15,698
2014	148,140.76	52,368	56,132	100,897	13.87	7,274
	3,245,891.87	2,109,565	2,261,212	1,179,433		87,943
BROWN CT 11						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2036						
NET SALVAGE PERCENT.. -6						
1996	1,767,686.75	1,177,707	1,582,819	290,928	14.22	20,459
1997	35,427.00	23,240	31,234	6,318	14.27	443
2012	477,155.79	189,857	255,165	250,620	14.81	16,922
2014	173,988.88	58,766	78,981	105,448	14.84	7,106
	2,454,258.42	1,449,570	1,948,199	653,315		44,930
BROWN SOLAR						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -3						
2016	445,469.72	91,918	112,405	346,429	19.28	17,968
	445,469.72	91,918	112,405	346,429		17,968

KENTUCKY UTILITIES COMPANY

ACCOUNT 345 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
HAEFLING UNITS 1, 2 AND 3						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2025						
NET SALVAGE PERCENT.. -12						
1970	199,408.97	206,449	223,338			
1971	41,999.00	43,421	47,039			
1973	2,825.81	2,913	3,165			
2007	19,643.19	17,103	19,327	2,673	3.98	672
2012	552,386.44	428,054	483,719	134,954	3.99	33,823
	816,263.41	697,940	776,588	137,627		34,495
PADDY'S RUN GENERATOR 13						
INTERIM SURVIVOR CURVE.. IOWA 55-R3						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2001	2,416,310.20	1,296,704	1,600,768	960,521	18.90	50,821
2002	5,178.00	2,705	3,339	2,149	18.99	113
2012	25,073.74	8,293	10,238	16,341	19.58	835
2014	10,513.67	2,906	3,587	7,557	19.65	385
2015	42,575.01	10,459	12,912	32,218	19.69	1,636
2020	15,465.29	973	1,201	15,192	19.81	767
	2,515,115.91	1,322,040	1,632,045	1,033,978		54,557
SIMPSONVILLE SOLAR						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -1						
2019	329,568.03	26,646	14,969	317,895	22.18	14,333
	329,568.03	26,646	14,969	317,895		14,333

KENTUCKY UTILITIES COMPANY

ACCOUNT 345 ACCESSORY ELECTRIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
OTHER SOLAR						
SURVIVOR CURVE.. IOWA 45-R2.5						
NET SALVAGE PERCENT.. -5						
2020	155,657.54	4,285	5,555	157,885	43.82	3,603
	155,657.54	4,285	5,555	157,885		3,603
	77,750,043.45	30,217,598	35,158,223	48,810,177		2,116,545
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						23.1 2.72

KENTUCKY UTILITIES COMPANY

ACCOUNT 346 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
CANE RUN CC 7						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2055						
NET SALVAGE PERCENT.. -10						
2015	3,049,375.67	527,633	471,161	2,883,152	30.43	94,747
2018	98,158.41	9,112	8,137	99,837	31.14	3,206
2019	101,665.44	6,454	5,763	106,069	31.35	3,383
	3,249,199.52	543,199	485,061	3,089,058		101,336
TRIMBLE COUNTY CT 5						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2042						
NET SALVAGE PERCENT.. -8						
2006	15,274.16	6,971	10,088	6,409	19.21	334
2007	13,689.47	5,989	8,666	6,118	19.34	316
	28,963.63	12,960	18,754	12,527		650
TRIMBLE COUNTY CT 7						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	8,888.93	4,185	5,420	4,180	20.37	205
	8,888.93	4,185	5,420	4,180		205
TRIMBLE COUNTY CT 8						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	8,861.01	4,171	5,403	4,167	20.37	205
	8,861.01	4,171	5,403	4,167		205

KENTUCKY UTILITIES COMPANY

ACCOUNT 346 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
TRIMBLE COUNTY CT 9						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	9,113.52	4,290	5,541	4,302	20.37	211
	9,113.52	4,290	5,541	4,302		211
TRIMBLE COUNTY CT 10						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -8						
2004	9,105.52	4,287	5,719	4,115	20.37	202
2010	26,747.06	9,486	12,655	16,232	21.31	762
2011	6,015.93	1,995	2,661	3,836	21.44	179
	41,868.51	15,768	21,035	24,183		1,143
BROWN CT 5						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2001	2,055,406.39	1,109,584	1,428,084	750,646	17.72	42,362
2002	2,790.00	1,465	1,886	1,072	17.88	60
2003	998.32	509	655	403	18.03	22
2004	22,748.93	11,231	14,455	9,659	18.17	532
2007	30,442.19	13,424	17,277	14,991	18.53	809
	2,112,385.83	1,136,213	1,462,357	776,772		43,785
BROWN CT 6						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
1999	15,859.82	9,376	12,436	4,375	15.97	274
2001	2,144.00	1,209	1,604	669	16.25	41
2003	16,198.37	8,665	11,493	5,677	16.48	344
2005	14,757.51	7,415	9,835	5,808	16.69	348

KENTUCKY UTILITIES COMPANY

ACCOUNT 346 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 6						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
2011	4,789.15	1,817	2,410	2,666	17.18	155
2015	47,513.99	12,586	16,694	33,671	17.41	1,934
2019	16,805.14	1,779	2,360	15,454	17.58	879
	118,067.98	42,847	56,833	68,319		3,975
BROWN CT 7						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2039						
NET SALVAGE PERCENT.. -6						
1999	15,776.54	9,327	12,869	3,854	15.97	241
2003	19,870.85	10,630	14,667	6,396	16.48	388
2015	47,514.02	12,586	17,366	32,999	17.41	1,895
	83,161.41	32,543	44,902	43,249		2,524
BROWN CT 8						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
1994	34,743.72	24,409	32,097	4,732	12.40	382
1995	185,434.00	128,464	168,925	27,635	12.51	2,209
2001	9,891.00	6,176	8,121	2,363	13.04	181
2011	55,863.61	24,620	32,374	26,841	13.56	1,979
2012	5,293.68	2,192	2,882	2,729	13.59	201
2016	44,189.81	12,296	16,169	30,672	13.71	2,237
2021	295,400.00			313,124	13.81	22,674
	630,815.82	198,157	260,568	408,097		29,863
BROWN CT 9						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -6						
1994	133,445.12	95,815	106,652	34,800	11.65	2,987
1995	548,710.00	388,740	432,707	148,925	11.75	12,674
1996	5,227.00	3,653	4,066	1,474	11.83	125

KENTUCKY UTILITIES COMPANY

ACCOUNT 346 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN CT 9						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2034						
NET SALVAGE PERCENT.. -6						
2001	9,891.00	6,354	7,073	3,412	12.19	280
2014	66,684.25	24,684	27,476	43,209	12.71	3,400
2015	33,485.67	11,170	12,433	23,061	12.74	1,810
2016	44,169.78	12,952	14,417	32,403	12.76	2,539
	841,612.82	543,368	604,824	287,286		23,815
BROWN CT 10						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2035						
NET SALVAGE PERCENT.. -6						
1995	191,404.56	132,600	144,718	58,171	12.51	4,650
1996	3,144.00	2,146	2,342	991	12.62	79
2001	9,891.00	6,176	6,740	3,744	13.04	287
2003	32,867.56	19,611	21,403	13,436	13.17	1,020
	237,307.12	160,533	175,204	76,342		6,036
BROWN CT 11						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2036						
NET SALVAGE PERCENT.. -6						
1996	142,285.17	94,938	119,137	31,685	13.38	2,368
1997	21,262.00	13,956	17,513	5,024	13.49	372
1999	9,687.00	6,135	7,699	2,569	13.69	188
2001	24,337.00	14,791	18,561	7,236	13.87	522
2003	269,625.58	156,203	196,019	89,785	14.03	6,400
2004	46,587.64	26,273	32,970	16,413	14.10	1,164
2005	20,014.16	10,966	13,761	7,454	14.16	526
2018	26,328.64	4,636	5,818	22,091	14.71	1,502
	560,127.19	327,898	411,478	182,257		13,042

KENTUCKY UTILITIES COMPANY

ACCOUNT 346 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
BROWN SOLAR						
INTERIM SURVIVOR CURVE.. IOWA 40-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -3						
2016	424,778.28	88,126	81,475	356,047	19.07	18,671
2020	100,281.85	6,129	5,666	97,624	19.34	5,048
	525,060.13	94,255	87,141	453,671		23,719
HAEFLING UNITS 1, 2 AND 3						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2025						
NET SALVAGE PERCENT.. -12						
1970	30,264.20	31,234	33,896			
1971	5,384.33	5,550	6,030			
1973	113.00	116	127			
2013	69,229.69	51,539	58,227	19,310	3.98	4,852
2018	7,104.00	3,395	3,836	4,121	3.99	1,033
	112,095.22	91,834	102,116	23,431		5,885
PADDY'S RUN GENERATOR 13						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2041						
NET SALVAGE PERCENT.. -6						
2001	1,080,251.15	583,159	749,983	395,083	17.72	22,296
2002	2,588.00	1,359	1,748	996	17.88	56
2016	14,201.30	3,016	3,879	11,175	19.28	580
2021	27,990.21			29,670	19.53	1,519
	1,125,030.66	587,534	755,610	436,922		24,451

KENTUCKY UTILITIES COMPANY

ACCOUNT 346 MISCELLANEOUS POWER PLANT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SIMPSONVILLE SOLAR						
INTERIM SURVIVOR CURVE.. IOWA 40-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2044						
NET SALVAGE PERCENT.. -1						
2019	30,340.85	2,477	1,388	29,256	21.95	1,333
	30,340.85	2,477	1,388	29,256		1,333
	9,722,900.15	3,802,232	4,503,635	5,924,019		282,178
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						21.0 2.90

KENTUCKY UTILITIES COMPANY

ACCOUNT 350.1 LAND RIGHTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 75-R3						
NET SALVAGE PERCENT.. 0						
1941	686,361.06	567,943	686,361			
1942	27,091.62	22,269	27,092			
1943	1,077.00	879	1,077			
1944	860.00	697	860			
1945	5,395.00	4,340	5,395			
1946	38,829.00	30,996	38,829			
1947	65,530.00	51,891	65,530			
1948	33,277.00	26,133	33,277			
1949	228,344.00	177,805	228,344			
1950	22,549.00	17,405	22,549			
1951	104,789.00	80,143	104,789			
1952	186,048.00	140,950	186,048			
1953	409,306.00	307,090	409,306			
1954	108,821.00	80,832	108,821			
1955	85,914.00	63,153	85,914			
1956	259,450.00	188,672	259,450			
1957	32,179.00	23,143	32,179			
1958	373,514.00	265,595	373,514			
1959	226,833.00	159,418	224,783	2,050	22.29	92
1960	263,434.00	182,929	257,934	5,500	22.92	240
1961	327,284.00	224,474	316,513	10,771	23.56	457
1962	280,359.36	189,823	267,655	12,704	24.22	525
1963	465,120.00	310,826	438,272	26,848	24.88	1,079
1964	93,142.00	61,411	86,591	6,551	25.55	256
1965	287,634.00	186,999	263,673	23,961	26.24	913
1966	415,879.00	266,549	375,840	40,039	26.93	1,487
1967	611,565.00	386,264	544,641	66,924	27.63	2,422
1968	128,655.00	80,040	112,858	15,797	28.34	557
1969	402,094.00	246,295	347,281	54,813	29.06	1,886
1970	1,682,695.00	1,014,547	1,430,534	252,161	29.78	8,467
1971	970,069.00	575,319	811,213	158,856	30.52	5,205
1972	593,107.00	345,900	487,727	105,380	31.26	3,371
1973	978,038.00	560,611	790,474	187,564	32.01	5,860
1974	542,946.00	305,717	431,068	111,878	32.77	3,414
1975	172,802.00	95,525	134,692	38,110	33.54	1,136
1976	454,641.00	246,656	347,790	106,851	34.31	3,114
1977	141,182.00	75,127	105,931	35,251	35.09	1,005
1978	902,286.00	470,632	663,602	238,684	35.88	6,652
1979	881,852.00	450,565	635,307	246,545	36.68	6,722
1980	758,709.00	379,559	535,187	223,522	37.48	5,964
1981	572,541.00	280,242	395,147	177,394	38.29	4,633
1982	859,510.00	411,301	579,943	279,567	39.11	7,148
1983	315,498.00	147,527	208,016	107,482	39.93	2,692

KENTUCKY UTILITIES COMPANY

ACCOUNT 350.1 LAND RIGHTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 75-R3						
NET SALVAGE PERCENT.. 0						
1984	2,222,027.00	1,014,422	1,430,358	791,669	40.76	19,423
1985	1,379,271.00	614,231	866,079	513,192	41.60	12,336
1986	169,584.00	73,622	103,809	65,775	42.44	1,550
1987	604,324.00	255,508	360,272	244,052	43.29	5,638
1988	124,766.00	51,337	72,386	52,380	44.14	1,187
1989	125,746.00	50,282	70,899	54,847	45.01	1,219
1990	125,552.00	48,764	68,758	56,794	45.87	1,238
1991	308,966.00	116,378	164,096	144,870	46.75	3,099
1992	56,034.00	20,456	28,843	27,191	47.62	571
1993	47,759.00	16,868	23,784	23,975	48.51	494
1994	84,416.00	28,814	40,628	43,788	49.40	886
1995	414,604.00	136,542	192,527	222,077	50.30	4,415
1996	75,397.00	23,926	33,736	41,661	51.20	814
1997	64,154.96	19,588	27,620	36,535	52.10	701
1998	315,419.00	92,481	130,400	185,019	53.01	3,490
1999	347,323.37	97,574	137,582	209,741	53.93	3,889
2000	70,004.00	18,808	26,520	43,484	54.85	793
2003	349,837.18	80,977	114,179	235,658	57.64	4,088
2005	545.00	112	158	387	59.52	7
2009	353,837.52	55,103	77,696	276,142	63.32	4,361
2010	152,130.15	21,744	30,660	121,470	64.28	1,890
2011	147,871.51	19,243	27,133	120,739	65.24	1,851
2012	3,922,392.56	459,704	648,193	3,274,200	66.21	49,452
2013	1,801,301.84	187,822	264,833	1,536,469	67.18	22,871
2014	291,572.35	26,629	37,548	254,024	68.15	3,727
2020	902,661.46	14,804	20,874	881,787	73.77	11,953
2021	589,600.49			589,600	75.00	7,861
	31,044,307.43	13,249,931	18,461,578	12,582,729		245,101
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						51.3 0.79

KENTUCKY UTILITIES COMPANY

ACCOUNT 352.1 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R3						
NET SALVAGE PERCENT.. -30						
1941	37,779.00	42,040	44,282	4,831	10.08	479
1947	3,222.45	3,450	3,634	555	12.35	45
1948	1,369.00	1,455	1,533	247	12.77	19
1949	24,161.44	25,483	26,842	4,568	13.21	346
1950	14,309.16	14,972	15,770	2,832	13.66	207
1951	26,145.14	27,133	28,580	5,409	14.12	383
1952	2,055.05	2,114	2,227	445	14.60	30
1953	27,186.15	27,723	29,201	6,141	15.09	407
1954	45,930.85	46,412	48,887	10,823	15.59	694
1955	13,331.03	13,342	14,054	3,276	16.11	203
1956	161,112.14	159,658	168,172	41,274	16.64	2,480
1957	11,964.34	11,734	12,360	3,194	17.19	186
1958	48,471.27	47,043	49,552	13,461	17.74	759
1959	37,746.86	36,235	38,167	10,904	18.31	596
1960	35,313.90	33,513	35,300	10,608	18.90	561
1961	17,168.99	16,105	16,964	5,356	19.49	275
1962	10,847.11	10,052	10,588	3,513	20.10	175
1963	11,844.93	10,840	11,418	3,980	20.72	192
1964	41,449.54	37,450	39,447	14,437	21.35	676
1965	30,401.12	27,106	28,552	10,969	21.99	499
1966	44,544.30	39,170	41,259	16,649	22.65	735
1967	12,722.00	11,031	11,619	4,920	23.31	211
1968	13,800.95	11,793	12,422	5,519	23.99	230
1969	37,509.10	31,577	33,261	15,501	24.67	628
1970	67,936.08	56,321	59,325	28,992	25.36	1,143
1971	119,755.27	97,701	102,911	52,771	26.07	2,024
1972	184,978.89	148,475	156,393	84,080	26.78	3,140
1973	23,324.16	18,405	19,387	10,934	27.51	397
1974	28,215.50	21,882	23,049	13,631	28.24	483
1975	81,800.89	62,316	65,639	40,702	28.98	1,404
1976	38,626.68	28,888	30,429	19,786	29.73	666
1977	226,083.33	165,891	174,738	119,170	30.49	3,908
1978	183,522.54	132,070	139,113	99,466	31.25	3,183
1979	206,097.61	145,369	153,121	114,806	32.02	3,585
1980	194,448.55	134,301	141,463	111,320	32.81	3,393
1981	957,265.97	647,112	681,622	562,824	33.60	16,751
1982	700,284.66	463,114	487,811	422,559	34.39	12,287
1983	431,169.90	278,657	293,517	267,004	35.20	7,585
1984	202,967.66	128,122	134,955	128,903	36.01	3,580
1985	106,320.97	65,496	68,989	69,228	36.83	1,880
1986	52,014.10	31,249	32,915	34,703	37.65	922
1987	129,307.72	75,669	79,704	88,396	38.49	2,297
1988	114,353.09	65,133	68,606	80,053	39.33	2,035

KENTUCKY UTILITIES COMPANY

ACCOUNT 352.1 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R3						
NET SALVAGE PERCENT.. -30						
1989	17,100.34	9,470	9,975	12,255	40.18	305
1990	171,913.94	92,493	97,426	126,062	41.03	3,072
1991	7,702.35	4,021	4,235	5,778	41.89	138
1992	139,775.84	70,710	74,481	107,228	42.76	2,508
1993	96,351.62	47,186	49,702	75,555	43.63	1,732
1994	299,706.89	141,876	149,442	240,177	44.51	5,396
1995	479,982.26	219,372	231,071	392,906	45.39	8,656
1996	105,458.55	46,436	48,912	88,184	46.29	1,905
1997	95,464.07	40,458	42,616	81,487	47.18	1,727
1998	623,905.22	253,981	267,526	543,551	48.08	11,305
1999	27,077.02	10,565	11,128	24,072	48.99	491
2000	202,299.06	75,478	79,503	183,486	49.91	3,676
2001	124,554.25	44,366	46,732	115,189	50.82	2,267
2002	81,986.71	27,787	29,269	77,314	51.75	1,494
2003	38,594.54	12,414	13,076	37,097	52.68	704
2004	293,527.04	89,344	94,109	287,476	53.61	5,362
2005	191,745.22	55,016	57,950	191,319	54.55	3,507
2007	199,665.65	50,319	53,002	206,563	56.43	3,661
2008	5,185,960.84	1,215,470	1,280,290	5,461,459	57.38	95,181
2009	2,352,857.19	509,490	536,660	2,522,054	58.34	43,230
2010	130,562.84	25,969	27,354	142,378	59.29	2,401
2011	1,531,219.83	277,269	292,055	1,698,531	60.25	28,191
2012	891,090.53	145,300	153,049	1,005,369	61.22	16,422
2013	3,666,932.75	532,523	560,922	4,206,091	62.18	67,644
2014	2,085,586.37	265,324	279,473	2,431,789	63.15	38,508
2015	929,025.17	101,450	106,860	1,100,873	64.12	17,169
2016	3,891,084.54	354,089	372,973	4,685,437	65.10	71,973
2017	734,137.87	53,579	56,436	897,943	66.07	13,591
2018	2,827,470.66	154,894	163,154	3,512,558	67.05	52,387
2019	1,380,283.98	50,494	53,187	1,741,182	68.03	25,594
2020	200,017.68	4,569	4,813	255,210	68.77	3,711
	33,761,900.21	8,435,314	8,885,159	35,005,311		615,587

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 56.9 1.82

KENTUCKY UTILITIES COMPANY

ACCOUNT 352.2 STRUCTURES AND IMPROVEMENTS - SYS CONTROL/COM

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R3						
NET SALVAGE PERCENT.. -30						
2020	7,477.01	171		9,720	68.77	141
	7,477.01	171		9,720		141
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						68.9 1.89

KENTUCKY UTILITIES COMPANY

ACCOUNT 353.1 STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 60-R1.5						
NET SALVAGE PERCENT.. -15						
1948	3,894.45	3,441	3,587	892	13.90	64
1949	400,141.59	350,722	365,636	94,527	14.27	6,624
1950	332,812.74	289,347	301,651	81,084	14.64	5,539
1951	366,568.60	316,026	329,465	92,089	15.02	6,131
1952	80,213.75	68,554	71,469	20,777	15.41	1,348
1953	1,853,002.24	1,569,447	1,636,187	494,766	15.81	31,294
1954	106,865.03	89,692	93,506	29,389	16.21	1,813
1955	1,092,481.35	908,130	946,748	309,606	16.63	18,617
1956	1,104,437.53	909,178	947,840	322,263	17.05	18,901
1957	1,495,247.79	1,218,583	1,270,403	449,132	17.48	25,694
1959	580,408.23	463,110	482,804	184,665	18.37	10,053
1960	245,092.46	193,446	201,672	80,184	18.82	4,261
1961	496,504.83	387,410	403,884	167,097	19.29	8,662
1962	291,047.69	224,476	234,022	100,683	19.76	5,095
1963	936,245.04	713,485	743,826	332,856	20.24	16,445
1964	1,005,320.15	756,483	788,652	367,466	20.74	17,718
1965	876,301.07	651,004	678,688	329,058	21.24	15,492
1966	734,952.18	538,812	561,725	283,470	21.75	13,033
1967	253,916.57	183,671	191,482	100,522	22.26	4,516
1968	395,791.21	282,277	294,281	160,879	22.79	7,059
1969	2,581,996.60	1,815,220	1,892,411	1,076,885	23.32	46,179
1970	1,786,532.63	1,237,166	1,289,776	764,737	23.87	32,038
1971	2,663,304.54	1,816,241	1,893,476	1,169,324	24.42	47,884
1972	1,407,765.42	944,921	985,103	633,827	24.98	25,373
1973	650,183.07	429,313	447,569	300,142	25.55	11,747
1974	1,587,650.08	1,030,973	1,074,815	750,983	26.12	28,751
1975	1,268,330.03	809,264	843,678	614,902	26.71	23,021
1976	369,958.20	231,871	241,731	183,721	27.30	6,730
1977	7,806,451.20	4,802,919	5,007,161	3,970,258	27.90	142,303
1978	1,740,007.74	1,050,190	1,094,849	906,160	28.51	31,784
1979	3,558,707.34	2,106,294	2,195,863	1,896,650	29.12	65,132
1980	5,625,410.10	3,262,623	3,401,364	3,067,858	29.74	103,156
1981	2,309,082.31	1,311,338	1,367,102	1,288,343	30.37	42,422
1982	9,244,531.28	5,136,682	5,355,117	5,276,094	31.01	170,142
1983	1,258,601.83	683,893	712,975	734,417	31.65	23,204
1984	2,982,321.49	1,583,376	1,650,708	1,778,962	32.30	55,076
1985	6,489,266.94	3,363,196	3,506,214	3,956,443	32.96	120,038
1986	357,553.15	180,716	188,401	222,785	33.63	6,625
1987	311,342.42	153,361	159,883	198,161	34.30	5,777
1988	2,218,852.52	1,064,485	1,109,752	1,441,928	34.97	41,233
1989	1,540,230.98	718,549	749,105	1,022,161	35.66	28,664
1990	1,367,772.03	620,257	646,633	926,305	36.34	25,490
1991	1,079,635.71	475,116	495,320	746,261	37.04	20,147

KENTUCKY UTILITIES COMPANY

ACCOUNT 353.1 STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 60-R1.5						
NET SALVAGE PERCENT.. -15						
1992	7,135,740.87	3,044,464	3,173,928	5,032,174	37.74	133,338
1993	2,248,029.98	928,539	968,025	1,617,209	38.45	42,060
1994	1,264,468.55	505,066	526,544	927,595	39.16	23,687
1995	3,995,330.38	1,541,498	1,607,049	2,987,581	39.87	74,933
1996	2,202,846.35	819,514	854,363	1,678,910	40.59	41,363
1997	3,688,058.28	1,320,434	1,376,585	2,864,682	41.32	69,329
1998	3,750,896.27	1,290,479	1,345,356	2,968,175	42.05	70,587
1999	1,164,846.72	384,230	400,569	939,005	42.79	21,944
2000	2,451,059.01	773,738	806,641	2,012,077	43.53	46,223
2001	159,356.77	48,045	50,088	133,172	44.27	3,008
2002	711,737.80	204,355	213,045	605,453	45.02	13,449
2003	12,935,964.90	3,528,226	3,678,262	11,198,098	45.77	244,660
2004	1,948,497.34	503,053	524,445	1,716,327	46.53	36,886
2005	3,127,109.94	761,778	794,172	2,802,004	47.29	59,252
2006	2,904,925.95	664,792	693,062	2,647,603	48.06	55,090
2007	2,678,305.52	573,906	598,311	2,481,740	48.82	50,834
2008	5,940,528.18	1,184,123	1,234,477	5,597,130	49.60	112,845
2009	10,863,696.77	2,005,167	2,090,436	10,402,815	50.37	206,528
2010	10,662,212.69	1,808,578	1,885,487	10,376,058	51.15	202,855
2011	5,695,296.52	879,807	917,220	5,632,371	51.94	108,440
2012	35,176,827.25	4,901,733	5,110,178	35,343,173	52.73	670,267
2013	13,513,867.21	1,678,422	1,749,796	13,791,151	53.52	257,682
2014	20,383,677.83	2,219,181	2,313,551	21,127,679	54.32	388,948
2015	12,291,202.88	1,149,590	1,198,476	12,936,407	55.12	234,695
2016	28,440,125.29	2,224,018	2,318,594	30,387,550	55.92	543,411
2017	8,759,490.87	549,001	572,347	9,501,068	56.73	167,479
2018	56,398,045.91	2,659,168	2,772,248	62,085,505	57.54	1,078,997
2019	20,302,599.83	638,101	665,236	22,682,754	58.36	388,670
2020	30,027,700.98	592,912	618,125	33,913,731	58.97	575,101
2021	13,870,352.67		0	15,950,906	60.00	265,848
	397,549,531.62	84,327,176	87,913,150	369,268,811		7,509,684
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						49.2 1.89

KENTUCKY UTILITIES COMPANY

ACCOUNT 353.2 STATION EQUIPMENT - SYSTEM CONTROL/COMMUNICATION

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 32-S1.5						
NET SALVAGE PERCENT.. -15						
1992	417.97	324	481			
1993	7,293.25	5,530	8,387			
1994	227,320.50	168,615	261,419			
1996	69,429.47	49,029	79,844			
1997	362,507.80	249,217	416,884			
1999	20,202.13	13,090	23,232			
2002	110,971.63	64,646	116,391	11,226	15.79	711
2003	340,447.80	190,374	342,758	48,757	16.44	2,966
2020	75,037.88	3,371	6,069	80,225	30.75	2,609
	1,213,628.43	744,196	1,255,465	140,208		6,286
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 22.3 0.52						

KENTUCKY UTILITIES COMPANY

ACCOUNT 354 TOWERS AND FIXTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R4						
NET SALVAGE PERCENT.. -50						
1941	379,984.72	516,889	549,330	20,647	6.52	3,167
1942	1,388.10	1,879	1,997	85	6.83	12
1949	360,382.06	468,293	497,684	42,889	9.36	4,582
1950	4,182.36	5,396	5,735	539	9.79	55
1951	20,488.00	26,236	27,883	2,849	10.24	278
1953	17,028.02	21,448	22,794	2,748	11.22	245
1956	19,906.16	24,374	25,904	3,955	12.86	308
1958	986,158.80	1,182,118	1,256,311	222,927	14.06	15,855
1959	17,524.00	20,766	22,069	4,217	14.70	287
1960	16,344.36	19,144	20,346	4,171	15.34	272
1961	612,692.12	708,974	753,471	165,567	16.00	10,348
1962	252,963.20	289,084	307,228	72,217	16.67	4,332
1963	276,404.84	311,843	331,415	83,192	17.35	4,795
1964	49,946.80	55,613	59,103	15,817	18.04	877
1965	56,872.95	62,471	66,392	18,917	18.74	1,009
1966	72,558.00	78,580	83,512	25,325	19.46	1,301
1967	140,496.00	149,989	159,403	51,341	20.18	2,544
1969	503,586.20	521,748	554,494	200,885	21.65	9,279
1970	2,450,234.08	2,499,239	2,656,098	1,019,253	22.40	45,502
1971	1,268,563.53	1,273,004	1,352,901	549,944	23.17	23,735
1972	243,400.21	240,236	255,314	109,786	23.94	4,586
1973	976,679.29	947,442	1,006,906	458,113	24.73	18,525
1974	226,225.99	215,626	229,159	110,180	25.52	4,317
1975	192,029.00	179,699	190,977	97,066	26.33	3,687
1976	465,378.15	427,315	454,135	243,932	27.15	8,985
1977	971,068.22	874,588	929,480	527,122	27.97	18,846
1978	5,770,262.52	5,093,093	5,412,750	3,242,644	28.81	112,553
1979	83,490.85	72,172	76,702	48,534	29.66	1,636
1980	12,532,292.00	10,602,319	11,267,751	7,530,687	30.52	246,746
1981	138,335.27	114,481	121,666	85,837	31.38	2,735
1982	6,445,195.05	5,212,294	5,539,433	4,128,360	32.26	127,971
1984	9,911,845.74	7,639,952	8,119,457	6,748,312	34.03	198,305
1985	4,446,918.46	3,341,859	3,551,604	3,118,774	34.93	89,286
1986	1,888,194.87	1,382,159	1,468,907	1,363,385	35.84	38,041
1987	1,778,980.00	1,267,150	1,346,680	1,321,790	36.76	35,957
1988	11,777.06	8,156	8,668	8,998	37.68	239
1989	1,632,118.38	1,097,836	1,166,739	1,281,439	38.61	33,189
1990	238,275.00	155,524	165,285	192,128	39.54	4,859
1992	44,670.00	27,347	29,063	37,942	41.43	916
1994	0.01					
1996	108,099.00	57,308	60,905	101,244	45.26	2,237
1997	1,549,505.00	789,248	838,784	1,485,474	46.23	32,132
1999	106,700.00	49,913	53,046	107,004	48.17	2,221

KENTUCKY UTILITIES COMPANY

ACCOUNT 354 TOWERS AND FIXTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R4						
NET SALVAGE PERCENT.. -50						
2000	30,847.86	13,783	14,648	31,624	49.15	643
2001	42,618.00	18,146	19,285	44,642	50.13	891
2002	452,193.36	183,043	194,531	483,759	51.11	9,465
2003	2,222,893.40	853,124	906,669	2,427,671	52.09	46,605
2004	831,149.91	301,346	320,259	926,466	53.08	17,454
2005	1,603.60	547	581	1,824	54.07	34
2009	1,570,011.47	402,708	427,983	1,927,034	58.03	33,208
2010	842,678.98	198,084	210,516	1,053,502	59.03	17,847
2011	68,220.73	14,589	15,505	86,826	60.02	1,447
2012	8,104,214.78	1,559,535	1,657,416	10,498,906	61.02	172,057
2013	3,112,137.44	532,829	566,271	4,101,935	62.01	66,150
2014	895,946.95	134,204	142,627	1,201,293	63.01	19,065
2015	963,325.65	123,648	131,409	1,313,579	64.01	20,521
2016	1,476,744.40	157,916	167,827	2,047,290	65.01	31,492
2017	84,244.98	7,221	7,674	118,693	66.00	1,798
	77,967,975.88	52,533,528	55,830,682	61,121,282		1,555,429
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						39.3 1.99

KENTUCKY UTILITIES COMPANY

ACCOUNT 355 POLES AND FIXTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 54-R2						
NET SALVAGE PERCENT.. -80						
1941	32,508.33	52,447	43,054	15,461	5.60	2,761
1942	15,842.57	25,401	20,852	7,665	5.90	1,299
1943	7,417.30	11,821	9,704	3,647	6.19	589
1944	255.44	405	332	128	6.48	20
1945	3,446.46	5,425	4,453	1,751	6.78	258
1946	1,641.53	2,567	2,107	848	7.08	120
1947	24,127.24	37,494	30,779	12,650	7.38	1,714
1948	2,722.25	4,202	3,449	1,451	7.69	189
1949	50,103.26	76,825	63,066	27,120	8.00	3,390
1950	721.00	1,098	901	397	8.31	48
1951	84,626.06	127,955	105,039	47,288	8.64	5,473
1952	42,286.91	63,486	52,116	24,000	8.96	2,679
1953	111,055.78	165,474	135,839	64,061	9.30	6,888
1954	10,258.84	15,169	12,452	6,014	9.64	624
1955	143,015.43	209,804	172,230	85,198	9.99	8,528
1956	84,231.31	122,556	100,607	51,009	10.35	4,928
1957	34,502.03	49,775	40,861	21,243	10.72	1,982
1958	257,130.75	367,783	301,916	160,919	11.09	14,510
1959	272,296.56	385,936	316,817	173,317	11.48	15,097
1960	187,979.92	263,988	216,710	121,654	11.87	10,249
1961	280,344.74	389,865	320,043	184,578	12.28	15,031
1962	160,696.46	221,224	181,604	107,650	12.70	8,476
1963	372,105.02	507,057	416,246	253,543	13.12	19,325
1964	207,323.62	279,473	229,421	143,762	13.56	10,602
1965	466,535.52	621,896	510,519	329,245	14.01	23,501
1966	405,378.08	534,155	438,491	291,190	14.47	20,124
1967	610,366.30	794,693	652,369	446,290	14.94	29,872
1968	212,037.78	272,679	223,844	157,824	15.42	10,235
1969	1,295,235.82	1,644,517	1,349,995	981,429	15.91	61,686
1970	724,260.23	907,262	744,777	558,891	16.42	34,037
1971	501,876.13	620,150	509,085	394,292	16.93	23,290
1972	941,580.49	1,147,156	941,708	753,137	17.45	43,160
1973	2,092,122.66	2,511,238	2,061,492	1,704,329	17.99	94,738
1974	931,494.72	1,101,032	903,845	772,845	18.54	41,685
1975	858,133.94	998,302	819,513	725,128	19.10	37,965
1976	1,479,307.12	1,693,324	1,390,061	1,272,692	19.66	64,735
1977	588,623.45	662,403	543,771	515,751	20.24	25,482
1978	1,298,326.82	1,435,518	1,178,426	1,158,562	20.83	55,620
1979	1,193,105.70	1,295,319	1,063,336	1,084,254	21.43	50,595
1980	1,142,471.60	1,217,109	999,133	1,057,316	22.04	47,973
1981	1,741,311.92	1,819,089	1,493,302	1,641,059	22.66	72,421
1982	1,296,658.50	1,327,337	1,089,620	1,244,365	23.29	53,429
1983	1,391,050.23	1,394,291	1,144,583	1,359,307	23.93	56,803

KENTUCKY UTILITIES COMPANY

ACCOUNT 355 POLES AND FIXTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 54-R2						
NET SALVAGE PERCENT.. -80						
1984	2,164,615.16	2,122,747	1,742,577	2,153,730	24.58	87,621
1985	1,303,312.89	1,249,437	1,025,671	1,320,292	25.24	52,310
1986	3,376,708.19	3,161,754	2,595,505	3,482,570	25.91	134,410
1987	537,395.39	491,182	403,215	564,097	26.58	21,223
1988	2,297,583.85	2,047,147	1,680,517	2,455,134	27.27	90,031
1989	2,241,118.53	1,945,282	1,596,895	2,437,118	27.96	87,164
1990	1,436,259.10	1,212,671	995,490	1,589,776	28.67	55,451
1991	1,369,525.34	1,123,934	922,645	1,542,501	29.38	52,502
1992	2,419,401.30	1,927,445	1,582,253	2,772,669	30.10	92,115
1993	691,908.57	534,379	438,675	806,760	30.83	26,168
1994	1,367,218.80	1,022,691	839,534	1,621,460	31.56	51,377
1995	2,880,794.80	2,082,832	1,709,811	3,475,620	32.31	107,571
1996	3,128,291.95	2,183,560	1,792,499	3,838,427	33.06	116,105
1997	2,515,855.37	1,692,315	1,389,233	3,139,307	33.82	92,824
1998	1,979,878.20	1,280,965	1,051,553	2,512,228	34.59	72,629
1999	3,374,614.47	2,096,790	1,721,269	4,353,037	35.36	123,106
2000	990,099.91	589,438	483,874	1,298,306	36.14	35,924
2001	3,267,837.82	1,859,393	1,526,388	4,355,720	36.93	117,945
2002	1,286,620.60	697,786	572,817	1,743,100	37.73	46,199
2003	6,229,267.03	3,212,209	2,636,924	8,575,757	38.53	222,574
2004	1,433,731.73	700,613	575,138	2,005,579	39.34	50,981
2005	6,384,491.15	2,947,490	2,419,614	9,072,470	40.15	225,964
2006	2,919,701.97	1,267,145	1,040,208	4,215,256	40.98	102,861
2007	8,226,923.48	3,345,676	2,746,488	12,061,974	41.80	288,564
2008	1,829,036.55	692,594	568,555	2,723,711	42.64	63,877
2009	15,319,757.03	5,371,995	4,409,907	23,165,656	43.48	532,789
2010	7,988,902.24	2,575,031	2,113,860	12,266,164	44.33	276,701
2011	5,046,346.01	1,483,595	1,217,893	7,865,530	45.18	174,093
2012	44,446,591.68	11,793,370	9,681,257	70,322,608	46.04	1,527,424
2013	11,483,961.88	2,717,840	2,231,093	18,440,038	46.90	393,178
2014	12,939,789.58	2,687,154	2,205,903	21,085,718	47.77	441,401
2015	33,046,950.48	5,904,433	4,846,989	54,637,522	48.64	1,123,304
2016	42,137,584.25	6,278,669	5,154,201	70,693,451	49.53	1,427,286
2017	45,915,402.25	5,494,421	4,510,407	78,137,317	50.41	1,550,036
2018	54,301,977.48	4,887,178	4,011,917	93,731,642	51.30	1,827,128
2019	63,486,108.06	3,808,786	3,126,658	111,148,337	52.20	2,129,278
2020	109,805,804.71	4,136,824	3,395,947	194,254,501	52.87	3,674,191
2021	34,324,011.64		0	61,783,221	54.00	1,144,134
	567,451,895.26	124,011,471	101,801,848	919,611,564		19,620,570
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						46.9 3.46

KENTUCKY UTILITIES COMPANY

ACCOUNT 356 OVERHEAD CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R2.5						
NET SALVAGE PERCENT.. -80						
1941	474,464.17	698,481	742,641	111,395	12.75	8,737
1942	53,700.39	78,585	83,553	13,108	13.09	1,001
1943	11,261.93	16,377	17,412	2,859	13.45	213
1944	175.02	253	269	46	13.82	3
1945	5,828.16	8,363	8,892	1,599	14.20	113
1946	1,351.14	1,925	2,047	385	14.59	26
1947	205,698.60	290,971	309,367	60,890	14.99	4,062
1948	45,303.20	63,594	67,615	13,931	15.41	904
1949	1,180,239.34	1,644,012	1,747,950	376,481	15.83	23,783
1950	77,497.65	107,073	113,842	25,654	16.27	1,577
1951	450,756.73	617,447	656,483	154,879	16.73	9,258
1952	235,384.74	319,646	339,855	83,838	17.19	4,877
1953	1,107,097.01	1,489,739	1,583,924	408,851	17.67	23,138
1954	137,731.54	183,600	195,208	52,709	18.16	2,902
1955	532,380.27	702,835	747,270	211,014	18.66	11,308
1956	860,382.69	1,124,348	1,195,432	353,257	19.18	18,418
1957	116,690.96	150,931	160,473	49,571	19.70	2,516
1958	1,831,180.36	2,343,083	2,491,218	804,907	20.24	39,768
1959	732,602.31	927,035	985,644	333,040	20.79	16,019
1960	502,864.47	629,083	668,855	236,301	21.35	11,068
1961	1,119,632.25	1,383,953	1,471,450	543,888	21.93	24,801
1962	562,544.59	686,965	730,397	282,183	22.51	12,536
1963	1,384,989.26	1,670,297	1,775,897	717,084	23.10	31,043
1964	937,757.58	1,116,233	1,186,804	501,160	23.71	21,137
1965	1,232,826.41	1,448,110	1,539,663	679,425	24.32	27,937
1966	1,539,264.09	1,783,124	1,895,857	874,818	24.95	35,063
1967	880,237.15	1,005,208	1,068,760	515,667	25.59	20,151
1968	281,935.46	317,325	337,387	170,097	26.23	6,485
1969	2,205,418.14	2,445,368	2,599,970	1,369,783	26.88	50,959
1970	3,164,040.05	3,453,784	3,672,140	2,023,132	27.55	73,435
1971	1,701,919.81	1,828,454	1,944,053	1,119,403	28.22	39,667
1972	1,820,810.79	1,924,328	2,045,988	1,231,471	28.90	42,611
1973	3,160,697.43	3,284,350	3,491,994	2,197,261	29.59	74,257
1974	978,347.02	999,012	1,062,172	698,853	30.29	23,072
1975	1,296,369.40	1,300,417	1,382,632	950,833	30.99	30,682
1976	2,466,281.67	2,428,922	2,582,484	1,856,823	31.70	58,575
1977	1,600,321.47	1,546,035	1,643,779	1,236,800	32.43	38,138
1978	6,003,767.00	5,689,014	6,048,687	4,758,094	33.15	143,532
1979	1,974,112.42	1,833,058	1,948,948	1,604,454	33.89	47,343
1980	11,045,999.21	10,046,579	10,681,747	9,201,052	34.63	265,696
1981	4,121,975.47	3,669,490	3,901,484	3,518,072	35.38	99,437
1982	5,977,491.29	5,204,470	5,533,508	5,225,976	36.14	144,604
1983	1,718,120.70	1,462,375	1,554,830	1,537,787	36.90	41,674

KENTUCKY UTILITIES COMPANY

ACCOUNT 356 OVERHEAD CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R2.5						
NET SALVAGE PERCENT.. -80						
1984	7,296,373.11	6,063,855	6,447,226	6,686,246	37.68	177,448
1985	3,605,617.98	2,925,159	3,110,094	3,380,018	38.45	87,907
1986	4,988,193.94	3,945,532	4,194,978	4,783,771	39.24	121,911
1987	8,014,386.83	6,176,303	6,566,783	7,859,113	40.03	196,331
1988	1,568,756.12	1,176,689	1,251,082	1,572,679	40.83	38,518
1989	791,335.35	577,297	613,795	810,609	41.63	19,472
1990	1,206,192.03	854,802	908,845	1,262,301	42.44	29,743
1991	750,328.99	515,926	548,544	802,048	43.26	18,540
1992	1,994,434.17	1,329,334	1,413,377	2,176,605	44.08	49,379
1993	299,183.19	193,025	205,228	333,302	44.91	7,422
1994	1,164,720.75	726,583	772,519	1,323,978	45.74	28,946
1995	2,770,247.13	1,668,315	1,773,790	3,212,655	46.58	68,971
1996	2,040,099.63	1,184,535	1,259,424	2,412,755	47.42	50,881
1997	999,443.25	558,463	593,770	1,205,228	48.27	24,968
1998	1,558,351.41	836,292	889,164	1,915,869	49.13	38,996
1999	1,476,154.81	759,553	807,574	1,849,505	49.99	36,997
2000	1,763,245.41	867,824	922,690	2,251,152	50.86	44,262
2001	2,868,191.61	1,347,476	1,432,667	3,730,078	51.73	72,107
2002	639,035.77	285,921	303,998	846,266	52.60	16,089
2003	4,248,330.54	1,804,691	1,918,788	5,728,207	53.48	107,109
2004	829,746.18	333,493	354,577	1,138,966	54.37	20,948
2005	2,706,989.08	1,026,019	1,090,886	3,781,694	55.26	68,435
2006	1,385,337.36	493,385	524,578	1,969,029	56.15	35,067
2007	2,773,280.45	923,502	981,888	4,010,017	57.05	70,290
2008	789,582.48	244,654	260,122	1,161,126	57.95	20,037
2009	4,808,959.71	1,377,536	1,464,627	7,191,500	58.86	122,180
2010	6,435,930.58	1,692,984	1,800,018	9,784,657	59.77	163,705
2011	3,652,641.29	875,363	930,705	5,644,049	60.68	93,013
2012	11,534,373.60	2,491,425	2,648,938	18,112,934	61.60	294,041
2013	4,568,583.52	878,758	934,315	7,289,135	62.52	116,589
2014	3,972,652.46	669,098	711,400	6,439,374	63.45	101,487
2015	7,533,976.60	1,090,724	1,159,682	12,401,476	64.37	192,659
2016	6,448,162.09	779,273	828,540	10,778,152	65.30	165,056
2017	8,167,641.08	789,631	839,553	13,862,201	66.24	209,272
2018	10,195,119.41	741,940	788,847	17,562,368	67.17	261,461
2019	17,787,486.97	864,472	919,126	31,098,351	68.11	456,590
2020	32,432,460.40	984,260	1,046,488	57,331,941	68.82	833,071
2021	19,001,795.42		0	34,203,232	70.00	488,618
	260,804,790.04	117,978,344	125,437,207	344,011,415		6,481,042

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 53.1 2.49

KENTUCKY UTILITIES COMPANY

ACCOUNT 357 UNDERGROUND CONDUIT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 55-R4						
NET SALVAGE PERCENT.. 0						
1962	16,102.50	14,229	16,102			
1969	629.49	520	597	32	9.58	3
1972	1,023.52	812	932	92	11.36	8
1973	3,487.24	2,726	3,130	357	12.01	30
1974	1,183.38	911	1,046	137	12.67	11
1980	26,278.29	18,204	20,901	5,377	16.90	318
1984	275.00	175	201	74	20.00	4
1997	318,959.12	136,862	157,141	161,818	31.40	5,153
1998	449.82	185	212	238	32.35	7
1999	702.00	277	318	384	33.30	12
2002	3,451.41	1,181	1,356	2,095	36.18	58
2003	12,833.46	4,165	4,782	8,051	37.15	217
2019	233,118.58	8,476	9,733	223,386	53.00	4,215
	618,493.81	188,723	216,451	402,043		10,036
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						40.1 1.62

KENTUCKY UTILITIES COMPANY

ACCOUNT 358 UNDERGROUND CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R2.5						
NET SALVAGE PERCENT.. -5						
1962	12,651.57	11,026	13,284			
1969	0.10					
1972	15,875.19	12,532	16,669			
1973	78,405.34	61,086	82,326			
1974	136,383.31	104,824	143,202			
1980	204,862.86	143,002	206,344	8,762	16.76	523
1982	13,871.63	9,322	13,451	1,114	18.00	62
1984	2,212.12	1,426	2,058	265	19.30	14
1988	123,767.49	72,671	104,860	25,096	22.04	1,139
1992	116,241.28	61,149	88,235	33,818	24.95	1,355
1997	312,256.88	138,886	200,404	127,466	28.82	4,423
2015	13,724.66	1,617	2,333	12,078	44.39	272
2016	7,549.41	742	1,071	6,856	45.32	151
2017	174,934.62	13,776	19,878	163,803	46.25	3,542
2018	3,167.77	188	271	3,055	47.18	65
2019	16,764.25	662	955	16,647	48.12	346
2020	74,197.42	1,839	2,654	75,253	48.82	1,541
	1,306,865.90	634,748	897,995	474,214		13,433
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						35.3 1.03

KENTUCKY UTILITIES COMPANY

ACCOUNT 360.1 LAND RIGHTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 75-R4						
NET SALVAGE PERCENT.. 0						
1941	373,772.94	329,470	373,773			
1942	41,173.38	36,084	41,173			
1943	911.00	794	911			
1944	850.00	736	850			
1945	2,100.00	1,805	2,100			
1946	3,262.00	2,784	3,262			
1947	4,434.00	3,757	4,434			
1948	3,258.00	2,739	3,258			
1949	4,314.00	3,597	4,314			
1950	59,904.00	49,512	59,904			
1951	18,663.00	15,284	18,663			
1952	27,550.00	22,349	27,550			
1953	33,233.00	26,693	33,233			
1954	24,267.00	19,291	24,267			
1955	40,298.35	31,691	40,298			
1956	21,633.00	16,825	21,633			
1957	19,771.00	15,203	19,771			
1958	27,040.00	20,547	27,040			
1959	19,357.00	14,533	19,357			
1960	33,627.00	24,938	33,627			
1961	18,106.00	13,258	18,066	40	20.08	2
1962	10,562.32	7,634	10,403	159	20.79	8
1963	21,516.00	15,345	20,910	606	21.51	28
1964	20,398.00	14,349	19,553	845	22.24	38
1965	35,563.00	24,666	33,612	1,951	22.98	85
1966	5,187.00	3,546	4,832	355	23.73	15
1967	19,695.00	13,264	18,075	1,620	24.49	66
1968	15,350.00	10,180	13,872	1,478	25.26	59
1969	41,542.00	27,119	36,955	4,587	26.04	176
1970	24,874.00	15,976	21,770	3,104	26.83	116
1971	46,508.00	29,374	40,027	6,481	27.63	235
1972	16,301.00	10,120	13,790	2,511	28.44	88
1973	8,970.00	5,471	7,455	1,515	29.26	52
1974	43,465.00	26,027	35,467	7,998	30.09	266
1975	27,337.00	16,063	21,889	5,448	30.93	176
1976	6,205.00	3,576	4,873	1,332	31.78	42
1977	15,472.00	8,741	11,911	3,561	32.63	109
1978	17,820.00	9,860	13,436	4,384	33.50	131
1979	31,886.00	17,274	23,539	8,347	34.37	243
1980	10,670.00	5,654	7,705	2,965	35.26	84
1981	1,808.00	937	1,277	531	36.15	15
1982	61,168.00	30,959	42,187	18,981	37.04	512
1984	14,670.00	7,069	9,633	5,037	38.86	130

KENTUCKY UTILITIES COMPANY

ACCOUNT 360.1 LAND RIGHTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 75-R4						
NET SALVAGE PERCENT.. 0						
1985	33,531.00	15,746	21,457	12,074	39.78	304
1986	779.00	356	485	294	40.70	7
1987	16,266.00	7,237	9,862	6,404	41.63	154
1988	4,886.00	2,113	2,879	2,007	42.57	47
1989	7,350.00	3,086	4,205	3,145	43.51	72
1990	38,364.00	15,627	21,295	17,069	44.45	384
1991	12,981.00	5,121	6,978	6,003	45.41	132
1992	5,140.00	1,963	2,675	2,465	46.36	53
1993	38,715.00	14,289	19,471	19,244	47.32	407
1994	23,233.00	8,277	11,279	11,954	48.28	248
1995	54,744.00	18,795	25,612	29,132	49.25	592
1996	143,362.00	47,367	64,546	78,816	50.22	1,569
1997	100,670.04	31,960	43,551	57,119	51.19	1,116
1998	11,034.00	3,359	4,577	6,457	52.17	124
1999	28,534.63	8,313	11,328	17,207	53.15	324
2000	5,450.00	1,517	2,067	3,383	54.13	62
2001	1,400.00	371	506	894	55.11	16
2003	113.00	27	37	76	57.08	1
2004	74,362.56	16,786	22,874	51,489	58.07	887
2009	58,265.05	9,299	12,671	45,594	63.03	723
2010	3,796.63	555	756	3,041	64.03	47
2011	22,282.80	2,965	4,040	18,243	65.02	281
2012	209,177.61	25,045	34,129	175,049	66.02	2,651
2018	332,578.34	13,303	18,128	314,450	72.00	4,367
2019	112,237.46	2,993	4,078	108,159	73.00	1,482
	2,613,745.11	1,211,564	1,540,141	1,073,604		18,726

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 57.3 0.72

KENTUCKY UTILITIES COMPANY

ACCOUNT 361 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 65-R2.5						
NET SALVAGE PERCENT.. -30						
1940	238.90	264	250	61	9.78	6
1941	179.74	197	187	47	10.06	5
1945	56.00	60	57	16	11.27	1
1946	11,183.46	11,944	11,319	3,219	11.60	278
1947	3,738.15	3,968	3,760	1,100	11.93	92
1948	2,742.00	2,891	2,740	825	12.28	67
1949	5,131.61	5,374	5,093	1,578	12.64	125
1950	13,026.82	13,543	12,834	4,101	13.02	315
1951	5,204.70	5,371	5,090	1,676	13.40	125
1952	5,288.48	5,415	5,132	1,743	13.80	126
1953	202.30	205	194	69	14.22	5
1954	14,624.23	14,730	13,959	5,052	14.64	345
1955	19,557.90	19,527	18,505	6,920	15.08	459
1956	16,594.33	16,418	15,559	6,014	15.53	387
1957	8,224.13	8,060	7,638	3,053	16.00	191
1958	26,992.10	26,193	24,822	10,268	16.48	623
1959	10,488.79	10,075	9,548	4,087	16.97	241
1960	15,518.58	14,752	13,980	6,194	17.47	355
1961	15,306.26	14,391	13,638	6,260	17.99	348
1962	27,371.02	25,439	24,107	11,475	18.53	619
1963	38,582.42	35,442	33,587	16,570	19.07	869
1964	33,611.41	30,499	28,902	14,793	19.63	754
1965	25,015.32	22,414	21,241	11,279	20.20	558
1966	20,756.17	18,357	17,396	9,587	20.78	461
1967	28,435.31	24,813	23,514	13,452	21.37	629
1968	36,678.15	31,565	29,913	17,769	21.97	809
1969	43,291.42	36,720	34,798	21,481	22.59	951
1970	9,774.54	8,170	7,742	4,965	23.21	214
1971	76,564.90	63,013	59,714	39,820	23.85	1,670
1972	42,530.14	34,450	32,647	22,642	24.50	924
1973	51,894.33	41,360	39,195	28,268	25.15	1,124
1974	63,345.57	49,638	47,040	35,309	25.82	1,368
1975	45,941.46	35,384	33,532	26,192	26.49	989
1976	25,593.90	19,359	18,346	14,926	27.18	549
1977	65,877.24	48,920	46,359	39,281	27.87	1,409
1978	67,478.67	49,152	46,579	41,143	28.58	1,440
1979	86,978.46	62,119	58,867	54,205	29.29	1,851
1980	158,265.95	110,755	104,957	100,789	30.01	3,359
1981	59,832.39	41,009	38,862	38,920	30.73	1,267
1982	100,305.74	67,266	63,745	66,652	31.47	2,118
1983	13,444.28	8,817	8,355	9,123	32.21	283
1984	53,018.93	33,974	32,195	36,730	32.96	1,114
1985	8,631.87	5,400	5,117	6,104	33.72	181

KENTUCKY UTILITIES COMPANY

ACCOUNT 361 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 65-R2.5						
NET SALVAGE PERCENT.. -30						
1986	45,921.92	28,021	26,554	33,144	34.49	961
1987	84,574.47	50,305	47,672	62,275	35.26	1,766
1988	9,583.49	5,551	5,260	7,199	36.04	200
1989	20,853.45	11,749	11,134	15,975	36.83	434
1990	89,521.00	49,004	46,439	69,938	37.63	1,859
1991	232,064.00	123,319	116,863	184,820	38.43	4,809
1992	132,814.10	68,452	64,869	107,789	39.23	2,748
1993	45,318.28	22,614	21,430	37,484	40.05	936
1994	556,395.85	268,516	254,460	468,855	40.87	11,472
1995	32,964.50	15,361	14,557	28,297	41.70	679
1997	163,072.85	70,545	66,852	145,143	43.37	3,347
1998	81,276.93	33,778	32,010	73,650	44.22	1,666
2000	66,743.00	25,455	24,122	62,644	45.93	1,364
2001	269,124.29	98,014	92,883	256,979	46.79	5,492
2002	130,214.83	45,159	42,795	126,484	47.66	2,654
2003	211,428.85	69,643	65,997	208,861	48.53	4,304
2004	15,786.36	4,922	4,664	15,858	49.41	321
2005	134,777.18	39,624	37,550	137,660	50.30	2,737
2006	137,673.95	38,054	36,062	142,914	51.18	2,792
2007	605,523.71	156,468	148,277	638,904	52.08	12,268
2008	39,332.05	9,455	8,960	42,172	52.98	796
2009	376,899.45	83,824	79,436	410,533	53.88	7,619
2010	1,748,743.89	357,442	338,730	1,934,637	54.78	35,316
2011	576,362.90	107,206	101,594	647,678	55.70	11,628
2012	736,752.19	123,630	117,158	840,620	56.61	14,849
2013	793,055.08	118,479	112,277	918,695	57.53	15,969
2014	1,127,037.24	147,643	139,914	1,325,234	58.45	22,673
2015	491,972.42	55,297	52,402	587,162	59.38	9,888
2016	2,861,063.14	268,353	254,305	3,465,077	60.31	57,454
2017	438,626.31	32,987	31,260	538,954	61.24	8,801
2018	1,234,415.41	69,870	66,213	1,538,527	62.17	24,747
2019	8,738,149.35	330,337	313,044	11,046,550	63.11	175,036
2020	3,442,784.69	81,233	76,981	4,398,639	63.82	68,923
2021	3,273,283.96			4,255,269	65.00	65,466
	30,301,629.16	4,087,723	3,873,739	35,518,379		611,578
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						58.1 2.02

KENTUCKY UTILITIES COMPANY

ACCOUNT 362 STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 57-R1.5						
NET SALVAGE PERCENT.. -20						
1930	15,315.27	16,250	16,640	1,738	6.60	263
1931	720.76	761	779	86	6.86	13
1937	2,921.64	2,982	3,054	452	8.52	53
1939	7,392.30	7,455	7,634	1,237	9.10	136
1940	16,791.47	16,830	17,234	2,916	9.39	311
1941	26,495.10	26,389	27,023	4,771	9.69	492
1942	5,995.89	5,933	6,075	1,120	10.00	112
1943	3,756.74	3,693	3,782	726	10.31	70
1944	6,387.02	6,236	6,386	1,278	10.62	120
1945	21,895.53	21,232	21,742	4,533	10.94	414
1946	8,399.90	8,089	8,283	1,797	11.26	160
1947	28,457.93	27,206	27,859	6,291	11.59	543
1948	116,531.45	110,570	113,225	26,613	11.93	2,231
1949	127,769.99	120,319	123,208	30,116	12.27	2,454
1950	91,171.22	85,202	87,248	22,157	12.61	1,757
1951	44,559.35	41,304	42,296	11,175	12.97	862
1952	212,268.94	195,153	199,839	54,884	13.33	4,117
1953	228,230.77	208,051	213,046	60,831	13.70	4,440
1954	347,164.51	313,690	321,222	95,375	14.08	6,774
1955	243,264.79	217,864	223,095	68,823	14.46	4,760
1956	518,021.37	459,568	470,602	151,024	14.86	10,163
1957	163,754.99	143,897	147,352	49,154	15.26	3,221
1958	315,168.07	274,230	280,814	97,388	15.67	6,215
1959	163,579.97	140,886	144,269	52,027	16.09	3,233
1960	309,955.59	264,149	270,491	101,456	16.52	6,141
1961	413,643.73	348,682	357,054	139,318	16.96	8,215
1962	621,250.20	517,929	530,365	215,135	17.40	12,364
1963	635,081.40	523,310	535,875	226,223	17.86	12,666
1964	511,551.81	416,567	426,569	187,293	18.32	10,223
1965	692,448.69	556,878	570,249	260,689	18.80	13,866
1966	654,299.29	519,579	532,054	253,105	19.28	13,128
1967	581,327.04	455,639	466,579	231,013	19.77	11,685
1968	765,430.77	591,718	605,925	312,592	20.28	15,414
1969	1,260,872.01	961,178	984,256	528,790	20.79	25,435
1970	356,804.39	268,091	274,528	153,637	21.31	7,210
1971	1,016,001.91	752,053	770,110	449,092	21.84	20,563
1972	804,137.88	586,255	600,331	364,634	22.37	16,300
1973	1,226,529.26	879,995	901,124	570,711	22.92	24,900
1974	1,229,521.92	867,654	888,487	586,939	23.48	24,997
1975	904,881.30	627,897	642,973	442,885	24.04	18,423
1976	868,884.80	592,493	606,719	435,943	24.61	17,714
1977	1,281,181.66	857,710	878,304	659,114	25.20	26,155
1978	1,612,442.81	1,059,452	1,084,890	850,041	25.79	32,960

KENTUCKY UTILITIES COMPANY

ACCOUNT 362 STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 57-R1.5						
NET SALVAGE PERCENT.. -20						
1979	217,876.37	140,449	143,821	117,631	26.38	4,459
1980	2,156,794.96	1,362,637	1,395,354	1,192,800	26.99	44,194
1981	1,839,637.09	1,138,640	1,165,979	1,041,586	27.60	37,739
1982	1,803,111.85	1,092,123	1,118,345	1,045,389	28.23	37,031
1983	900,796.26	533,841	546,659	534,297	28.85	18,520
1984	2,056,771.53	1,191,192	1,219,793	1,248,333	29.49	42,331
1985	312,184.90	176,533	180,772	193,850	30.14	6,432
1986	1,309,003.03	722,287	739,629	831,175	30.79	26,995
1987	3,182,970.66	1,712,120	1,753,229	2,066,336	31.45	65,702
1988	174,083.65	91,221	93,411	115,489	32.11	3,597
1989	2,313,830.72	1,179,804	1,208,131	1,568,466	32.78	47,848
1990	1,474,746.07	730,849	748,397	1,021,298	33.46	30,523
1991	3,192,524.52	1,535,783	1,572,658	2,258,371	34.15	66,131
1992	4,499,319.93	2,099,041	2,149,440	3,249,744	34.84	93,276
1993	1,659,487.97	749,737	767,738	1,223,648	35.54	34,430
1994	5,586,768.14	2,441,708	2,500,334	4,203,788	36.24	115,999
1995	3,184,300.46	1,344,093	1,376,365	2,444,796	36.95	66,165
1996	319,938.83	130,266	133,394	250,533	37.66	6,652
1997	5,583,867.37	2,188,898	2,241,454	4,459,187	38.38	116,185
1998	4,600,489.06	1,732,691	1,774,294	3,746,293	39.11	95,789
1999	2,133,190.29	770,636	789,139	1,770,689	39.84	44,445
2000	1,086,833.42	375,936	384,962	919,238	40.57	22,658
2001	6,278,579.71	2,073,890	2,123,685	5,410,611	41.31	130,976
2002	4,158,272.16	1,307,910	1,339,313	3,650,614	42.06	86,795
2003	4,299,322.52	1,284,380	1,315,218	3,843,969	42.81	89,791
2004	835,511.12	236,406	242,082	760,531	43.56	17,459
2005	3,363,641.65	897,931	919,491	3,116,879	44.32	70,327
2006	2,218,200.43	556,644	570,009	2,091,832	45.08	46,403
2007	1,942,300.43	456,340	467,297	1,863,464	45.84	40,651
2008	584,206.70	127,787	130,855	570,193	46.61	12,233
2009	13,535,248.96	2,738,452	2,804,203	13,438,096	47.39	283,564
2010	16,180,296.54	3,007,788	3,080,006	16,336,350	48.17	339,140
2011	7,081,959.99	1,200,222	1,229,040	7,269,312	48.95	148,505
2012	10,035,996.21	1,533,942	1,570,773	10,472,422	49.74	210,543
2013	10,308,863.41	1,404,191	1,437,906	10,932,730	50.53	216,361
2014	10,835,399.69	1,295,697	1,326,807	11,675,673	51.32	227,507
2015	7,078,048.43	727,142	744,601	7,749,057	52.12	148,677
2016	13,127,846.39	1,127,629	1,154,704	14,598,712	52.92	275,864
2017	16,162,486.23	1,112,690	1,139,406	18,255,577	53.73	339,765
2018	30,512,649.90	1,580,311	1,618,255	34,996,925	54.54	641,674

KENTUCKY UTILITIES COMPANY

ACCOUNT 362 STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 57-R1.5						
NET SALVAGE PERCENT.. -20						
2019	19,756,679.02	682,080	698,457	23,009,558	55.36	415,635
2020	43,630,931.51	946,093	968,809	51,388,309	55.97	918,140
2021	10,360,829.79		0	12,432,996	57.00	218,123
	300,338,059.30	61,839,029	63,323,805	297,081,866		6,276,507
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						47.3 2.09

KENTUCKY UTILITIES COMPANY

ACCOUNT 364 POLES, TOWERS AND FIXTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 54-R1.5						
NET SALVAGE PERCENT.. -50						
1941	16,840.07	21,541	25,260			
1943	1,261.63	1,594	1,892			
1944	5,543.36	6,957	8,315			
1945	31,750.94	39,583	47,626			
1946	55,146.24	68,290	82,256	463	9.42	49
1947	119,412.48	146,843	176,873	2,246	9.73	231
1948	130,887.79	159,828	192,514	3,818	10.04	380
1949	208,467.52	252,710	304,390	8,311	10.36	802
1950	382,946.12	460,707	554,924	19,495	10.69	1,824
1951	350,338.01	418,267	503,804	21,703	11.02	1,969
1952	365,727.68	433,283	521,891	26,701	11.35	2,353
1953	125,499.03	147,496	177,660	10,589	11.69	906
1954	36,352.08	42,371	51,036	3,492	12.04	290
1955	211,657.55	244,582	294,600	22,886	12.40	1,846
1956	337,794.77	386,961	466,096	40,596	12.76	3,182
1957	474,750.93	538,845	649,041	63,085	13.14	4,801
1958	329,108.81	370,065	445,745	47,918	13.52	3,544
1959	446,553.61	497,289	598,987	70,843	13.91	5,093
1960	133,542.78	147,231	177,340	22,974	14.31	1,605
1961	525,872.62	573,788	691,130	97,679	14.72	6,636
1962	476,088.48	514,040	619,163	94,970	15.13	6,277
1963	647,575.06	691,464	832,871	138,492	15.56	8,901
1964	785,440.24	829,295	998,889	179,271	15.99	11,211
1965	803,054.89	837,859	1,009,205	195,377	16.44	11,884
1966	886,950.55	914,295	1,101,272	229,154	16.89	13,567
1967	867,447.79	882,871	1,063,422	237,750	17.36	13,695
1968	1,005,050.99	1,009,790	1,216,296	291,280	17.83	16,337
1969	1,122,009.12	1,112,034	1,339,450	343,564	18.32	18,753
1970	790,280.58	772,503	930,483	254,938	18.81	13,553
1971	1,329,735.02	1,280,974	1,542,939	451,664	19.32	23,378
1972	1,161,325.31	1,102,295	1,327,719	414,269	19.83	20,891
1973	1,765,496.27	1,650,254	1,987,738	660,506	20.35	32,457
1974	1,725,901.62	1,587,821	1,912,537	676,315	20.88	32,391
1975	1,356,070.60	1,226,871	1,477,771	556,335	21.43	25,961
1976	1,618,492.15	1,439,552	1,733,947	693,791	21.98	31,565
1977	1,718,801.33	1,502,035	1,809,208	768,994	22.54	34,117
1978	1,773,065.53	1,521,397	1,832,529	827,069	23.11	35,788
1979	2,434,547.96	2,050,425	2,469,746	1,182,076	23.68	49,919
1980	2,522,340.00	2,083,049	2,509,042	1,274,468	24.27	52,512
1981	2,767,128.67	2,239,050	2,696,945	1,453,748	24.87	58,454
1982	3,078,031.97	2,439,325	2,938,178	1,678,870	25.47	65,916
1983	3,543,121.50	2,746,894	3,308,646	2,006,036	26.09	76,889
1984	2,902,011.32	2,199,884	2,649,770	1,703,247	26.71	63,768

KENTUCKY UTILITIES COMPANY

ACCOUNT 364 POLES, TOWERS AND FIXTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 54-R1.5						
NET SALVAGE PERCENT.. -50						
1985	3,255,015.71	2,410,502	2,903,460	1,979,064	27.34	72,387
1986	4,299,114.77	3,108,518	3,744,223	2,704,449	27.97	96,691
1987	4,416,251.96	3,113,458	3,750,174	2,874,204	28.62	100,426
1988	4,673,698.73	3,210,551	3,867,123	3,143,425	29.27	107,394
1989	4,957,346.51	3,314,531	3,992,367	3,443,653	29.93	115,057
1990	4,994,120.63	3,246,153	3,910,005	3,581,176	30.60	117,032
1991	5,000,251.82	3,157,134	3,802,782	3,697,596	31.27	118,247
1992	6,408,141.43	3,924,955	4,727,625	4,884,587	31.95	152,882
1993	6,386,700.74	3,789,485	4,564,451	5,015,600	32.64	153,664
1994	8,064,432.23	4,630,355	5,577,283	6,519,365	33.33	195,601
1995	8,751,536.47	4,852,246	5,844,551	7,282,754	34.04	213,947
1996	7,622,169.09	4,077,899	4,911,847	6,521,407	34.74	187,720
1997	8,586,568.53	4,422,040	5,326,366	7,553,487	35.46	213,014
1998	7,498,943.77	3,714,114	4,473,666	6,774,750	36.17	187,303
1999	7,339,751.39	3,486,419	4,199,407	6,810,220	36.90	184,559
2000	6,883,333.15	3,130,024	3,770,127	6,554,873	37.63	174,193
2001	6,114,588.70	2,656,452	3,199,708	5,972,175	38.36	155,688
2002	7,103,017.11	2,939,903	3,541,126	7,113,400	39.10	181,928
2003	10,227,774.62	4,022,891	4,845,590	10,496,072	39.84	263,456
2004	4,221,976.65	1,572,665	1,894,282	4,438,683	40.59	109,354
2005	4,951,810.65	1,740,017	2,095,858	5,331,858	41.35	128,945
2006	6,258,571.97	2,068,802	2,491,881	6,895,977	42.10	163,800
2007	4,046,892.89	1,251,158	1,507,025	4,563,314	42.87	106,445
2008	23,216,577.02	6,687,767	8,055,444	26,769,422	43.63	613,555
2009	32,851,470.64	8,751,139	10,540,785	38,736,421	44.41	872,245
2010	14,910,042.61	3,652,886	4,399,917	17,965,147	45.18	397,635
2011	14,597,926.23	3,260,228	3,926,959	17,969,930	45.96	390,991
2012	24,016,100.20	4,836,602	5,825,708	30,198,442	46.75	645,956
2013	16,470,486.59	2,959,993	3,565,324	21,140,406	47.53	444,780
2014	30,624,835.36	4,823,412	5,809,821	40,127,432	48.33	830,280
2015	44,394,111.07	6,005,857	7,234,080	59,357,087	49.13	1,208,164
2016	8,834,578.52	998,793	1,203,051	12,048,817	49.93	241,314
2017	4,143,771.33	376,420	453,399	5,762,258	50.73	113,587
2018	17,299,147.44	1,182,224	1,423,994	24,524,727	51.54	475,839
2019	26,814,015.19	1,221,512	1,471,317	38,749,706	52.36	740,063
2020	26,625,760.72	761,630	917,386	39,021,255	52.97	736,667
2021	10,074,649.36		0	15,111,974	54.00	279,851
	478,304,902.77	156,950,943	189,047,258	528,410,096		12,244,355

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 43.2 2.56

KENTUCKY UTILITIES COMPANY

ACCOUNT 365 OVERHEAD CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R1						
NET SALVAGE PERCENT.. -30						
1941	41,584.48	49,987	42,184	11,876	3.39	3,503
1942	8,382.52	10,004	8,442	2,455	3.69	665
1943	3,530.33	4,182	3,529	1,060	3.99	266
1944	196.26	231	195	60	4.28	14
1946	37,205.41	43,111	36,382	11,985	4.89	2,451
1947	50,075.13	57,575	48,588	16,510	5.20	3,175
1948	118,716.21	135,435	114,294	40,037	5.51	7,266
1949	159,132.66	180,118	152,002	54,870	5.82	9,428
1950	149,861.00	168,193	141,939	52,880	6.15	8,598
1951	122,143.63	135,956	114,734	44,053	6.47	6,809
1952	174,559.08	192,636	162,566	64,361	6.80	9,465
1953	114,420.34	125,145	105,610	43,136	7.14	6,041
1954	154,786.25	167,775	141,586	59,636	7.48	7,973
1955	206,737.58	221,995	187,343	81,416	7.83	10,398
1956	252,465.56	268,544	226,626	101,579	8.18	12,418
1957	265,414.70	279,558	235,920	109,119	8.54	12,777
1958	307,789.33	320,989	270,884	129,242	8.90	14,522
1959	275,109.53	283,968	239,642	118,000	9.27	12,729
1960	252,596.32	257,958	217,692	110,683	9.65	11,470
1961	369,407.14	373,191	314,938	165,291	10.03	16,480
1962	442,043.08	441,589	372,659	201,997	10.42	19,386
1963	643,149.13	635,247	536,088	300,006	10.81	27,753
1964	730,451.91	713,036	601,735	347,852	11.21	31,031
1965	982,857.31	948,064	800,076	477,639	11.61	41,140
1966	806,028.75	767,719	647,882	399,955	12.03	33,246
1967	921,685.48	866,688	731,402	466,789	12.45	37,493
1968	1,186,912.72	1,101,692	929,723	613,264	12.87	47,651
1969	1,281,850.69	1,173,883	990,646	675,760	13.30	50,809
1970	986,657.07	891,021	751,937	530,717	13.74	38,626
1971	1,799,575.00	1,601,750	1,351,725	987,722	14.19	69,607
1972	1,430,514.22	1,254,663	1,058,816	800,852	14.64	54,703
1973	1,646,025.55	1,421,791	1,199,857	939,976	15.10	62,250
1974	2,132,534.17	1,813,081	1,530,068	1,242,226	15.57	79,783
1975	1,401,007.66	1,172,122	989,160	832,150	16.04	51,880
1976	1,423,602.19	1,170,872	988,105	862,578	16.53	52,183
1977	2,011,541.02	1,625,957	1,372,153	1,242,850	17.02	73,023
1978	2,410,280.31	1,914,141	1,615,353	1,518,011	17.51	86,694
1979	2,872,322.60	2,238,769	1,889,308	1,844,711	18.02	102,370
1980	2,745,522.59	2,099,463	1,771,747	1,797,432	18.53	97,001
1981	2,615,299.48	1,960,614	1,654,572	1,745,317	19.05	91,618
1982	2,755,367.01	2,023,423	1,707,577	1,874,400	19.58	95,730
1983	2,918,820.50	2,097,923	1,770,448	2,024,019	20.12	100,597
1984	2,603,974.38	1,831,003	1,545,193	1,839,974	20.66	89,060

KENTUCKY UTILITIES COMPANY

ACCOUNT 365 OVERHEAD CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R1						
NET SALVAGE PERCENT.. -30						
1985	2,333,423.55	1,603,694	1,353,365	1,680,086	21.21	79,212
1986	3,268,253.63	2,193,279	1,850,919	2,397,811	21.77	110,143
1987	3,657,388.32	2,394,229	2,020,502	2,734,103	22.34	122,386
1988	4,182,970.96	2,669,392	2,252,713	3,185,149	22.91	139,029
1989	5,363,483.96	3,332,869	2,812,625	4,159,904	23.49	177,093
1990	4,616,572.52	2,790,058	2,354,544	3,647,000	24.08	151,453
1991	4,226,267.09	2,480,937	2,093,675	3,400,472	24.68	137,782
1992	4,933,056.41	2,810,293	2,371,620	4,041,353	25.28	159,864
1993	4,549,535.78	2,510,306	2,118,460	3,795,937	25.90	146,561
1994	5,817,332.04	3,107,369	2,622,324	4,940,208	26.51	186,353
1995	7,097,698.00	3,662,107	3,090,470	6,136,537	27.14	226,107
1996	6,150,063.80	3,061,237	2,583,393	5,411,690	27.77	194,875
1997	6,138,738.67	2,943,875	2,484,351	5,496,009	28.40	193,521
1998	4,900,442.17	2,257,987	1,905,527	4,465,048	29.05	153,702
1999	5,358,420.53	2,368,422	1,998,723	4,967,224	29.70	167,247
2000	4,316,068.83	1,826,681	1,541,545	4,069,344	30.35	134,081
2001	8,936,367.06	3,611,695	3,047,928	8,569,349	31.01	276,341
2002	5,554,081.40	2,138,799	1,804,943	5,415,363	31.67	170,993
2003	2,955,535.46	1,080,925	912,198	2,929,998	32.34	90,600
2004	6,244,199.21	2,162,816	1,825,211	6,292,248	33.01	190,616
2005	2,199,622.03	719,338	607,053	2,252,456	33.68	66,878
2006	4,031,581.90	1,239,195	1,045,763	4,195,293	34.36	122,098
2007	4,046,190.02	1,164,206	982,479	4,277,568	35.04	122,077
2008	19,975,862.81	5,349,536	4,514,500	21,454,122	35.73	600,451
2009	39,555,979.96	9,804,780	8,274,303	43,148,471	36.42	1,184,747
2010	9,963,161.25	2,270,893	1,916,418	11,035,692	37.11	297,378
2011	9,998,220.50	2,076,770	1,752,597	11,245,090	37.81	297,410
2012	16,348,552.00	3,065,125	2,586,674	18,666,444	38.51	484,717
2013	10,983,343.22	1,837,195	1,550,418	12,727,928	39.21	324,609
2014	31,556,904.81	4,631,197	3,908,291	37,115,685	39.92	929,752
2015	45,200,062.53	5,706,191	4,815,483	53,944,598	40.63	1,327,704
2016	8,920,563.77	940,611	793,786	10,802,947	41.35	261,256
2017	48,933,073.63	4,141,842	3,495,322	60,117,674	42.07	1,428,992
2018	14,216,870.80	907,648	765,969	17,715,963	42.79	414,021
2019	22,552,468.36	964,276	813,757	28,504,452	43.52	654,974
2020	47,097,206.48	1,265,549	1,068,003	60,158,365	44.07	1,365,064
2021	16,787,895.02		0	21,824,263	45.00	484,984
	494,779,594.76	132,132,384	111,507,178	531,706,295		15,165,153
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						35.1 3.07

KENTUCKY UTILITIES COMPANY

ACCOUNT 366 UNDERGROUND CONDUIT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R4						
NET SALVAGE PERCENT.. -5						
1966	2,177.50	2,042	1,906	380	5.34	71
1967	2,766.65	2,574	2,402	503	5.69	88
1968	929.40	858	801	175	6.06	29
1973	23,444.43	20,525	19,155	5,462	8.31	657
1974	276,752.56	239,098	223,140	67,450	8.86	7,613
1976	18,053.00	15,146	14,135	4,821	10.05	480
1979	407,636.17	325,294	303,583	124,435	12.00	10,370
1980	218,176.00	170,943	159,534	69,551	12.69	5,481
1981	14.49	11	10	5	13.39	
1982	64,154.00	48,366	45,138	22,224	14.10	1,576
1983	61,681.09	45,556	42,516	22,249	14.83	1,500
1986	43,609.11	30,130	28,119	17,671	17.10	1,033
1987	65,783.41	44,358	41,397	27,676	17.89	1,547
1989	19,565.13	12,527	11,691	8,852	19.51	454
1995	104,460.14	55,522	51,816	57,867	24.69	2,344
1998	5,030.12	2,383	2,224	3,058	27.44	111
2001	2,842.29	1,178	1,099	1,885	30.27	62
2003	124,484.16	46,558	43,451	87,257	32.19	2,711
2004	44,864.57	15,866	14,807	32,301	33.16	974
2005	26,268.24	8,754	8,170	19,412	34.13	569
2008	3,628.46	985	919	2,891	37.07	78
2009	31,742.19	7,959	7,428	25,901	38.06	681
2010	96,925.23	22,308	20,819	80,952	39.04	2,074
2011	52,912.65	11,078	10,339	45,219	40.03	1,130
2012	53,587.63	10,094	9,420	46,847	41.03	1,142
2013	8,879.44	1,488	1,389	7,934	42.02	189
2014	252,131.62	36,957	34,491	230,247	43.02	5,352
2015	216,560.25	27,241	25,423	201,965	44.01	4,589
2016	207,381.25	21,731	20,280	197,470	45.01	4,387
2018	5,787.81	365	341	5,736	47.00	122
2019	81,228.27	3,412	3,184	82,106	48.00	1,711
2020	687.26	18	17	705	48.75	14
	2,524,144.52	1,231,325	1,149,144	1,501,208		59,139

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 25.4 2.34

KENTUCKY UTILITIES COMPANY

ACCOUNT 367 UNDERGROUND CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R2.5						
NET SALVAGE PERCENT.. -10						
1967	613.74	565	562	113	7.37	15
1968	10,548.33	9,623	9,580	2,023	7.68	263
1970	17,506.90	15,689	15,619	3,639	8.34	436
1971	11,528.70	10,230	10,184	2,498	8.70	287
1972	90,165.27	79,191	78,838	20,344	9.07	2,243
1973	46,849.14	40,701	40,520	11,014	9.46	1,164
1974	267,511.23	229,722	228,699	65,563	9.87	6,643
1975	220,588.27	187,108	186,274	56,373	10.30	5,473
1976	239,194.56	200,259	199,367	63,747	10.75	5,930
1977	175,099.71	144,586	143,942	48,668	11.22	4,338
1978	256,923.30	209,073	208,142	74,474	11.71	6,360
1979	331,738.33	265,817	264,633	100,279	12.22	8,206
1980	393,976.16	310,681	309,297	124,077	12.74	9,739
1981	221,191.75	171,454	170,690	72,621	13.29	5,464
1982	262,577.02	199,937	199,046	89,789	13.85	6,483
1983	318,744.54	238,186	237,125	113,494	14.43	7,865
1984	334,417.15	244,994	243,903	123,956	15.03	8,247
1985	280,604.56	201,385	200,488	108,177	15.64	6,917
1986	509,664.28	357,929	356,334	204,297	16.27	12,557
1987	835,443.37	573,651	571,095	347,893	16.91	20,573
1988	964,796.02	646,911	644,029	417,247	17.57	23,748
1989	1,301,721.20	851,504	847,710	584,183	18.24	32,028
1990	679,779.76	433,370	431,439	316,319	18.92	16,719
1991	1,069,297.09	663,392	660,437	515,790	19.62	26,289
1992	941,810.23	567,951	565,421	470,570	20.33	23,147
1993	1,064,196.91	623,026	620,250	550,367	21.05	26,146
1994	1,669,574.50	947,246	943,026	893,506	21.79	41,005
1995	3,366,307.56	1,848,988	1,840,751	1,862,187	22.53	82,654
1996	3,253,155.25	1,726,397	1,718,706	1,859,765	23.29	79,853
1997	3,409,314.99	1,745,965	1,738,187	2,012,059	24.05	83,661
1998	3,429,630.01	1,690,952	1,683,419	2,089,174	24.83	84,139
1999	3,649,209.34	1,728,765	1,721,063	2,293,067	25.62	89,503
2000	3,844,252.36	1,745,979	1,738,201	2,490,477	26.42	94,265
2001	8,202,339.05	3,562,924	3,547,051	5,475,522	27.23	201,084
2002	5,404,646.26	2,240,653	2,230,671	3,714,440	28.04	132,469
2003	8,944,045.36	3,526,494	3,510,783	6,327,667	28.87	219,178
2004	5,154,709.31	1,927,861	1,919,272	3,750,908	29.70	126,293
2005	3,277,490.34	1,157,678	1,152,520	2,452,719	30.55	80,285
2006	2,093,225.85	695,876	692,776	1,609,772	31.40	51,267
2007	2,324,339.43	723,848	720,623	1,836,150	32.26	56,917
2008	17,070,059.34	4,953,014	4,930,948	13,846,117	33.13	417,933
2009	35,430,222.90	9,526,620	9,484,178	29,489,067	34.00	867,326
2010	4,648,319.68	1,148,772	1,143,654	3,969,498	34.89	113,772

KENTUCKY UTILITIES COMPANY

ACCOUNT 367 UNDERGROUND CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R2.5						
NET SALVAGE PERCENT.. -10						
2011	6,811,641.89	1,535,201	1,528,362	5,964,444	35.78	166,698
2012	9,104,085.72	1,851,580	1,843,331	8,171,163	36.68	222,769
2013	3,584,935.55	650,232	647,335	3,296,094	37.58	87,709
2014	22,872,719.62	3,639,896	3,623,680	21,536,312	38.49	559,530
2015	35,073,247.07	4,800,966	4,779,578	33,800,994	39.40	857,893
2016	1,419,066.23	162,341	161,618	1,399,355	40.32	34,706
2017	2,871,259.97	263,188	262,015	2,896,371	41.25	70,215
2018	1,756,857.24	121,112	120,572	1,811,971	42.18	42,958
2019	2,973,080.15	136,637	136,028	3,134,360	43.12	72,689
2020	18,869,836.43	544,244	541,820	20,215,000	43.82	461,319
2021	10,268,482.76			11,295,331	45.00	251,007
	241,622,541.68	62,080,364	61,803,792	203,981,004		5,916,377
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						34.5 2.45

KENTUCKY UTILITIES COMPANY

ACCOUNT 368 LINE TRANSFORMERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 46-R2						
NET SALVAGE PERCENT.. -5						
1941	8,913.98	9,073	9,360			
1942	1,244.87	1,259	1,307			
1943	97.06	98	102			
1944	2,550.13	2,548	2,678			
1945	389.14	386	409			
1947	2,908.59	2,850	3,054			
1948	1,271.27	1,237	1,335			
1949	209,632.88	202,648	220,115			
1951	2,517.46	2,400	2,643			
1952	5,623.38	5,323	5,905			
1953	146,903.59	138,087	154,249			
1954	7,004.38	6,538	7,355			
1955	14,347.42	13,296	15,065			
1956	3,693.16	3,397	3,878			
1957	16,780.89	15,322	17,620			
1958	6,271.81	5,683	6,585			
1959	15,505.39	13,941	16,281			
1960	18,459.32	16,467	19,382			
1961	6,386.26	5,650	6,706			
1962	407,719.43	357,746	428,105			
1963	33,622.75	29,241	35,304			
1964	271,666.62	234,153	284,620	630	8.24	76
1965	492,991.02	420,976	511,710	5,931	8.59	690
1966	414,107.61	350,211	425,693	9,120	8.95	1,019
1967	841,819.41	704,821	856,732	27,178	9.32	2,916
1968	574,093.67	475,554	578,051	24,747	9.71	2,549
1969	901,072.00	738,385	897,530	48,596	10.10	4,811
1970	1,290,214.08	1,045,197	1,270,470	84,255	10.51	8,017
1971	1,259,602.32	1,008,324	1,225,650	96,932	10.93	8,868
1972	1,440,879.90	1,139,292	1,384,846	128,078	11.36	11,274
1973	2,620,869.84	2,045,993	2,486,970	264,943	11.80	22,453
1974	3,216,098.91	2,476,891	3,010,740	366,164	12.26	29,867
1975	1,547,583.48	1,175,628	1,429,013	195,950	12.72	15,405
1976	2,068,890.49	1,548,506	1,882,258	290,077	13.21	21,959
1977	3,521,533.56	2,596,351	3,155,947	541,663	13.70	39,537
1978	3,783,007.74	2,745,119	3,336,780	635,378	14.21	44,713
1979	3,919,520.68	2,797,632	3,400,611	714,886	14.73	48,533
1980	2,691,938.47	1,888,239	2,295,215	531,320	15.27	34,795
1981	1,764,425.39	1,215,892	1,477,955	374,692	15.81	23,700
1982	4,207,453.28	2,845,654	3,458,983	958,843	16.37	58,573
1983	4,812,658.01	3,192,366	3,880,423	1,172,868	16.94	69,237
1984	3,391,622.39	2,204,064	2,679,110	882,094	17.53	50,319
1985	4,899,531.62	3,118,035	3,790,071	1,354,437	18.12	74,748

KENTUCKY UTILITIES COMPANY

ACCOUNT 368 LINE TRANSFORMERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 46-R2						
NET SALVAGE PERCENT.. -5						
1986	5,629,936.68	3,504,475	4,259,801	1,651,633	18.73	88,181
1987	5,396,084.25	3,282,532	3,990,022	1,675,866	19.35	86,608
1988	6,150,971.60	3,653,262	4,440,656	2,017,864	19.98	100,994
1989	6,153,572.13	3,563,509	4,331,559	2,129,692	20.63	103,233
1990	6,102,687.27	3,443,499	4,185,683	2,222,139	21.28	104,424
1991	5,669,584.98	3,112,441	3,783,271	2,169,793	21.95	98,852
1992	6,445,804.28	3,439,952	4,181,371	2,586,723	22.62	114,356
1993	7,970,812.31	4,128,267	5,018,040	3,351,313	23.31	143,771
1994	8,631,278.07	4,334,395	5,268,595	3,794,247	24.00	158,094
1995	8,689,967.96	4,223,077	5,133,285	3,991,181	24.71	161,521
1996	8,002,608.70	3,757,453	4,567,304	3,835,435	25.43	150,823
1997	8,773,967.23	3,975,449	4,832,285	4,380,381	26.15	167,510
1998	8,518,953.83	3,715,980	4,516,892	4,428,010	26.89	164,671
1999	5,880,876.04	2,465,954	2,997,446	3,177,474	27.63	115,001
2000	9,423,290.91	3,787,894	4,604,306	5,290,149	28.39	186,338
2001	9,670,054.20	3,719,248	4,520,864	5,632,693	29.15	193,231
2002	5,407,117.33	1,984,674	2,412,434	3,265,039	29.92	109,126
2003	12,942,209.41	4,519,944	5,494,136	8,095,184	30.70	263,687
2004	4,296,229.29	1,422,918	1,729,602	2,781,439	31.49	88,328
2005	68,430.51	21,415	26,031	45,821	32.29	1,419
2006	18,299,969.78	5,392,681	6,554,975	12,659,993	33.09	382,593
2007	11,276,446.56	3,114,464	3,785,730	8,054,539	33.90	237,597
2008	9,059,219.66	2,332,577	2,835,322	6,676,859	34.72	192,306
2009	16,017,408.67	3,820,608	4,644,070	12,174,209	35.55	342,453
2010	2,079,493.70	456,629	555,047	1,628,421	36.38	44,761
2011	13,841,363.34	2,770,799	3,367,994	11,165,438	37.23	299,904
2012	7,156,970.72	1,295,480	1,574,697	5,940,122	38.07	156,032
2013	4,994,065.36	805,967	979,679	4,264,090	38.93	109,532
2014	47,254,298.67	6,698,297	8,141,993	41,475,021	39.79	1,042,348
2015	931,676.82	113,566	138,043	840,218	40.66	20,664
2016	571,778.19	58,212	70,759	529,608	41.54	12,749
2017	598,652.69	48,923	59,467	569,118	42.42	13,416
2018	674,835.88	41,594	50,559	658,019	43.30	15,197
2019	387,988.05	15,941	19,377	388,010	44.20	8,779
2020	7,234,914.58	186,650	226,879	7,369,781	44.87	164,247
2021	4,055,787.80		0	4,258,577	46.00	92,578
	335,102,731.10	130,009,199	157,974,990	193,882,878		6,309,383
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						30.7 1.88

KENTUCKY UTILITIES COMPANY

ACCOUNT 369 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 48-R1.5						
NET SALVAGE PERCENT.. -40						
1949	10,536.62	12,658	14,751			
1950	22,180.02	26,459	31,052			
1951	20,153.45	23,877	28,215			
1952	23,010.41	27,060	32,215			
1953	17,760.95	20,737	24,795	70	7.97	9
1954	2,290.24	2,654	3,173	33	8.27	4
1955	25,981.08	29,872	35,717	657	8.58	77
1956	66,790.13	76,188	91,096	2,410	8.89	271
1957	52,265.03	59,131	70,701	2,470	9.21	268
1958	99,657.16	111,820	133,700	5,820	9.53	611
1959	149,158.23	165,884	198,342	10,480	9.87	1,062
1960	43,526.39	47,988	57,378	3,559	10.20	349
1961	170,347.30	186,069	222,477	16,009	10.55	1,517
1962	157,882.28	170,843	204,272	16,763	10.90	1,538
1963	171,882.90	184,188	220,228	20,408	11.26	1,812
1964	184,386.43	195,542	233,804	24,337	11.64	2,091
1965	120,827.33	126,798	151,608	17,550	12.02	1,460
1966	192,037.33	199,343	238,348	30,504	12.41	2,458
1967	237,065.82	243,317	290,927	40,965	12.81	3,198
1968	171,502.59	173,974	208,015	32,089	13.22	2,427
1969	218,605.82	219,078	261,945	44,103	13.64	3,233
1970	152,085.47	150,509	179,959	32,961	14.07	2,343
1971	349,091.88	340,991	407,712	81,017	14.51	5,584
1972	362,103.92	348,839	417,096	89,849	14.97	6,002
1973	467,968.95	444,550	531,535	123,622	15.43	8,012
1974	686,541.09	642,572	768,303	192,855	15.91	12,122
1975	581,274.16	535,909	640,770	173,014	16.39	10,556
1976	981,241.62	890,347	1,064,560	309,178	16.89	18,305
1977	1,231,190.09	1,098,837	1,313,845	409,821	17.40	23,553
1978	1,140,597.56	1,001,025	1,196,895	399,942	17.91	22,331
1979	1,245,560.79	1,073,875	1,283,999	459,786	18.44	24,934
1980	912,755.49	772,567	923,734	354,124	18.98	18,658
1981	1,334,692.89	1,108,286	1,325,143	543,427	19.53	27,825
1982	1,343,070.66	1,092,924	1,306,775	573,524	20.10	28,534
1983	2,210,195.91	1,761,818	2,106,551	987,723	20.67	47,785
1984	2,058,603.20	1,606,135	1,920,406	961,638	21.25	45,254
1985	1,992,453.11	1,520,242	1,817,706	971,728	21.84	44,493
1986	2,048,640.79	1,527,262	1,826,100	1,041,997	22.44	46,435
1987	1,589,793.50	1,156,902	1,383,272	842,439	23.05	36,548
1988	2,254,504.00	1,599,868	1,912,913	1,243,393	23.67	52,530
1989	2,462,385.83	1,702,124	2,035,177	1,412,163	24.30	58,114
1990	2,333,626.89	1,569,569	1,876,685	1,390,393	24.94	55,750
1991	2,576,064.61	1,684,520	2,014,129	1,592,361	25.58	62,250

KENTUCKY UTILITIES COMPANY

ACCOUNT 369 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 48-R1.5						
NET SALVAGE PERCENT.. -40						
1992	2,519,858.50	1,599,258	1,912,183	1,615,619	26.24	61,571
1993	3,286,428.28	2,022,507	2,418,249	2,182,751	26.90	81,143
1994	3,801,948.63	2,265,460	2,708,741	2,613,987	27.57	94,813
1995	4,603,510.87	2,651,825	3,170,705	3,274,210	28.25	115,901
1996	4,826,032.99	2,682,850	3,207,801	3,548,645	28.94	122,621
1997	5,184,619.37	2,777,888	3,321,435	3,937,032	29.63	132,873
1998	5,244,188.33	2,702,687	3,231,519	4,110,345	30.33	135,521
1999	4,309,241.73	2,131,618	2,548,710	3,484,228	31.04	112,250
2000	2,751,666.64	1,304,169	1,559,355	2,292,978	31.75	72,220
2001	2,995,165.37	1,355,798	1,621,086	2,572,146	32.48	79,192
2002	3,029,927.73	1,307,905	1,563,822	2,678,077	33.20	80,665
2003	1,238,259.63	508,142	607,570	1,125,993	33.93	33,186
2004	183,074.92	71,178	85,105	171,200	34.67	4,938
2006	26,403.91	9,111	10,894	26,071	36.17	721
2007	12,760.34	4,124	4,931	12,933	36.92	350
2008	2,118,834.74	637,769	762,561	2,203,808	37.68	58,487
2009	29,434.60	8,207	9,813	31,395	38.44	817
2010	3,721,586.34	954,096	1,140,783	4,069,438	39.21	103,786
2011	2,368,543.95	553,368	661,645	2,654,317	39.99	66,375
2012	6,543,791.78	1,379,876	1,649,875	7,511,433	40.77	184,239
2013	9,949,861.96	1,871,887	2,238,157	11,691,650	41.55	281,387
2014	16,527,250.32	2,728,451	3,262,324	19,875,826	42.34	469,434
2015	13,414,382.08	1,905,432	2,278,266	16,501,869	43.13	382,608
2019	483.17	23	28	648	46.36	14
2020	45,345.55	1,362	1,628	61,856	46.97	1,317
	131,204,891.65	59,368,142	70,983,210	112,703,638		3,356,732
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						33.6 2.56

KENTUCKY UTILITIES COMPANY

ACCOUNT 370 METERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
INTERIM SURVIVOR CURVE.. IOWA 46-R1						
PROBABLE RETIREMENT YEAR.. 12-2029						
NET SALVAGE PERCENT.. 0						
1932	78.61	77	65	14	1.14	12
1940	76.95	71	60	17	3.64	5
1941	21,279.65	19,489	16,399	4,881	3.87	1,261
1942	4,949.10	4,509	3,794	1,155	4.09	282
1943	7,319.88	6,637	5,585	1,735	4.29	404
1944	602.97	544	458	145	4.47	32
1945	1,068.97	961	809	260	4.65	56
1947	439.24	392	330	109	4.98	22
1948	3,584.35	3,184	2,679	905	5.13	176
1949	3,057.48	2,705	2,276	781	5.28	148
1950	2,467.79	2,176	1,831	637	5.42	118
1951	1,829.26	1,607	1,352	477	5.55	86
1952	27,506.14	24,095	20,275	7,231	5.67	1,275
1953	85,450.91	74,615	62,786	22,665	5.79	3,915
1954	137,050.18	119,310	100,395	36,655	5.90	6,213
1955	147,750.10	128,266	107,932	39,818	6.00	6,636
1956	124,836.79	108,040	90,912	33,925	6.11	5,552
1957	185,081.43	159,749	134,423	50,658	6.20	8,171
1958	58,016.01	49,939	42,022	15,994	6.29	2,543
1959	22,885.22	19,645	16,531	6,354	6.38	996
1960	234,092.80	200,421	168,648	65,445	6.46	10,131
1961	239,023.74	204,100	171,743	67,281	6.54	10,288
1962	238,655.16	203,224	171,006	67,649	6.62	10,219
1963	287,455.27	244,142	205,437	82,018	6.69	12,260
1964	298,028.76	252,457	212,434	85,595	6.76	12,662
1965	379,034.11	320,185	269,425	109,609	6.83	16,048
1966	316,094.05	266,325	224,104	91,990	6.89	13,351
1967	298,614.14	250,857	211,088	87,526	6.96	12,576
1968	369,951.24	310,004	260,858	109,093	7.01	15,562
1969	437,399.99	365,448	307,512	129,888	7.07	18,372
1970	388,882.50	323,916	272,565	116,318	7.13	16,314
1971	542,855.08	450,863	379,386	163,469	7.18	22,767
1972	650,779.75	538,885	453,454	197,326	7.23	27,293
1973	729,615.59	602,239	506,764	222,852	7.28	30,612
1974	1,328,597.95	1,093,343	920,012	408,586	7.32	55,818
1975	580,814.60	476,309	400,798	180,017	7.37	24,426
1976	782,919.07	639,919	538,471	244,448	7.41	32,989
1977	1,568,393.17	1,276,986	1,074,541	493,852	7.46	66,200
1978	1,164,064.73	944,324	794,617	369,448	7.50	49,260
1979	1,360,319.73	1,099,546	925,231	435,089	7.53	57,781
1980	556,707.63	448,150	377,103	179,605	7.57	23,726
1981	515,868.26	413,474	347,925	167,943	7.61	22,069

KENTUCKY UTILITIES COMPANY

ACCOUNT 370 METERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
INTERIM SURVIVOR CURVE.. IOWA 46-R1						
PROBABLE RETIREMENT YEAR.. 12-2029						
NET SALVAGE PERCENT.. 0						
1982	598,277.47	477,485	401,788	196,489	7.64	25,718
1983	1,145,189.31	909,590	765,390	379,799	7.68	49,453
1984	833,450.17	658,834	554,387	279,063	7.71	36,195
1985	777,049.33	611,134	514,249	262,800	7.74	33,953
1986	959,184.81	750,361	631,404	327,781	7.77	42,185
1987	1,054,521.92	820,313	690,266	364,256	7.80	46,699
1988	1,056,438.36	816,806	687,315	369,123	7.83	47,142
1989	1,103,090.78	847,802	713,397	389,694	7.85	49,643
1990	1,371,157.04	1,046,686	880,752	490,405	7.88	62,234
1991	1,440,270.31	1,091,883	918,783	521,487	7.90	66,011
1992	2,416,966.28	1,818,187	1,529,944	887,022	7.93	111,856
1993	1,104,348.12	824,296	693,618	410,730	7.95	51,664
1994	1,364,550.55	1,009,958	849,846	514,705	7.97	64,580
1995	1,438,112.59	1,054,841	887,614	550,499	7.99	68,898
1996	1,517,220.27	1,102,154	927,426	589,794	8.01	73,632
1997	2,433,989.62	1,749,649	1,472,272	961,718	8.03	119,766
1998	1,996,670.09	1,419,832	1,194,741	801,929	8.04	99,742
1999	1,778,449.08	1,249,307	1,051,250	727,199	8.06	90,223
2000	1,866,887.90	1,294,201	1,089,027	777,861	8.08	96,270
2001	2,205,922.15	1,507,990	1,268,924	936,998	8.09	115,822
2002	1,854,252.41	1,247,875	1,050,045	804,207	8.11	99,162
2003	1,728,521.55	1,143,953	962,599	765,923	8.12	94,325
2004	79,606.80	51,734	43,532	36,075	8.13	4,437
2005	290,222.85	184,805	155,507	134,716	8.14	16,550
2006	3,408,757.61	2,121,986	1,785,581	1,623,177	8.15	199,163
2007	1,037,165.15	629,694	529,867	507,298	8.16	62,169
2008	44,649.61	26,346	22,169	22,481	8.17	2,752
2009	1,515,281.60	865,983	728,696	786,586	8.18	96,160
2010	944,171.45	519,993	437,557	506,614	8.19	61,858
2011	675,361.19	356,537	300,014	375,347	8.20	45,774
2012	869,026.03	436,355	367,178	501,848	8.21	61,126
2013	5,951,167.11	2,817,342	2,370,700	3,580,467	8.22	435,580
2014	700,588.46	308,889	259,920	440,668	8.23	53,544
2015	122,773.45	49,713	41,832	80,941	8.23	9,835
2016	56,832.89	20,587	17,323	39,510	8.24	4,795
2018	890,293.00	227,185	191,169	699,124	8.26	84,640

KENTUCKY UTILITIES COMPANY

ACCOUNT 370 METERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
INTERIM SURVIVOR CURVE.. IOWA 46-R1						
PROBABLE RETIREMENT YEAR.. 12-2029						
NET SALVAGE PERCENT.. 0						
2019	255,206.26	47,473	39,947	215,259	8.27	26,029
2020	2,559,634.33	321,976	270,932	2,288,702	8.27	276,748
2021	1,087,905.70		0	1,087,905	8.28	131,389
	66,636,661.95	44,090,863	37,100,997	29,535,665		3,716,349
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 7.9						5.58

KENTUCKY UTILITIES COMPANY

ACCOUNT 370.01 METERS - AMS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 15-S2.5						
NET SALVAGE PERCENT.. 0						
2015	2,737,154.06	1,069,324	652,910	2,084,244	9.14	228,035
2017	76,817.21	20,331	12,414	64,403	11.03	5,839
2018	97,071.49	19,349	11,814	85,257	12.01	7,099
2020	92,237.92	7,686	4,693	87,545	13.75	6,367
	3,003,280.68	1,116,690	681,831	2,321,450		247,340
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						9.4 8.24

KENTUCKY UTILITIES COMPANY

ACCOUNT 370.11 METERS - AMI

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 15-S2.5						
NET SALVAGE PERCENT.. 0						
2018	770.41	154	136	634	12.01	53
	770.41	154	136	634		53
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					12.0	6.88

KENTUCKY UTILITIES COMPANY

ACCOUNT 370.2 METERS - CT AND PT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 18-S3						
NET SALVAGE PERCENT.. 0						
1941	7,603.77	7,604	7,604			
1942	45.48	45	45			
1944	30.03	30	30			
1945	14,653.76	14,654	14,654			
1946	8,567.58	8,568	8,568			
1947	3,149.35	3,149	3,149			
1948	57,848.57	57,849	57,849			
1949	5,542.70	5,543	5,543			
1950	14,141.15	14,141	14,141			
1951	10,103.86	10,104	10,104			
1952	13,005.92	13,006	13,006			
1953	11,870.97	11,871	11,871			
1954	12,983.00	12,983	12,983			
1955	24,516.43	24,516	24,516			
1956	20,828.00	20,828	20,828			
1957	16,554.36	16,554	16,554			
1958	19,290.12	19,290	19,290			
1959	30,001.19	30,001	30,001			
1960	28,511.07	28,511	28,511			
1961	35,610.57	35,611	35,611			
1962	46,072.23	46,072	46,072			
1963	51,694.97	51,695	51,695			
1964	45,324.39	45,324	45,324			
1965	66,162.07	66,162	66,162			
1966	73,596.80	73,597	73,597			
1967	61,918.37	61,918	61,918			
1968	94,045.70	94,046	94,046			
1969	101,065.17	101,065	101,065			
1970	83,599.36	83,599	83,599			
1971	118,204.18	118,204	118,204			
1972	85,235.78	85,236	85,236			
1973	104,230.68	104,231	104,231			
1974	165,067.68	165,068	165,068			
1975	87,632.16	87,632	87,632			
1976	134,905.35	134,905	134,905			
1977	155,345.20	155,345	155,345			
1978	217,677.82	217,678	217,678			
1979	181,222.25	181,222	181,222			
1980	193,881.57	193,882	193,882			
1981	183,996.98	183,997	183,997			
1982	264,916.68	264,917	264,917			
1983	96,128.82	96,129	96,129			
1984	176,285.28	176,285	176,285			

KENTUCKY UTILITIES COMPANY

ACCOUNT 370.2 METERS - CT AND PT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 18-S3						
NET SALVAGE PERCENT.. 0						
1985	174,443.17	174,443	174,443			
1986	239,539.04	239,539	239,539			
1987	202,183.92	199,824	155,064	47,120	0.21	47,120
1988	197,610.83	193,659	150,280	47,331	0.36	47,331
1989	146,747.06	142,753	110,777	35,970	0.49	35,970
1990	64,008.56	61,804	47,960	16,049	0.62	16,049
1991	58,977.86	56,488	43,835	15,143	0.76	15,143
1992	183,453.39	174,178	135,163	48,290	0.91	48,290
1993	255,802.61	240,598	186,705	69,098	1.07	64,578
1994	252,645.47	235,241	182,548	70,097	1.24	56,530
1995	316,652.19	291,671	226,338	90,314	1.42	63,601
1996	231,068.43	210,402	163,273	67,795	1.61	42,109
1997	311,470.17	279,977	217,264	94,206	1.82	51,762
1998	157,772.84	139,804	108,489	49,284	2.05	24,041
1999	3,765.20	3,284	2,548	1,217	2.30	529
2000	345,801.15	296,428	230,030	115,771	2.57	45,047
2001	95,588.70	80,401	62,392	33,197	2.86	11,607
2004	69,055.11	53,863	41,798	27,257	3.96	6,883
2007	22,185.74	15,444	11,985	10,201	5.47	1,865
2009	907,411.45	566,125	439,316	468,095	6.77	69,143
2010	590,559.23	343,835	266,818	323,741	7.52	43,051
2011	294,355.04	158,298	122,840	171,515	8.32	20,615
2012	802,950.31	392,996	304,967	497,983	9.19	54,187
2013	2,502,459.56	1,098,304	852,290	1,650,170	10.10	163,383
	11,549,574.40	8,772,426	7,599,729	3,949,845		928,834
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						4.3 8.04

KENTUCKY UTILITIES COMPANY

ACCOUNT 371.01 INSTALLATIONS ON CUSTOMERS' PREMISES - EV CHARGING STATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 10-S3						
NET SALVAGE PERCENT.. 0						
2019	159,233.81	31,847	31,324	127,910	8.00	15,989
	159,233.81	31,847	31,324	127,910		15,989
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						8.0 10.04

KENTUCKY UTILITIES COMPANY

ACCOUNT 373 STREET LIGHTING AND SIGNAL SYSTEMS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 29-L0.5						
NET SALVAGE PERCENT.. -10						
1941	28,576.98	25,115	31,239	196	5.83	34
1942	3,472.90	3,039	3,780	40	5.93	7
1943	150.91	131	163	3	6.04	
1944	978.19	848	1,055	21	6.14	3
1945	727.41	628	781	19	6.24	3
1946	1,429.49	1,229	1,529	43	6.34	7
1947	7,070.75	6,048	7,523	255	6.45	40
1948	13,230.85	11,267	14,014	540	6.55	82
1949	8,024.34	6,800	8,458	369	6.66	55
1950	6,464.02	5,453	6,783	327	6.76	48
1951	7,357.57	6,176	7,682	411	6.87	60
1952	4,054.06	3,385	4,210	249	6.99	36
1953	24,906.00	20,689	25,734	1,663	7.10	234
1954	30,693.09	25,345	31,525	2,237	7.23	309
1955	48,193.02	39,576	49,227	3,785	7.35	515
1956	32,992.56	26,931	33,498	2,794	7.48	374
1957	28,646.71	23,242	28,910	2,601	7.61	342
1958	45,429.16	36,618	45,547	4,425	7.75	571
1959	20,254.70	16,218	20,173	2,107	7.89	267
1960	57,294.74	45,551	56,659	6,365	8.04	792
1961	73,891.51	58,326	72,549	8,732	8.19	1,066
1962	31,136.58	24,400	30,350	3,900	8.34	468
1963	125,470.28	97,564	121,355	16,662	8.50	1,960
1964	166,992.99	128,838	160,255	23,437	8.66	2,706
1965	55,046.20	42,114	52,383	8,168	8.83	925
1966	299,240.74	226,897	282,226	46,939	9.01	5,210
1967	187,644.42	141,070	175,470	30,939	9.18	3,370
1968	144,812.09	107,826	134,119	25,174	9.37	2,687
1969	187,374.28	138,237	171,946	34,166	9.55	3,578
1970	34,045.08	24,872	30,937	6,513	9.74	669
1971	183,147.00	132,409	164,697	36,765	9.94	3,699
1972	24,868.41	17,790	22,128	5,227	10.14	515
1973	21,645.69	15,321	19,057	4,753	10.34	460
1974	36,061.15	25,237	31,391	8,276	10.55	784
1975	21,620.72	14,959	18,607	5,176	10.76	481
1976	18,828.38	12,870	16,008	4,703	10.98	428
1977	42,978.32	29,018	36,094	11,182	11.20	998
1978	21,710.04	14,469	17,997	5,884	11.43	515
1979	272,767.80	179,406	223,154	76,891	11.66	6,594
1980	135,622.77	88,019	109,482	39,703	11.89	3,339
1981	1,332,798.30	852,847	1,060,813	405,265	12.13	33,410
1982	726,657.64	458,092	569,797	229,526	12.38	18,540
1983	512,512.62	318,233	395,834	167,930	12.63	13,296

KENTUCKY UTILITIES COMPANY

ACCOUNT 373 STREET LIGHTING AND SIGNAL SYSTEMS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 29-L0.5						
NET SALVAGE PERCENT.. -10						
1984	1,118,949.97	684,177	851,013	379,832	12.88	29,490
1985	1,128,602.08	678,956	844,519	396,943	13.14	30,209
1986	888,945.82	525,677	653,863	323,977	13.41	24,159
1987	62,961.05	36,587	45,509	23,748	13.68	1,736
1988	306,172.70	174,784	217,405	119,385	13.95	8,558
1989	1,573,610.32	881,601	1,096,579	634,392	14.23	44,581
1990	1,114,528.49	612,145	761,416	464,565	14.52	31,995
1991	848,053.20	456,457	567,764	365,095	14.81	24,652
1992	1,088,296.08	573,794	713,713	483,413	15.10	32,014
1993	2,046,207.31	1,054,783	1,311,991	938,837	15.41	60,924
1994	2,484,885.83	1,252,651	1,558,109	1,175,265	15.71	74,810
1995	2,128,829.37	1,047,307	1,302,692	1,039,020	16.03	64,817
1996	2,207,529.41	1,059,241	1,317,536	1,110,746	16.35	67,936
1997	2,707,893.79	1,266,447	1,575,269	1,403,414	16.67	84,188
1998	2,732,478.12	1,242,717	1,545,753	1,459,973	17.01	85,830
1999	4,353,735.48	1,923,881	2,393,018	2,396,091	17.35	138,103
2000	3,354,669.88	1,439,153	1,790,090	1,900,047	17.69	107,408
2001	2,475,942.46	1,029,306	1,280,302	1,443,235	18.04	80,002
2002	1,898,984.57	763,529	949,715	1,139,168	18.40	61,911
2003	5,018,653.62	1,947,418	2,422,295	3,098,224	18.77	165,063
2004	1,859,010.81	695,270	864,811	1,180,101	19.14	61,656
2005	392,122.36	140,852	175,199	256,136	19.53	13,115
2006	323,787.92	111,516	138,709	217,458	19.92	10,917
2007	48,760.24	16,036	19,946	33,690	20.33	1,657
2008	2,776,488.77	867,803	1,079,416	1,974,722	20.76	95,121
2009	8,244,125.32	2,435,991	3,030,006	6,038,532	21.21	284,702
2010	16,235,740.93	4,501,798	5,599,560	12,259,755	21.69	565,226
2011	4,082,771.31	1,054,633	1,311,805	3,179,243	22.19	143,274
2012	5,943,328.63	1,415,731	1,760,956	4,776,705	22.72	210,242
2013	1,924,007.81	417,440	519,233	1,597,176	23.28	68,607
2014	27,958,344.02	5,440,414	6,767,057	23,987,121	23.87	1,004,907
2015	6,846,707.52	1,168,644	1,453,617	6,077,761	24.50	248,072
2016	1,205,426.07	176,036	218,962	1,107,007	25.15	44,016
2017	1,518,178.82	181,980	226,356	1,443,641	25.84	55,868
2018	2,806,726.19	259,774	323,120	2,764,279	26.56	104,077
2019	248,784.58	15,853	19,719	253,944	27.32	9,295
2020	12,224,617.59	500,769	622,881	12,824,198	27.92	459,319
2021	4,862,635.85		0	5,348,900	29.00	184,445
	144,068,314.75	41,504,254	51,625,043	106,850,103		4,892,379

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 21.8 3.40

KENTUCKY UTILITIES COMPANY

ACCOUNT 390.1 STRUCTURES AND IMPROVEMENTS - OWNED PROPERTY

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 49-S0						
NET SALVAGE PERCENT.. -15						
1941	20,902.36	20,741	18,251	5,787	6.72	861
1942	560.63	551	485	160	7.11	23
1950	2,470.51	2,247	1,977	864	10.24	84
1952	2,141.90	1,908	1,679	784	11.04	71
1953	806.36	711	626	301	11.44	26
1955	9,125.37	7,871	6,926	3,568	12.25	291
1956	253,937.10	216,576	190,579	101,449	12.66	8,013
1957	131.71	111	98	53	13.07	4
1958	156,772.10	130,691	115,003	65,285	13.48	4,843
1960	1,634.86	1,331	1,171	709	14.31	50
1961	43,520.92	35,004	30,802	19,247	14.73	1,307
1962	335,711.01	266,703	234,689	151,379	15.15	9,992
1963	14,557.14	11,421	10,050	6,691	15.57	430
1965	41,078.89	31,410	27,640	19,601	16.42	1,194
1966	304,378.72	229,665	202,097	147,939	16.85	8,780
1967	17,751.16	13,215	11,629	8,785	17.28	508
1968	6,260.40	4,596	4,044	3,155	17.72	178
1969	175,928.10	127,377	112,087	90,230	18.15	4,971
1970	925,463.16	660,504	581,220	483,063	18.59	25,985
1971	143,789.85	101,105	88,969	76,389	19.04	4,012
1972	345,660.00	239,479	210,733	186,776	19.48	9,588
1974	9,906.62	6,654	5,855	5,538	20.38	272
1975	100,603.10	66,488	58,507	57,187	20.84	2,744
1977	86,571.95	55,346	48,702	50,856	21.76	2,337
1979	94,280.67	58,217	51,229	57,194	22.69	2,521
1980	55,212.27	33,484	29,465	34,029	23.16	1,469
1981	910,390.30	541,848	476,807	570,142	23.64	24,118
1982	243,770.64	142,344	125,258	155,078	24.12	6,429
1983	353,873.43	202,647	178,322	228,632	24.60	9,294
1984	171,743.30	96,374	84,806	112,699	25.09	4,492
1985	1,302,097.65	715,404	629,529	867,883	25.59	33,915
1986	658,043.68	353,977	311,487	445,263	26.08	17,073
1988	555,023.15	285,399	251,141	387,136	27.09	14,291
1989	6,183,983.16	3,104,418	2,731,775	4,379,806	27.61	158,631
1990	722,681.81	354,142	311,632	519,452	28.12	18,473
1991	243,739.58	116,412	102,438	177,863	28.65	6,208
1992	736,039.93	342,379	301,281	545,165	29.18	18,683
1994	768,720.38	338,273	297,668	586,360	30.25	19,384
1995	3,230,477.55	1,379,881	1,214,245	2,500,804	30.80	81,195
1996	822,838.11	340,655	299,764	646,500	31.36	20,615
1997	188,082.68	75,394	66,344	149,951	31.92	4,698
1998	118,142.57	45,778	40,283	95,581	32.49	2,942
1999	292,329.75	109,362	96,235	239,944	33.06	7,258

KENTUCKY UTILITIES COMPANY

ACCOUNT 390.1 STRUCTURES AND IMPROVEMENTS - OWNED PROPERTY

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 49-S0						
NET SALVAGE PERCENT.. -15						
2000	345,747.15	124,559	109,607	288,002	33.65	8,559
2001	1,006,594.58	348,687	306,832	850,752	34.24	24,847
2003	1,709,628.03	543,285	478,071	1,488,001	35.46	41,963
2004	210,420.74	63,804	56,145	185,839	36.08	5,151
2005	1,152,084.60	332,311	292,422	1,032,475	36.71	28,125
2006	633,540.40	173,225	152,432	576,139	37.35	15,425
2007	1,031,263.74	265,997	234,068	951,885	38.01	25,043
2008	4,338,647.79	1,051,875	925,611	4,063,834	38.67	105,090
2009	2,631,259.58	595,930	524,397	2,501,552	39.35	63,572
2010	1,141,118.64	239,689	210,918	1,101,368	40.05	27,500
2011	3,106,495.26	601,497	529,295	3,043,175	40.75	74,679
2012	6,241,682.39	1,101,598	969,366	6,208,569	41.48	149,676
2013	2,887,689.19	459,505	404,348	2,916,495	42.22	69,079
2014	1,902,731.51	268,835	236,565	1,951,576	42.98	45,407
2015	5,062,045.32	622,535	547,808	5,273,544	43.76	120,511
2016	2,545,386.83	265,233	233,395	2,693,800	44.56	60,453
2017	3,409,549.69	289,682	254,909	3,666,073	45.38	80,786
2018	5,515,208.06	357,272	314,386	6,028,103	46.24	130,366
2019	12,028,033.94	530,743	467,035	13,365,204	47.12	283,642
2020	20,719,625.61	583,537	513,491	23,314,078	47.80	487,742
2021	2,275,352.68			2,616,656	49.00	53,401
	100,545,240.26	19,687,892	17,324,629	98,302,397		2,439,270
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						40.3 2.43

KENTUCKY UTILITIES COMPANY

ACCOUNT 390.2 STRUCTURES AND IMPROVEMENTS - LEASEHOLD IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 37-R1						
NET SALVAGE PERCENT.. -10						
1954	172.93	178	168	22	2.43	9
1962	2,572.33	2,459	2,322	508	4.85	105
1970	234.28	205	194	64	7.62	8
1971	1,164.17	1,004	948	333	7.99	42
1973	131.45	110	104	41	8.76	5
1977	148.09	117	110	53	10.40	5
1978	1,650.99	1,285	1,213	603	10.83	56
1979	1,454.48	1,113	1,051	549	11.27	49
1983	3,473.18	2,467	2,329	1,491	13.11	114
1984	1,919.65	1,336	1,261	851	13.59	63
1985	1,839.75	1,254	1,184	840	14.08	60
1993	1,175.36	652	616	677	18.34	37
1996	1,114.00	560	529	696	20.09	35
1999	2,747.75	1,232	1,163	1,860	21.92	85
2019	5,247.68	229	216	5,556	35.53	156
	25,046.09	14,201	13,408	14,143		829

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 17.1 3.31

KENTUCKY UTILITIES COMPANY

ACCOUNT 391.1 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 20-SQUARE						
NET SALVAGE PERCENT.. 0						
2002	5,291.84	5,027	4,373	919	1.00	919
2003	164,371.90	147,935	128,679	35,693	2.00	17,846
2004	139,596.05	118,657	103,212	36,384	3.00	12,128
2005	159,934.29	127,947	111,293	48,641	4.00	12,160
2006	99,011.55	74,259	64,593	34,419	5.00	6,884
2007	312,121.99	218,485	190,046	122,076	6.00	20,346
2008	181,323.81	117,860	102,519	78,805	7.00	11,258
2009	591,964.52	355,179	308,947	283,018	8.00	35,377
2010	56,433.78	31,039	26,999	29,435	9.00	3,271
2011	104,346.92	52,173	45,382	58,965	10.00	5,896
2012	394,682.30	177,607	154,489	240,193	11.00	21,836
2013	390,792.24	156,317	135,970	254,822	12.00	21,235
2014	890,687.26	311,741	271,164	619,523	13.00	47,656
2015	883,346.13	265,004	230,510	652,836	14.00	46,631
2016	776,419.31	194,105	168,840	607,579	15.00	40,505
2017	1,109,398.01	221,880	192,999	916,399	16.00	57,275
2018	1,033,862.15	155,079	134,893	898,969	17.00	52,881
2019	1,361,267.75	136,127	118,408	1,242,860	18.00	69,048
2020	1,768,227.87	110,514	96,129	1,672,099	18.75	89,179
2021	373,844.94		0	373,845	20.00	18,692
	10,796,924.61	2,976,935	2,589,445	8,207,479		591,023
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						13.9 5.47

KENTUCKY UTILITIES COMPANY

ACCOUNT 391.2 NON PC COMPUTER EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 5-SQUARE						
NET SALVAGE PERCENT.. 0						
2016	2,154,365.64	2,154,366	2,154,366			
2017	4,601,789.04	3,681,431	3,181,365	1,420,424	1.00	1,420,424
2018	5,242,372.69	3,145,424	2,718,166	2,524,207	2.00	1,262,104
2019	8,617,695.14	3,447,078	2,978,845	5,638,850	3.00	1,879,617
2020	5,283,111.10	1,320,778	1,141,371	4,141,740	3.75	1,104,464
2021	587,500.01		0	587,500	5.00	117,500
	26,486,833.62	13,749,077	12,174,113	14,312,721		5,784,109
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						2.5 21.84

KENTUCKY UTILITIES COMPANY

ACCOUNT 391.31 PERSONAL COMPUTERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 4-SQUARE						
NET SALVAGE PERCENT.. 0						
2017	134,566.48	134,566	134,566			
2018	1,184,573.98	888,430	558,769	625,805	1.00	625,805
2019	3,042,845.63	1,521,423	956,883	2,085,963	2.00	1,042,982
2020	1,145,839.17	358,075	225,208	920,631	2.75	334,775
2021	64,792.00		0	64,792	4.00	16,198
	5,572,617.26	2,902,494	1,875,426	3,697,192		2,019,760
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						1.8 36.24

KENTUCKY UTILITIES COMPANY

ACCOUNT 392 TRANSPORTATION EQUIPMENT - CARS AND LIGHT TRUCKS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 16-S1.5						
NET SALVAGE PERCENT.. 0						
1995	9,600.60	8,677	9,601			
1997	31,916.14	27,807	31,916			
1999	69,565.79	58,261	69,566			
2002	17,388.98	13,574	16,655	734	3.51	209
2008	50,024.89	31,516	38,669	11,356	5.92	1,918
2009	35,345.09	21,141	25,939	9,406	6.43	1,463
2010	56,718.44	31,975	39,233	17,485	6.98	2,505
2011	140,657.91	74,021	90,822	49,836	7.58	6,575
2012	5,794.44	2,818	3,458	2,336	8.22	284
2013	127,167.74	56,351	69,141	58,027	8.91	6,513
2014	65,375.78	25,987	31,885	33,491	9.64	3,474
2015	372,799.87	129,779	159,236	213,564	10.43	20,476
2016	96,081.73	28,404	34,851	61,231	11.27	5,433
2017	342,890.24	82,506	101,233	241,657	12.15	19,889
2018	172,646.48	31,615	38,791	133,855	13.07	10,241
2019	281,585.34	34,846	42,755	238,830	14.02	17,035
2020	249,076.08	19,303	23,684	225,392	14.76	15,270
2021	29,583.80			29,584	16.00	1,849
	2,154,219.34	678,581	827,435	1,326,784		113,134
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						11.7 5.25

KENTUCKY UTILITIES COMPANY

ACCOUNT 392.1 TRANSPORTATION EQUIPMENT - HEAVY TRUCKS AND OTHER

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 14-L2.5						
NET SALVAGE PERCENT.. 0						
1986	52,760.16	49,482	52,760			
1990	42,041.64	37,357	42,042			
1991	27,800.61	24,385	27,801			
1992	42,805.04	37,118	42,805			
1995	65,611.33	54,785	65,611			
1996	116,711.19	96,037	116,711			
1999	89,004.72	69,487	88,893	112	3.07	36
2000	581,363.02	444,743	568,949	12,414	3.29	3,773
2002	49,019.66	35,854	45,867	3,153	3.76	839
2004	95,879.48	66,910	85,596	10,283	4.23	2,431
2008	6,651.47	4,266	5,457	1,194	5.02	238
2010	20,385.69	12,319	15,759	4,627	5.54	835
2011	956,578.31	552,080	706,263	250,315	5.92	42,283
2012	55,650.23	30,250	38,698	16,952	6.39	2,653
2013	27,034.16	13,556	17,342	9,692	6.98	1,389
2014	1,893,306.84	857,403	1,096,856	796,451	7.66	103,975
2015	1,538,277.56	613,111	784,339	753,939	8.42	89,541
2017	69,689.17	19,214	24,580	45,109	10.14	4,449
2018	112,102.24	23,541	30,116	81,986	11.06	7,413
2019	23,703.12	3,352	4,288	19,415	12.02	1,615
2020	636,447.02	56,370	72,113	564,334	12.76	44,227
	6,502,822.66	3,101,620	3,932,846	2,569,977		305,697

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.4 4.70

KENTUCKY UTILITIES COMPANY

ACCOUNT 393 STORES EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 25-SQUARE						
NET SALVAGE PERCENT.. 0						
1996	13,202.54	13,203	13,203			
1997	863.00	828	854	9	1.00	9
1998	2,667.00	2,454	2,531	136	2.00	68
1999	15,683.00	13,801	14,235	1,448	3.00	483
2003	102,957.32	74,129	76,459	26,498	7.00	3,785
2005	118,483.26	75,829	78,212	40,271	9.00	4,475
2007	4,390.25	2,459	2,536	1,854	11.00	169
2009	49,517.43	23,768	24,515	25,002	13.00	1,923
2011	15,739.13	6,296	6,494	9,245	15.00	616
2012	94,723.04	34,100	35,171	59,552	16.00	3,722
2014	289,857.21	81,160	83,711	206,146	18.00	11,453
2016	5,138.58	1,028	1,060	4,079	20.00	204
2020	326,351.00	16,318	16,831	309,520	23.75	13,032
	1,039,572.76	345,373	355,812	683,761		39,939
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						17.1 3.84

KENTUCKY UTILITIES COMPANY

ACCOUNT 394 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 25-SQUARE						
NET SALVAGE PERCENT.. 0						
1996	165,353.16	165,353	165,353			
1997	275,144.00	264,138	263,981	11,163	1.00	11,163
1998	177,280.00	163,098	163,001	14,279	2.00	7,140
1999	290,308.91	255,472	255,320	34,989	3.00	11,663
2000	135,894.21	114,151	114,083	21,811	4.00	5,453
2001	113,230.00	90,584	90,530	22,700	5.00	4,540
2002	35,746.03	27,167	27,151	8,595	6.00	1,432
2003	843,328.94	607,197	606,836	236,493	7.00	33,785
2004	311,595.23	211,885	211,759	99,836	8.00	12,480
2005	194,741.79	124,635	124,561	70,181	9.00	7,798
2006	147,385.38	88,431	88,378	59,007	10.00	5,901
2007	184,345.37	103,233	103,172	81,173	11.00	7,379
2008	92,875.65	48,295	48,266	44,610	12.00	3,718
2009	831,398.08	399,071	398,834	432,564	13.00	33,274
2010	1,350,836.32	594,368	594,014	756,822	14.00	54,059
2011	1,076,072.95	430,429	430,173	645,900	15.00	43,060
2012	2,662,620.33	958,543	957,973	1,704,647	16.00	106,540
2013	630,609.80	201,795	201,675	428,935	17.00	25,231
2014	587,901.84	164,613	164,515	423,387	18.00	23,522
2015	1,070,472.33	256,913	256,760	813,712	19.00	42,827
2016	513,942.46	102,788	102,727	411,215	20.00	20,561
2017	968,470.00	154,955	154,863	813,607	21.00	38,743
2018	722,226.65	86,667	86,615	635,612	22.00	28,891
2019	1,350,813.28	108,065	108,001	1,242,812	23.00	54,035
2020	1,866,502.04	93,325	93,270	1,773,232	23.75	74,662
2021	991,401.22		0	991,402	25.00	39,656
	17,590,495.97	5,815,171	5,811,811	11,778,685		697,513
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						16.9 3.97

KENTUCKY UTILITIES COMPANY

ACCOUNT 396.1 POWER OPERATED EQUIPMENT - LARGE MACHINERY

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 17-L5						
NET SALVAGE PERCENT.. 0						
2003	69,563.63	60,807	65,546	4,018	2.14	1,878
2008	128,604.22	95,621	103,073	25,531	4.36	5,856
2009	18,177.07	12,628	13,612	4,565	5.19	880
2010	618,093.37	397,032	427,973	190,120	6.08	31,270
2012	171,421.98	90,753	97,826	73,596	8.00	9,200
2013	303,596.42	142,869	154,003	149,593	9.00	16,621
2014	522,741.73	215,244	232,018	290,724	10.00	29,072
2015	109,870.44	38,778	41,800	68,070	11.00	6,188
2016	61,529.46	18,097	19,507	42,022	12.00	3,502
2017	1,150,827.09	270,778	291,880	858,947	13.00	66,073
2018	513,493.76	90,616	97,678	415,816	14.00	29,701
2019	752,121.30	88,487	95,383	656,738	15.00	43,783
2020	377,552.54	27,761	29,925	347,628	15.75	22,072
	4,797,593.01	1,549,471	1,670,224	3,127,369		266,096
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						11.8 5.55

KENTUCKY UTILITIES COMPANY

ACCOUNT 396.2 POWER OPERATED EQUIPMENT - OTHER

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 17-L5						
NET SALVAGE PERCENT.. 0						
1997	6,098.00	5,646	6,098			
2000	20,831.00	18,674	20,831			
2004	11,307.99	9,798	11,308			
2009	60,852.48	42,275	49,947	10,905	5.19	2,101
2011	227,310.08	133,445	157,662	69,648	7.02	9,921
2012	38,508.60	20,387	24,087	14,422	8.00	1,803
2016	20,450.12	6,015	7,107	13,343	12.00	1,112
2017	234,266.10	55,120	65,123	169,143	13.00	13,011
2019	424,426.74	49,934	58,995	365,432	15.00	24,362
	1,044,051.11	341,294	401,158	642,893		52,310
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.3 5.01

KENTUCKY UTILITIES COMPANY

ACCOUNT 397 COMMUNICATION EQUIPMENT - MICROWAVE, FIBER AND OTHER

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 19-L4						
NET SALVAGE PERCENT.. 0						
1999	452,972.59	374,536	409,487	43,486	3.29	13,218
2000	343,690.18	281,101	307,333	36,357	3.46	10,508
2001	419,682.11	340,383	372,147	47,535	3.59	13,241
2002	362,846.57	291,424	318,619	44,228	3.74	11,826
2003	504,201.93	399,646	436,940	67,262	3.94	17,072
2004	352,618.88	273,928	299,490	53,129	4.24	12,530
2005	68,862.55	51,937	56,784	12,079	4.67	2,587
2006	2,647,976.97	1,919,095	2,098,180	549,797	5.23	105,124
2007	2,267,401.44	1,563,305	1,709,188	558,213	5.90	94,612
2008	1,493,410.13	970,717	1,061,302	432,108	6.65	64,979
2009	1,220,712.43	742,059	811,306	409,406	7.45	54,954
2010	1,979,662.67	1,115,896	1,220,028	759,635	8.29	91,633
2011	2,779,441.80	1,438,000	1,572,190	1,207,252	9.17	131,652
2012	634,784.84	298,012	325,822	308,963	10.08	30,651
2013	841,007.21	352,777	385,697	455,310	11.03	41,279
2014	1,189,824.02	437,724	478,571	711,253	12.01	59,222
2015	8,303,445.85	2,622,145	2,866,836	5,436,610	13.00	418,201
2016	3,473,893.93	914,190	999,500	2,474,394	14.00	176,742
2017	236,436.94	49,777	54,422	182,015	15.00	12,134
2018	5,135,984.77	810,921	886,594	4,249,391	16.00	265,587
2019	939,092.83	98,849	108,073	831,020	17.00	48,884
2020	3,252,629.41	213,990	233,959	3,018,670	17.75	170,066
2021	4,007,848.36			4,007,848	19.00	210,939
	42,908,428.41	15,560,412	17,012,468	25,895,960		2,057,641
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.6 4.80

KENTUCKY UTILITIES COMPANY

ACCOUNT 397.1 COMMUNICATION EQUIPMENT - RADIO AND TELEPHONE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 10-SQUARE						
NET SALVAGE PERCENT.. 0						
2000	6,273,374.18	6,273,374	6,273,374			
2002	287,671.98	287,672	287,672			
2003	242,361.15	242,361	242,361			
2004	211,831.90	211,832	211,832			
2006	157,786.36	157,786	157,786			
2007	82,181.59	82,182	82,182			
2008	537,474.72	537,475	537,475			
2010	3,874,383.04	3,874,383	3,874,383			
2011	74,992.81	74,993	74,993			
2012	91,970.26	82,773	72,424	19,546	1.00	19,546
2013	104,220.12	83,376	72,952	31,268	2.00	15,634
2014	267,347.40	187,143	163,745	103,602	3.00	34,534
2015	5,574,334.78	3,344,601	2,926,433	2,647,902	4.00	661,976
2016	135,950.87	67,975	59,476	76,475	5.00	15,295
2017	767,235.40	306,894	268,524	498,711	6.00	83,118
2018	867,194.42	260,158	227,631	639,563	7.00	91,366
2019	4,685,646.23	937,129	819,962	3,865,684	8.00	483,210
	24,235,957.21	17,012,107	16,353,205	7,882,752		1,404,679
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						5.6 5.80

KENTUCKY UTILITIES COMPANY

ACCOUNT 397.2 COMMUNICATION EQUIPMENT - DSM

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF JUNE 30, 2021

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 10-SQUARE						
NET SALVAGE PERCENT.. 0						
2012	7,572,884.82	6,815,596	5,930,098	1,642,787	1.00	1,642,787
2020	1,107.31	138	120	987	8.75	113
2021	31,749.98			31,750	10.00	3,175
	7,605,742.11	6,815,734	5,930,218	1,675,524		1,646,075
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						1.0 21.64

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 20

Responding Witness: John J. Spanos

- Q-1-20. Please provide all net salvage and service life data inputs used within Gannett Fleming software that supports the Company's depreciation rates filed as Exhibit JJS-KU-2.
- A-1-20. See the response to Question No. 4 which sets forth the net salvage and service life data inputs used within the Gannett Fleming software to support the Company's depreciation rates filed as Exhibit JJS-KU-2. These are the same inputs as in Exhibit JJS-KU-1. See attached for the depreciation calculations based on June 30, 2021 balances.

Attachment to Response to DOD-FEA-1 Question No. 20

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AccountNum	GroupNumber	CompanyNumber	TransactionCode	TransactionYear	InstallationYear	Amount	AdjustedTY	Comments
30200			8	2021	1991	1,588.57		
30200			8	2021	1992	792.28		
30200			8	2021	1993	6,183.50		
30200			8	2021	1995	30,302.58		
30200			8	2021	1996	10,457.30		
30200			8	2021	1997	1,725.32		
30200			8	2021	1998	2,055.48		
30200			8	2021	1999	711.08		
30200			8	2021	2002	585.80		
30200			8	2021	2003	1,516.92		
30200			8	2021	2020	104,245.30		
30300			8	2021	2016	8,503,353.31		
30300			8	2021	2017	9,595,064.41		
30300			8	2021	2018	13,166,187.92		
30300			8	2021	2019	20,985,999.81		
30300			8	2021	2020	27,303,301.17		
30300			8	2021	2021	14,004,238.64		
30310	0001		8	2021	2011	2,098,773.95		
30310	0002		8	2021	2013	1,149,615.52		
30310	0002		8	2021	2017	14,448,869.46		
30310	0002		8	2021	2021	261,249.97		
30330			8	2021	2020	1,806,612.98		
31100	0321		8	2021	1990	34,663,846.89		
31100	0321		8	2021	1997	449,904.13		
31100	0321		8	2021	2002	24,848.68		
31100	0321		8	2021	2003	61,493.38		
31100	0321		8	2021	2008	53,301.70		
31100	0321		8	2021	2011	57,888,820.41		
31100	0321		8	2021	2012	377,820.80		
31100	0321		8	2021	2013	79,448.45		
31100	0321		8	2021	2014	158,517.38		
31100	0321		8	2021	2015	155,486.13		
31100	0321		8	2021	2016	856,320.10		
31100	0321		8	2021	2017	348,931.66		
31100	0321		8	2021	2018	637,412.19		
31100	0321		8	2021	2019	926,517.48		
31100	0321		8	2021	2020	1,047,244.84		
31100	0322		8	2021	1990	5,493,644.11		
31100	0322		8	2021	2012	62,807.35		
31100	0322		8	2021	2017	72,476.48		
31100	0322		8	2021	2018	152,942.40		
31100	0330		8	2021	2017	1,133,285.27		
31100	0330		8	2021	2018	21,280.84		
31100	0330		8	2021	2019	124,136.78		
31100	0330		8	2021	2020	8,235.59		
31100	5591		8	2021	1989	724,776.82		

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Spanos

31100	5591	8	2021	1990	58,100.00
31100	5591	8	2021	1994	6,176.00
31100	5591	8	2021	1997	16,663.00
31100	5591	8	2021	2011	19,253.00
31100	5591	8	2021	2012	255,306.75
31100	5591	8	2021	2014	8,935.37
31100	5591	8	2021	2015	13,745.45
31100	5591	8	2021	2017	14,162.74
31100	5591	8	2021	2018	6,101.17
31100	5591	8	2021	2020	55,167.01
31100	5621	8	2021	1956	2,193,997.50
31100	5621	8	2021	1958	380.33
31100	5621	8	2021	1965	281.95
31100	5621	8	2021	1979	12,522.62
31100	5621	8	2021	1982	90,968.64
31100	5621	8	2021	1983	1,961.01
31100	5621	8	2021	1984	5,201.79
31100	5621	8	2021	1985	1,845.50
31100	5621	8	2021	1987	43,061.54
31100	5621	8	2021	1988	45,166.06
31100	5621	8	2021	1989	64,088.70
31100	5621	8	2021	1990	657.05
31100	5621	8	2021	1991	23,138.98
31100	5621	8	2021	1994	656,487.76
31100	5621	8	2021	1996	42,323.43
31100	5621	8	2021	1997	72,432.68
31100	5621	8	2021	1998	11,051.85
31100	5621	8	2021	2004	59,425.01
31100	5621	8	2021	2005	71,551.08
31100	5621	8	2021	2006	35,799.23
31100	5621	8	2021	2007	85,223.92
31100	5621	8	2021	2008	436,073.68
31100	5621	8	2021	2014	8,908.38
31100	5622	8	2021	1963	1,267,982.45
31100	5622	8	2021	1965	11,589.52
31100	5622	8	2021	1979	24,545.95
31100	5622	8	2021	1980	399.92
31100	5622	8	2021	1992	96,409.90
31100	5622	8	2021	1997	19,477.46
31100	5622	8	2021	2004	43,200.52
31100	5622	8	2021	2005	5,793.58
31100	5622	8	2021	2007	565,018.59
31100	5622	8	2021	2009	21,690.24
31100	5622	8	2021	2012	133,555.40
31100	5622	8	2021	2015	91,828.24
31100	5622	8	2021	2016	12,530.96
31100	5623	8	2021	1967	1,439.36

31100	5623	8	2021	1968	93.78
31100	5623	8	2021	1971	7,451,297.36
31100	5623	8	2021	1972	56,622.84
31100	5623	8	2021	1973	11,989.24
31100	5623	8	2021	1974	2,997.48
31100	5623	8	2021	1975	15,090.67
31100	5623	8	2021	1977	1,211,007.22
31100	5623	8	2021	1979	8,693.34
31100	5623	8	2021	1980	275,133.52
31100	5623	8	2021	1983	3,926.67
31100	5623	8	2021	1984	146,396.81
31100	5623	8	2021	1985	37,537.44
31100	5623	8	2021	1986	44,517.64
31100	5623	8	2021	1987	251,076.37
31100	5623	8	2021	1988	56,877.87
31100	5623	8	2021	1989	471,664.74
31100	5623	8	2021	1990	17,135.65
31100	5623	8	2021	1991	68,354.92
31100	5623	8	2021	1992	756,242.53
31100	5623	8	2021	1993	84,657.94
31100	5623	8	2021	1995	22,955.79
31100	5623	8	2021	1997	196,842.15
31100	5623	8	2021	1998	127,912.46
31100	5623	8	2021	2001	83,858.28
31100	5623	8	2021	2003	122,637.26
31100	5623	8	2021	2004	122,242.40
31100	5623	8	2021	2005	95,122.81
31100	5623	8	2021	2007	8,000,318.76
31100	5623	8	2021	2009	191,682.81
31100	5623	8	2021	2010	423,785.73
31100	5623	8	2021	2011	43,315.26
31100	5623	8	2021	2012	602,754.91
31100	5623	8	2021	2013	504,010.74
31100	5623	8	2021	2014	966,147.92
31100	5623	8	2021	2015	57,109.99
31100	5623	8	2021	2016	3,483,224.15
31100	5623	8	2021	2017	2,574,482.38
31100	5623	8	2021	2018	580,647.62
31100	5623	8	2021	2019	353,349.29
31100	5623	8	2021	2020	13,473.90
31100	5623	8	2021	2021	564,300.00
31100	5630	8	2021	2013	45,235,689.37
31100	5630	8	2021	2015	146,854.51
31100	5630	8	2021	2018	170,802.81
31100	5650	8	2021	1997	8,362,584.36
31100	5650	8	2021	2007	34,607.76
31100	5650	8	2021	2018	94,006.52

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31100	5651	8	2021	1974	14,109,386.44
31100	5651	8	2021	1979	286,862.72
31100	5651	8	2021	1980	27,158.03
31100	5651	8	2021	1981	10,785.85
31100	5651	8	2021	1985	107,213.30
31100	5651	8	2021	1987	99,821.27
31100	5651	8	2021	1988	20,299.74
31100	5651	8	2021	1992	29,288.58
31100	5651	8	2021	1994	193,357.52
31100	5651	8	2021	1995	60,889.96
31100	5651	8	2021	1996	351,612.15
31100	5651	8	2021	2003	143,343.29
31100	5651	8	2021	2005	240,416.59
31100	5651	8	2021	2007	240,566.13
31100	5651	8	2021	2009	333,891.65
31100	5651	8	2021	2010	643,326.63
31100	5651	8	2021	2011	503,656.59
31100	5651	8	2021	2013	237,324.73
31100	5651	8	2021	2015	1,094,010.89
31100	5651	8	2021	2016	1,514,759.74
31100	5651	8	2021	2017	724,255.76
31100	5651	8	2021	2018	532,816.91
31100	5651	8	2021	2019	261,436.87
31100	5651	8	2021	2020	1,239,820.38
31100	5652	8	2021	1977	14,541,613.40
31100	5652	8	2021	1979	227,477.00
31100	5652	8	2021	1980	88,059.38
31100	5652	8	2021	1981	10,786.00
31100	5652	8	2021	1986	385,657.47
31100	5652	8	2021	1988	13,292.75
31100	5652	8	2021	1989	11,294.78
31100	5652	8	2021	1991	1,929.73
31100	5652	8	2021	1995	27,739.56
31100	5652	8	2021	1998	67,159.90
31100	5652	8	2021	2003	223,834.88
31100	5652	8	2021	2013	194,635.03
31100	5652	8	2021	2015	130,289.29
31100	5652	8	2021	2016	351,144.86
31100	5652	8	2021	2017	241,422.48
31100	5652	8	2021	2018	84,507.20
31100	5652	8	2021	2019	372,603.17
31100	5652	8	2021	2020	335,267.89
31100	5653	8	2021	1981	33,982,323.58
31100	5653	8	2021	1982	1,235,435.00
31100	5653	8	2021	1983	511.16
31100	5653	8	2021	1987	2,248,542.00
31100	5653	8	2021	1996	195,780.51

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31200	5660	8	2021	2016	437,112.31
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31200	5660	8	2021	2019	989,915.32
31200	5661	8	2021	2011	18,322.69
31200	5661	8	2021	2012	250,426,743.29
31200	5661	8	2021	2013	864,850.18
31200	5661	8	2021	2014	435,480.04
31200	5661	8	2021	2015	75,576.01
31200	5661	8	2021	2016	20,209.56
31200	5661	8	2021	2017	1,030,574.38
31200	5661	8	2021	2018	910,590.24
31200	5661	8	2021	2019	1,347,431.48
31200	5661	8	2021	2020	293,907.04
31210	0821	8	2021	1990	4,473,565.59
31210	0822	8	2021	2011	4,610,665.23
31210	6681	8	2021	1991	5,588,705.11
31210	6681	8	2021	1993	3,710,409.89
31210	6681	8	2021	2012	3,909,061.67
31210	6691	8	2021	1974	1,777,792.39
31210	6691	8	2021	1987	322,828.55
31210	6694	8	2021	1994	16,312,022.56
31210	6694	8	2021	1995	232,346.12
31210	6694	8	2021	2004	16,148,295.19
31210	6698	8	2021	1994	1,901,133.18
31400	0321	8	2021	1990	10,121,051.97
31400	0321	8	2021	2008	9,944,506.80
31400	0321	8	2021	2011	59,910,598.78
31400	0321	8	2021	2012	35,586.01
31400	0321	8	2021	2014	2,517,899.83
31400	0321	8	2021	2015	577,516.97
31400	0321	8	2021	2016	2,347,701.21
31400	0321	8	2021	2017	1,261,959.50
31400	0321	8	2021	2018	3,471,909.94
31400	0321	8	2021	2019	952,280.88

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31400	0321	8	2021	2020	131,951.02
31400	0321	8	2021	2021	5,489,998.26
31400	5621	8	2021	2010	0.03
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31400	5623	8	2021	2008	778,583.11
31400	5623	8	2021	2009	808,305.73
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31400	5623	8	2021	2015	1,343,417.01
31400	5623	8	2021	2016	75,474.58
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31400	5651	8	2021	1976	152.66
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31400	5651	8	2021	1989	249,993.57
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31400	5651	8	2021	2012	58,555.06
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31400	5651	8	2021	2016	700,761.08
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31400	5652	8	2021	2011	239,978.53
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31400	5652	8	2021	2013	1,335,382.88
31400	5652	8	2021	2014	115,184.46
31400	5652	8	2021	2015	248,188.17
31400	5652	8	2021	2016	347,543.79
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31400	5652	8	2021	2018	672,864.57
31400	5652	8	2021	2019	3,153,851.95
31400	5652	8	2021	2020	2,229,761.14
31400	5653	8	2021	1981	19,620,904.33
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31400	5653	8	2021	1995	1,247,748.39
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31400	5653	8	2021	1999	58,882.39
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31400	5653	8	2021	2009	903,710.75
31400	5653	8	2021	2011	576,717.87
31400	5653	8	2021	2012	1,299,911.95
31400	5653	8	2021	2013	524,964.11
31400	5653	8	2021	2016	448,428.60
31400	5653	8	2021	2017	514,817.42
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31400	5653	8	2021	2019	4,853,525.31
31400	5653	8	2021	2020	763,371.14
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31400	5654	8	2021	1985	236,534.50
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31400	5654	8	2021	1991	21,466.88
31400	5654	8	2021	1993	193,903.00
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31400	5654	8	2021	2003	3,698,827.95
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31400	5654	8	2021	2005	674,421.46
31400	5654	8	2021	2006	1,052,335.20
31400	5654	8	2021	2007	390,678.69
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31400	5654	8	2021	2011	9,948.80
31400	5654	8	2021	2012	3,948,340.06
31400	5654	8	2021	2013	765,793.74
31400	5654	8	2021	2014	2,163,026.93
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31400	5654	8	2021	2016	12,546.73
31400	5654	8	2021	2017	2,043,632.43
31400	5654	8	2021	2018	54,014.68
31400	5654	8	2021	2019	251,717.63
31400	5654	8	2021	2020	19,633,563.22
31400	5654	8	2021	2021	4,879,689.01
31500	0321	8	2021	1990	9,212,360.93
31500	0321	8	2021	2008	28,344.56
31500	0321	8	2021	2011	33,331,379.03

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31500	0321	8	2021	2012	1,088,194.59
31500	0321	8	2021	2013	159,449.60
31500	0321	8	2021	2014	447,854.18
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31500	0321	8	2021	2016	190,160.29
31500	0321	8	2021	2017	87,287.23
31500	0321	8	2021	2018	898,153.53
31500	0321	8	2021	2019	527,435.56
31500	0321	8	2021	2020	537,714.30
31500	0322	8	2021	1990	1,415,469.10
31500	5621	8	2021	1956	548,567.77
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31500	5621	8	2021	1995	936,565.99
31500	5621	8	2021	2006	697,006.12
31500	5621	8	2021	2009	166,049.72
31500	5621	8	2021	2010	19,084.61
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31500	5621	8	2021	2014	79,740.42
31500	5621	8	2021	2015	435,894.09
31500	5621	8	2021	2016	48,892.14
31500	5621	8	2021	2017	66,485.66
31500	5621	8	2021	2019	210,960.56
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31500	5622	8	2021	1994	185,597.00
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31500	5622	8	2021	1997	36,014.00
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31500	5622	8	2021	2014	20,568.37
31500	5622	8	2021	2016	11,513.95
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31500	5623	8	2021	1974	17,025.00
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31500	5623	8	2021	1991	5,344.58
31500	5623	8	2021	1997	778,846.00
31500	5623	8	2021	2003	45,349.90
31500	5623	8	2021	2004	18,213.04
31500	5623	8	2021	2005	6,057.20
31500	5623	8	2021	2007	1,652,556.67
31500	5623	8	2021	2010	208,220.77

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31500	5623	8	2021	2011	163,301.43
31500	5623	8	2021	2012	1,510,611.21
31500	5623	8	2021	2013	14,410.13
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31500	5623	8	2021	2015	131,881.19
31500	5623	8	2021	2016	6,475,762.92
31500	5623	8	2021	2018	542,989.25
31500	5623	8	2021	2019	103,868.80
31500	5623	8	2021	2020	329,421.53
31500	5623	8	2021	2021	391,782.63
31500	5630	8	2021	2013	29,170,942.24
31500	5630	8	2021	2017	15,559.37
31500	5650	8	2021	1997	2,978,785.13
31500	5650	8	2021	2011	5,833.85
31500	5650	8	2021	2012	9,121,453.85
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31500	5651	8	2021	1978	851,482.92
31500	5651	8	2021	1994	911,155.00
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31500	5651	8	2021	1996	15,852.00
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31500	5651	8	2021	2005	160,601.93
31500	5651	8	2021	2007	53,989.17
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31500	5651	8	2021	2012	178,069.98
31500	5651	8	2021	2013	43,107.20
31500	5651	8	2021	2014	33,762.45
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31500	5651	8	2021	2016	127,767.94
31500	5651	8	2021	2017	123,589.14
31500	5651	8	2021	2018	297,909.87
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31500	5651	8	2021	2020	66,418.08
31500	5652	8	2021	1977	9,212,904.67
31500	5652	8	2021	1984	2,100,053.81
31500	5652	8	2021	1989	42,801.92
31500	5652	8	2021	1996	44,978.99
31500	5652	8	2021	1997	152,868.92
31500	5652	8	2021	2007	95,312.10
31500	5652	8	2021	2009	292,925.23
31500	5652	8	2021	2010	60,449.95
31500	5652	8	2021	2011	1,111,858.00
31500	5652	8	2021	2012	34,908.72
31500	5652	8	2021	2013	66,340.84

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31500	5652	8	2021	2014	81,708.97
31500	5652	8	2021	2015	2,455,549.75
31500	5652	8	2021	2018	230,069.90
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31500	5653	8	2021	1976	639,635.42
31500	5653	8	2021	1981	25,017,471.61
31500	5653	8	2021	1982	687,842.97
31500	5653	8	2021	1984	95,821.00
31500	5653	8	2021	1987	68,793.51
31500	5653	8	2021	1988	18,279.36
31500	5653	8	2021	2000	4,283,840.81
31500	5653	8	2021	2007	51,757.15
31500	5653	8	2021	2012	72,766.46
31500	5653	8	2021	2013	10,609.78
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31500	5653	8	2021	2016	18,243.03
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31500	5654	8	2021	1985	48,262.01
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31500	5654	8	2021	2021	450,340.95
31500	5658	8	2021	2011	5,833.85
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31500	5660	8	2021	2007	11,277,366.96
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31500	5661	8	2021	2011	5,833.83
31500	5661	8	2021	2012	15,142,207.72
31600	0321	8	2021	2000	41,467.41
31600	0321	8	2021	2002	26,900.64
31600	0321	8	2021	2011	4,518,875.83

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31600	0321	8	2021	2012	124,070.29
31600	0321	8	2021	2013	838,229.79
31600	0321	8	2021	2014	593,898.10
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31600	0321	8	2021	2016	125,813.18
31600	0321	8	2021	2017	689,012.44
31600	0321	8	2021	2018	433,287.83
31600	0321	8	2021	2019	180,678.43
31600	0321	8	2021	2020	144,259.40
31600	0321	8	2021	2021	422,539.92
31600	5591	8	2021	1983	229.68
31600	5591	8	2021	1984	10,283.72
31600	5591	8	2021	1986	48,397.00
31600	5591	8	2021	1987	100,806.00
31600	5591	8	2021	1989	3,576.00
31600	5591	8	2021	1990	22,201.79
31600	5591	8	2021	1991	72,843.39
31600	5591	8	2021	1994	4,476.87
31600	5591	8	2021	1995	3,198.74
31600	5591	8	2021	1996	5,552.69
31600	5591	8	2021	1997	47,150.16
31600	5591	8	2021	1998	67,015.37
31600	5591	8	2021	1999	62,975.53
31600	5591	8	2021	2000	730.00
31600	5591	8	2021	2002	276,203.04
31600	5591	8	2021	2003	632,334.03
31600	5591	8	2021	2004	199,225.39
31600	5591	8	2021	2005	131,911.92
31600	5591	8	2021	2006	31,404.52
31600	5591	8	2021	2007	89,149.53
31600	5591	8	2021	2009	212,514.89
31600	5591	8	2021	2010	90,044.40
31600	5591	8	2021	2011	245,283.88
31600	5591	8	2021	2012	175,216.25
31600	5591	8	2021	2013	161,221.62
31600	5591	8	2021	2014	294,272.69
31600	5591	8	2021	2015	38,318.47
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31600	5591	8	2021	2018	126,318.97
31600	5591	8	2021	2019	46,527.57
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31600	5621	8	2021	1954	7,308.72
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31600	5621	8	2021	2011	8,037.82
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31600	5622	8	2021	1963	36,651.30
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31600	5623	8	2021	1970	2,634.00
31600	5623	8	2021	1971	323,273.84
31600	5623	8	2021	1972	14,486.08
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31600	5623	8	2021	1974	3,179.00
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31600	5623	8	2021	1977	39,153.91
31600	5623	8	2021	1978	1,537.00
31600	5623	8	2021	1980	769.95
31600	5623	8	2021	1981	7,296.00
31600	5623	8	2021	1982	1.31
31600	5623	8	2021	1983	52,115.16
31600	5623	8	2021	1984	4,624.74
31600	5623	8	2021	1985	8,678.68
31600	5623	8	2021	1986	146,238.43
31600	5623	8	2021	1987	209,971.72
31600	5623	8	2021	1988	125,761.26
31600	5623	8	2021	1989	210,175.64
31600	5623	8	2021	1990	326,556.15
31600	5623	8	2021	1991	378,859.70
31600	5623	8	2021	1992	143,407.00
31600	5623	8	2021	1993	213,117.96
31600	5623	8	2021	1994	243,236.46
31600	5623	8	2021	1995	378,604.30
31600	5623	8	2021	1996	132,026.00
31600	5623	8	2021	1997	113,295.86
31600	5623	8	2021	1998	16,759.09
31600	5623	8	2021	1999	78,147.46
31600	5623	8	2021	2000	12,638.00
31600	5623	8	2021	2001	61,005.75
31600	5623	8	2021	2003	183,331.37
31600	5623	8	2021	2004	87,825.06
31600	5623	8	2021	2005	126,190.46
31600	5623	8	2021	2006	93,259.29
31600	5623	8	2021	2007	109,967.17
31600	5623	8	2021	2008	76,267.72
31600	5623	8	2021	2009	25,225.68
31600	5623	8	2021	2010	497,669.44

31600	5623	8	2021	2011	184,777.66
31600	5623	8	2021	2012	256,120.18
31600	5623	8	2021	2013	319,773.21
31600	5623	8	2021	2014	306,820.21
31600	5623	8	2021	2015	417,186.02
31600	5623	8	2021	2016	191,888.31
31600	5623	8	2021	2017	201,975.09
31600	5623	8	2021	2018	285,176.12
31600	5623	8	2021	2019	385,889.45
31600	5623	8	2021	2020	784,536.15
31600	5623	8	2021	2021	614,995.69
31600	5650	8	2021	1997	911,941.17
31600	5650	8	2021	2000	2,454.00
31600	5650	8	2021	2011	47,617.08
31600	5651	8	2021	1974	1,000,240.70
31600	5651	8	2021	1976	12,253.24
31600	5651	8	2021	1978	6,426.72
31600	5651	8	2021	1983	4,043.88
31600	5651	8	2021	1988	74,936.00
31600	5651	8	2021	1989	2,178.22
31600	5651	8	2021	1990	137,000.67
31600	5651	8	2021	1994	52,592.00
31600	5651	8	2021	1995	11,112.00
31600	5651	8	2021	1996	153,652.05
31600	5651	8	2021	1997	18,479.01
31600	5651	8	2021	1998	2,709.00
31600	5651	8	2021	1999	79,194.16
31600	5651	8	2021	2000	2,880.81
31600	5651	8	2021	2004	42,569.91
31600	5651	8	2021	2006	30,770.07
31600	5651	8	2021	2007	7,433.84
31600	5651	8	2021	2013	68,502.65
31600	5651	8	2021	2015	42,125.60
31600	5651	8	2021	2020	184,403.86
31600	5651	8	2021	2021	45,146.22
31600	5652	8	2021	1976	97,461.37
31600	5652	8	2021	1977	639,500.31
31600	5652	8	2021	1978	591,177.00
31600	5652	8	2021	1985	6,645.13
31600	5652	8	2021	1989	51,128.40
31600	5652	8	2021	1990	7,692.02
31600	5652	8	2021	1991	6,857.97
31600	5652	8	2021	1992	50,988.28
31600	5652	8	2021	2006	15,073.78
31600	5652	8	2021	2007	7,433.84
31600	5652	8	2021	2013	17,365.58
31600	5652	8	2021	2014	9,654.84

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31600	5652	8	2021	2017	44,259.78
31600	5652	8	2021	2020	41,598.38
31600	5653	8	2021	1981	2,065,847.73
31600	5653	8	2021	1982	217,424.29
31600	5653	8	2021	1983	4,043.88
31600	5653	8	2021	1984	596,809.17
31600	5653	8	2021	1987	14,126.58
31600	5653	8	2021	1988	8,279.00
31600	5653	8	2021	1993	31,841.79
31600	5653	8	2021	1994	1,429.72
31600	5653	8	2021	2004	70,857.65
31600	5653	8	2021	2007	56,110.00
31600	5653	8	2021	2013	8,682.80
31600	5653	8	2021	2014	558,116.44
31600	5653	8	2021	2016	70,989.53
31600	5653	8	2021	2018	17,259.51
31600	5653	8	2021	2020	83,211.33
31600	5654	8	2021	1984	1,544,418.16
31600	5654	8	2021	1985	58,802.17
31600	5654	8	2021	1986	61,142.00
31600	5654	8	2021	1987	193,658.18
31600	5654	8	2021	1988	237,326.27
31600	5654	8	2021	1989	273,886.78
31600	5654	8	2021	1990	240,634.03
31600	5654	8	2021	1991	221,855.20
31600	5654	8	2021	1992	184,249.51
31600	5654	8	2021	1993	119,139.71
31600	5654	8	2021	1994	89,572.74
31600	5654	8	2021	1995	372,839.16
31600	5654	8	2021	1996	145,959.58
31600	5654	8	2021	1997	254,446.40
31600	5654	8	2021	1998	16,091.52
31600	5654	8	2021	1999	624,330.63
31600	5654	8	2021	2000	69,721.20
31600	5654	8	2021	2003	222,134.20
31600	5654	8	2021	2004	258,361.73
31600	5654	8	2021	2005	112,399.55
31600	5654	8	2021	2006	15,034.08
31600	5654	8	2021	2007	167,507.71
31600	5654	8	2021	2008	38,205.62
31600	5654	8	2021	2009	38,356.93
31600	5654	8	2021	2010	818,567.66
31600	5654	8	2021	2011	520,622.64
31600	5654	8	2021	2012	693,319.39
31600	5654	8	2021	2013	65,400.12
31600	5654	8	2021	2014	109,137.92
31600	5654	8	2021	2015	801,502.06

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31600	5654	8	2021	2016	380,311.91
31600	5654	8	2021	2017	711,426.16
31600	5654	8	2021	2018	1,049,709.06
31600	5654	8	2021	2019	1,878,472.63
31600	5654	8	2021	2020	2,060,669.73
31600	5654	8	2021	2021	520,042.78
33010	5691	8	2021	1941	855,636.47
33100	5691	8	2021	1941	207,172.59
33100	5691	8	2021	1967	1,469.92
33100	5691	8	2021	1988	21,653.46
33100	5691	8	2021	1990	54,778.00
33100	5691	8	2021	1991	77,146.00
33100	5691	8	2021	1992	1,037.00
33100	5691	8	2021	2005	23,670.29
33100	5691	8	2021	2007	66,025.06
33100	5691	8	2021	2009	11,732.37
33100	5691	8	2021	2010	75,260.09
33100	5691	8	2021	2012	31,110.92
33100	5691	8	2021	2013	6,860.35
33100	5691	8	2021	2014	224,345.64
33100	5691	8	2021	2016	2,174,143.44
33100	5691	8	2021	2018	1,368,507.62
33100	5691	8	2021	2019	181,701.44
33100	5691	8	2021	2020	401.50
33200	5691	8	2021	1941	5,868,664.83
33200	5691	8	2021	1944	862.00
33200	5691	8	2021	1950	228,186.49
33200	5691	8	2021	1971	3,719.85
33200	5691	8	2021	1990	7,354.12
33200	5691	8	2021	1991	1,200,006.00
33200	5691	8	2021	1992	370,020.00
33200	5691	8	2021	1993	16,470.00
33200	5691	8	2021	1994	10,861.26
33200	5691	8	2021	2003	136,421.67
33200	5691	8	2021	2007	1,072,820.18
33200	5691	8	2021	2008	842,093.55
33200	5691	8	2021	2011	300,776.20
33200	5691	8	2021	2012	11,493,426.01
33200	5691	8	2021	2014	297,790.55
33200	5691	8	2021	2015	34,972.15
33200	5691	8	2021	2020	100,000.00
33300	5691	8	2021	1941	47,034.96
33300	5691	8	2021	1957	67,525.73
33300	5691	8	2021	1958	4,342.00
33300	5691	8	2021	1992	12,412.14
33300	5691	8	2021	1997	24,821.62
33300	5691	8	2021	2005	1,992.81

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33300	5691	8	2021	2008	62,158.95
33300	5691	8	2021	2010	4,035,403.02
33300	5691	8	2021	2012	4,177,975.81
33300	5691	8	2021	2013	5,285,996.18
33300	5691	8	2021	2015	327,078.36
33400	5691	8	2021	1941	7,924.89
33400	5691	8	2021	1947	10,865.00
33400	5691	8	2021	1950	411.49
33400	5691	8	2021	1952	206.57
33400	5691	8	2021	1953	772.14
33400	5691	8	2021	1960	1,738.80
33400	5691	8	2021	1961	51.62
33400	5691	8	2021	1962	3,724.00
33400	5691	8	2021	1963	156.52
33400	5691	8	2021	1974	3,361.98
33400	5691	8	2021	1975	4,094.59
33400	5691	8	2021	1989	5,503.19
33400	5691	8	2021	2010	486,152.97
33400	5691	8	2021	2012	401,455.77
33400	5691	8	2021	2013	341,346.54
33400	5691	8	2021	2014	7,365.24
33400	5691	8	2021	2016	40,896.02
33400	5691	8	2021	2017	19,285.88
33400	5691	8	2021	2020	29,487.84
33500	5691	8	2021	1941	3,020.11
33500	5691	8	2021	1947	1,160.75
33500	5691	8	2021	1948	65.00
33500	5691	8	2021	1949	41.43
33500	5691	8	2021	1951	59.26
33500	5691	8	2021	1952	2.05
33500	5691	8	2021	1962	18,423.86
33500	5691	8	2021	1988	185,484.40
33500	5691	8	2021	1990	1,449.67
33500	5691	8	2021	1992	11,230.37
33500	5691	8	2021	1994	22,393.40
33500	5691	8	2021	1995	14,300.79
33500	5691	8	2021	1996	9,512.12
33500	5691	8	2021	2003	4,481.37
33500	5691	8	2021	2010	10,026.50
33500	5691	8	2021	2014	35,295.66
33500	5691	8	2021	2017	12,427.44
33600	5691	8	2021	1941	11,366.83
33600	5691	8	2021	2009	129,383.46
33600	5691	8	2021	2015	58,149.54
34010	5645	8	2021	1994	167,723.31
34010	5645	8	2021	1995	8,686.00
34100	0172	8	2021	2015	47,492,781.25

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34100	0172	8	2021	2016	62,902.47
34100	0172	8	2021	2017	1,572,819.99
34100	0172	8	2021	2018	1,388,667.78
34100	0172	8	2021	2019	334,730.91
34100	0172	8	2021	2020	152,097.05
34100	0470	8	2021	2002	3,566,217.06
34100	0470	8	2021	2004	27,551.15
34100	0470	8	2021	2006	146,463.11
34100	0471	8	2021	2002	3,564,353.91
34100	0471	8	2021	2004	24,330.33
34100	0474	8	2021	2004	3,559,154.97
34100	0475	8	2021	2004	3,548,851.71
34100	0476	8	2021	2004	3,655,976.41
34100	0477	8	2021	2004	3,653,029.99
34100	0477	8	2021	2017	741,840.00
34100	0477	8	2021	2018	19,553.77
34100	5635	8	2021	2001	673,822.59
34100	5635	8	2021	2002	1,116.00
34100	5635	8	2021	2004	19,933.20
34100	5635	8	2021	2015	10,818.38
34100	5635	8	2021	2016	347,324.52
34100	5636	8	2021	1999	109,305.33
34100	5636	8	2021	2005	37,546.34
34100	5636	8	2021	2006	20,493.70
34100	5636	8	2021	2019	48,638.79
34100	5637	8	2021	1999	481,712.77
34100	5637	8	2021	2002	4,117.50
34100	5637	8	2021	2005	45,573.77
34100	5637	8	2021	2006	2,042.62
34100	5637	8	2021	2015	22,546.10
34100	5638	8	2021	1994	143,346.95
34100	5638	8	2021	1995	1,730,556.00
34100	5638	8	2021	1997	120,183.00
34100	5638	8	2021	2001	18,569.00
34100	5639	8	2021	1994	2,477,163.92
34100	5639	8	2021	1995	512,980.00
34100	5639	8	2021	1996	438,868.00
34100	5639	8	2021	1997	1,190,538.00
34100	5639	8	2021	2001	18,569.00
34100	5639	8	2021	2012	6,254.64
34100	5639	8	2021	2013	15,782.48
34100	5640	8	2021	1995	1,751,485.20
34100	5640	8	2021	1997	95,664.00
34100	5640	8	2021	2001	18,569.00
34100	5641	8	2021	1996	1,321,515.93
34100	5641	8	2021	1997	65,678.00
34100	5641	8	2021	1998	313,025.00

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34100	5641	8	2021	2001	81,269.00
34100	5641	8	2021	2004	56,158.33
34100	5641	8	2021	2011	36,259.52
34100	5641	8	2021	2013	45,109.35
34100	5648	8	2021	2016	1,443,810.04
34100	5696	8	2021	1994	3,638.00
34100	5696	8	2021	2000	287,491.35
34100	5696	8	2021	2013	322.20
34100	5697	8	2021	2001	1,902,531.27
34100	5697	8	2021	2002	3,883.00
34100	5697	8	2021	2013	42,179.89
34100	5697	8	2021	2015	178,139.73
34100	5697	8	2021	2016	8,143.22
34100	5697	8	2021	2017	47,638.30
34100	5697	8	2021	2018	16,370.00
34100	6001	8	2021	2019	800,780.88
34100	6001	8	2021	2020	12,897.32
34200	0172	8	2021	2015	6,319,398.10
34200	0172	8	2021	2017	276,120.00
34200	0173	8	2021	2015	23,410,569.22
34200	0433	8	2021	2016	6,851,592.10
34200	0470	8	2021	2002	237,747.79
34200	0470	8	2021	2004	1,836.64
34200	0471	8	2021	2002	237,623.60
34200	0471	8	2021	2004	1,621.94
34200	0473	8	2021	2002	4,474,853.28
34200	0473	8	2021	2005	369,111.16
34200	0473	8	2021	2006	6,150.29
34200	0473	8	2021	2013	6,019.92
34200	0473	8	2021	2017	785,616.17
34200	0474	8	2021	2004	578,059.38
34200	0475	8	2021	2004	576,385.74
34200	0476	8	2021	2004	593,786.01
34200	0477	8	2021	2004	593,307.31
34200	0477	8	2021	2007	29,565.29
34200	0477	8	2021	2017	164,340.00
34200	5635	8	2021	2001	562,558.04
34200	5635	8	2021	2002	837.00
34200	5635	8	2021	2010	232,392.85
34200	5636	8	2021	1999	89,103.45
34200	5636	8	2021	2009	20,420.52
34200	5636	8	2021	2010	232,392.75
34200	5636	8	2021	2011	64,543.29
34200	5636	8	2021	2014	553,157.19
34200	5636	8	2021	2018	33,875.91
34200	5637	8	2021	1999	87,848.59
34200	5637	8	2021	2009	21,086.20

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34200	5637	8	2021	2010	232,392.85
34200	5637	8	2021	2011	64,543.31
34200	5637	8	2021	2014	553,157.16
34200	5638	8	2021	1995	2,370.10
34200	5638	8	2021	1997	1,827.00
34200	5638	8	2021	2010	232,392.85
34200	5638	8	2021	2012	26,455.57
34200	5639	8	2021	1994	82,736.81
34200	5639	8	2021	1995	1,271,203.00
34200	5639	8	2021	1996	198,281.39
34200	5639	8	2021	1997	219,834.00
34200	5639	8	2021	2010	232,392.85
34200	5639	8	2021	2012	26,455.55
34200	5639	8	2021	2013	1,019,249.16
34200	5639	8	2021	2014	105,015.81
34200	5639	8	2021	2020	21,101,242.13
34200	5640	8	2021	1995	21,944.22
34200	5640	8	2021	1997	1,653.00
34200	5640	8	2021	2010	232,392.85
34200	5640	8	2021	2012	26,455.57
34200	5641	8	2021	1996	16,452.45
34200	5641	8	2021	1997	18,693.00
34200	5641	8	2021	1998	7,567.00
34200	5641	8	2021	2010	232,392.85
34200	5641	8	2021	2012	26,455.57
34200	5645	8	2021	1994	7,687,474.69
34200	5645	8	2021	1998	206.00
34200	5645	8	2021	1999	381,882.00
34200	5645	8	2021	2003	36,567.97
34200	5645	8	2021	2013	68,291.83
34200	5645	8	2021	2015	33,700.20
34200	5645	8	2021	2016	138,543.29
34200	5696	8	2021	1970	29,175.92
34200	5696	8	2021	1971	16,121.21
34200	5696	8	2021	1973	245.00
34200	5696	8	2021	1977	18,105.67
34200	5696	8	2021	2011	350,911.66
34200	5696	8	2021	2018	15,804.86
34200	5696	8	2021	2019	66,093.35
34200	5697	8	2021	2001	1,952,323.88
34200	5697	8	2021	2002	4,531.00
34200	5697	8	2021	2005	19,123.07
34200	5697	8	2021	2014	1,990.13
34300	0172	8	2021	2015	242,372,158.47
34300	0172	8	2021	2016	207,310.50
34300	0172	8	2021	2017	8,880,558.11
34300	0172	8	2021	2018	832,950.55

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34300	0172	8	2021	2019	1,458,274.43
34300	0172	8	2021	2020	21,308,049.55
34300	0172	8	2021	2021	749,772.72
34300	0470	8	2021	2002	28,126,888.59
34300	0470	8	2021	2004	535,878.89
34300	0470	8	2021	2006	139,712.62
34300	0470	8	2021	2007	41,824.49
34300	0470	8	2021	2010	35,842.85
34300	0470	8	2021	2011	504,489.32
34300	0470	8	2021	2012	2,767,405.85
34300	0470	8	2021	2013	20,239.38
34300	0470	8	2021	2014	84,338.50
34300	0470	8	2021	2016	1,473,358.73
34300	0470	8	2021	2017	2,359,071.33
34300	0470	8	2021	2018	50,661.89
34300	0470	8	2021	2019	32,613.58
34300	0470	8	2021	2020	456,393.93
34300	0470	8	2021	2021	10,168,621.57
34300	0471	8	2021	2002	28,065,525.56
34300	0471	8	2021	2004	615,389.01
34300	0471	8	2021	2007	9,593.87
34300	0471	8	2021	2009	15,420.35
34300	0471	8	2021	2010	17,172.22
34300	0471	8	2021	2011	2,137,560.66
34300	0471	8	2021	2012	823,396.88
34300	0471	8	2021	2013	1,203,046.01
34300	0471	8	2021	2014	84,314.06
34300	0471	8	2021	2016	1,774,933.18
34300	0471	8	2021	2021	274,711.50
34300	0474	8	2021	2004	19,953,603.76
34300	0474	8	2021	2006	404,108.42
34300	0474	8	2021	2007	4,356.44
34300	0474	8	2021	2011	447,639.13
34300	0474	8	2021	2012	3,194,626.52
34300	0474	8	2021	2013	17,078.59
34300	0474	8	2021	2014	74,826.31
34300	0474	8	2021	2018	2,639,482.46
34300	0474	8	2021	2020	29,391.63
34300	0475	8	2021	2004	20,538,649.40
34300	0475	8	2021	2006	294,116.88
34300	0475	8	2021	2007	4,356.44
34300	0475	8	2021	2010	17,172.20
34300	0475	8	2021	2011	447,639.11
34300	0475	8	2021	2012	3,146,258.75
34300	0475	8	2021	2013	257,690.19
34300	0475	8	2021	2014	272,690.21
34300	0475	8	2021	2018	167,995.80

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Spanos

34300	0475	8	2021	2019	239,003.70
34300	0476	8	2021	2004	20,581,861.09
34300	0476	8	2021	2006	293,790.76
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34300	0476	8	2021	2009	193,345.44
34300	0476	8	2021	2010	17,140.31
34300	0476	8	2021	2011	446,821.76
34300	0476	8	2021	2012	3,058,212.57
34300	0476	8	2021	2013	17,048.40
34300	0476	8	2021	2014	74,696.78
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34300	0476	8	2021	2020	177,885.52
34300	0477	8	2021	2004	20,520,106.19
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34300	0477	8	2021	2009	15,359.30
34300	0477	8	2021	2011	445,974.29
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34300	0477	8	2021	2013	2,332,742.32
34300	0477	8	2021	2014	99,247.10
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34300	0477	8	2021	2019	584,357.32
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34300	5697	8	2021	2002	37,538.00
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34300	5697	8	2021	2017	132,655.46
34300	5697	8	2021	2019	197,451.18
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34400	0172	8	2021	2018	3,926,958.26
34400	0172	8	2021	2019	55,673.45
34400	0172	8	2021	2020	14,319.12
34400	0470	8	2021	2002	3,727,131.97
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34400	0470	8	2021	2012	37,125.91
34400	0470	8	2021	2016	197,740.51
34400	0470	8	2021	2017	11,119.38
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34400	0471	8	2021	2004	25,477.86
34400	0471	8	2021	2012	37,125.91
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34400	0474	8	2021	2004	2,897,246.55
34400	0474	8	2021	2012	32,943.60
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34400	0475	8	2021	2004	2,884,921.85
34400	0475	8	2021	2012	32,943.58
34400	0475	8	2021	2016	15,495.88

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34400	0476	8	2021	2017	8,152.66
34400	0477	8	2021	2004	2,858,898.17
34400	0477	8	2021	2012	32,662.90
34400	0477	8	2021	2016	17,722.17
34400	0477	8	2021	2017	316,212.04
34400	0477	8	2021	2020	212,210.95
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34400	5635	8	2021	2002	3,906.00
34400	5635	8	2021	2011	67,603.05
34400	5635	8	2021	2012	8,674.12
34400	5635	8	2021	2017	11,722.36
34400	5635	8	2021	2018	214,847.52
34400	5636	8	2021	1999	3,299,781.01
34400	5636	8	2021	2012	8,674.11
34400	5636	8	2021	2017	14,121.88
34400	5637	8	2021	1999	3,494,399.87
34400	5637	8	2021	2001	29,668.00
34400	5637	8	2021	2012	8,674.11
34400	5637	8	2021	2017	9,540.89
34400	5637	8	2021	2019	330,676.16
34400	5638	8	2021	1995	4,898,303.90
34400	5638	8	2021	2012	8,674.11
34400	5638	8	2021	2017	162,368.84
34400	5639	8	2021	1994	5,278,019.61
34400	5639	8	2021	1995	118,873.00
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34400	5639	8	2021	2017	166,819.24
34400	5640	8	2021	1995	4,723,695.32
34400	5640	8	2021	2012	8,674.11
34400	5640	8	2021	2017	160,707.99
34400	5640	8	2021	2018	97,189.20
34400	5641	8	2021	1996	4,380,722.17
34400	5641	8	2021	1997	119,111.00
34400	5641	8	2021	2012	8,674.11
34400	5641	8	2021	2013	1,061,783.54
34400	5641	8	2021	2017	159,599.17
34400	5648	8	2021	2016	13,068,659.23
34400	5696	8	2021	1970	2,280,419.06
34400	5696	8	2021	1971	146,547.00
34400	5696	8	2021	1975	18,497.00
34400	5696	8	2021	2001	236,672.62
34400	5697	8	2021	2001	4,940,529.59

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34400	5697	8	2021	2002	11,002.00
34400	5697	8	2021	2012	26,588.67
34400	5697	8	2021	2014	23,196.65
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34400	5697	8	2021	2018	12,559.21
34400	5697	8	2021	2019	308,025.59
34400	6001	8	2021	2019	279,373.45
34400	6001	8	2021	2020	436,615.48
34400	6100	8	2021	2020	247,885.69
34500	0172	8	2021	2015	18,137,467.80
34500	0172	8	2021	2017	6,212,379.94
34500	0172	8	2021	2019	61,073.06
34500	0172	8	2021	2020	177,340.73
34500	0470	8	2021	2002	1,605,793.77
34500	0470	8	2021	2004	12,857.15
34500	0470	8	2021	2011	24,962.92
34500	0470	8	2021	2012	68,399.27
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34500	0470	8	2021	2019	103,924.48
34500	0470	8	2021	2020	152,617.00
34500	0471	8	2021	2002	4,273,501.25
34500	0471	8	2021	2004	11,354.12
34500	0471	8	2021	2012	5,249.63
34500	0471	8	2021	2014	207,248.18
34500	0471	8	2021	2016	79,472.18
34500	0474	8	2021	2004	3,100,555.26
34500	0474	8	2021	2009	2,204.23
34500	0474	8	2021	2012	22,579.92
34500	0474	8	2021	2013	50,147.90
34500	0474	8	2021	2014	445,207.65
34500	0474	8	2021	2016	70,517.58
34500	0475	8	2021	2004	3,137,127.45
34500	0475	8	2021	2009	2,204.23
34500	0475	8	2021	2012	5,249.63
34500	0475	8	2021	2014	178,150.40
34500	0476	8	2021	2004	3,222,176.42
34500	0476	8	2021	2009	2,204.19
34500	0476	8	2021	2012	22,579.92
34500	0477	8	2021	2004	7,144,489.03
34500	0477	8	2021	2009	2,204.23
34500	0477	8	2021	2011	49,925.08
34500	0477	8	2021	2012	5,249.63
34500	0477	8	2021	2013	59,208.10
34500	0477	8	2021	2014	238,412.63
34500	0477	8	2021	2017	3,227,114.17
34500	5635	8	2021	2001	2,262,097.84
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34500	5635	8	2021	2012	33,212.26
34500	5635	8	2021	2020	27,388.25
34500	5636	8	2021	1999	1,930,284.42
34500	5636	8	2021	2010	44,931.99
34500	5636	8	2021	2012	41,923.74
34500	5636	8	2021	2013	9,502.80
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34500	5636	8	2021	2020	116,762.73
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34500	5637	8	2021	2012	41,923.74
34500	5637	8	2021	2013	9,502.80
34500	5637	8	2021	2019	274,110.01
34500	5637	8	2021	2020	36,113.33
34500	5638	8	2021	1993	1,248,083.99
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34500	5638	8	2021	1997	302,783.00
34500	5638	8	2021	2007	10,526.68
34500	5638	8	2021	2012	530,214.36
34500	5638	8	2021	2014	159,624.16
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34500	5638	8	2021	2020	245,088.06
34500	5639	8	2021	1994	1,895,387.28
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34500	5639	8	2021	1996	293,484.00
34500	5639	8	2021	1997	336,423.00
34500	5639	8	2021	2011	217,486.58
34500	5639	8	2021	2012	353,258.42
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34500	5639	8	2021	2017	15,008.67
34500	5639	8	2021	2021	306,531.50
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34500	5640	8	2021	1997	320,442.00
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34500	5641	8	2021	1996	1,767,686.75
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34500	5641	8	2021	2014	173,988.88
34500	5648	8	2021	2016	445,469.72
34500	5696	8	2021	1970	199,408.97
34500	5696	8	2021	1971	41,999.00
34500	5696	8	2021	1973	2,825.81
34500	5696	8	2021	2007	19,643.19

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34500	5696	8	2021	2012	552,386.44
34500	5697	8	2021	2001	2,416,310.20
34500	5697	8	2021	2002	5,178.00
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34500	5697	8	2021	2015	42,575.01
34500	5697	8	2021	2020	15,465.29
34500	6001	8	2021	2019	329,568.03
34500	6100	8	2021	2020	155,657.54
34600	0172	8	2021	2015	3,049,375.67
34600	0172	8	2021	2018	98,158.41
34600	0172	8	2021	2019	101,665.44
34600	0470	8	2021	2006	15,274.16
34600	0470	8	2021	2007	13,689.47
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34600	0475	8	2021	2004	8,861.01
34600	0476	8	2021	2004	9,113.52
34600	0477	8	2021	2004	9,105.52
34600	0477	8	2021	2010	26,747.06
34600	0477	8	2021	2011	6,015.93
34600	5635	8	2021	2001	2,055,406.39
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34600	5636	8	2021	2001	2,144.00
34600	5636	8	2021	2003	16,198.37
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34600	5636	8	2021	2015	47,513.99
34600	5636	8	2021	2019	16,805.14
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34600	5639	8	2021	2014	66,684.25

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34600	5641	8	2021	2018	26,328.64
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34600	5696	8	2021	1973	113.00
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34600	6001	8	2021	2019	30,340.85
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35010		8	2021	1942	27,091.62
35010		8	2021	1943	1,077.00
35010		8	2021	1944	860.00
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35010		8	2021	1946	38,829.00
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35010		8	2021	1951	104,789.00
35010		8	2021	1952	186,048.00
35010		8	2021	1953	409,306.00
35010		8	2021	1954	108,821.00
35010		8	2021	1955	85,914.00
35010		8	2021	1956	259,450.00
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35010		8	2021	1960	263,434.00
35010		8	2021	1961	327,284.00

35010	8	2021	1962	280,359.36
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35010	8	2021	1968	128,655.00
35010	8	2021	1969	402,094.00
35010	8	2021	1970	1,682,695.00
35010	8	2021	1971	970,069.00
35010	8	2021	1972	593,107.00
35010	8	2021	1973	978,038.00
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Spanos

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36010	8	2021	1951	18,663.00
36010	8	2021	1952	27,550.00
36010	8	2021	1953	33,233.00
36010	8	2021	1954	24,267.00

36010	8	2021	1955	40,298.35
36010	8	2021	1956	21,633.00
36010	8	2021	1957	19,771.00
36010	8	2021	1958	27,040.00
36010	8	2021	1959	19,357.00
36010	8	2021	1960	33,627.00
36010	8	2021	1961	18,106.00
36010	8	2021	1962	10,562.32
36010	8	2021	1963	21,516.00
36010	8	2021	1964	20,398.00
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36010	8	2021	1966	5,187.00
36010	8	2021	1967	19,695.00
36010	8	2021	1968	15,350.00
36010	8	2021	1969	41,542.00
36010	8	2021	1970	24,874.00
36010	8	2021	1971	46,508.00
36010	8	2021	1972	16,301.00
36010	8	2021	1973	8,970.00
36010	8	2021	1974	43,465.00
36010	8	2021	1975	27,337.00
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36010	8	2021	1977	15,472.00
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36010	8	2021	1989	7,350.00
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36100	8	2021	1989	20,853.45
36100	8	2021	1990	89,521.00
36100	8	2021	1991	232,064.00
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36100	8	2021	1993	45,318.28
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36700	8	2021	2009	35,430,222.90
36700	8	2021	2010	4,648,319.68
36700	8	2021	2011	6,811,641.89
36700	8	2021	2012	9,104,085.72
36700	8	2021	2013	3,584,935.55
36700	8	2021	2014	22,872,719.62
36700	8	2021	2015	35,073,247.07
36700	8	2021	2016	1,419,066.23
36700	8	2021	2017	2,871,259.97
36700	8	2021	2018	1,756,857.24
36700	8	2021	2019	2,973,080.15
36700	8	2021	2020	18,869,836.43
36700	8	2021	2021	10,268,482.76
36800	8	2021	1941	8,913.98
36800	8	2021	1942	1,244.87
36800	8	2021	1943	97.06
36800	8	2021	1944	2,550.13
36800	8	2021	1945	389.14
36800	8	2021	1947	2,908.59
36800	8	2021	1948	1,271.27

36800	8	2021	1949	209,632.88
36800	8	2021	1951	2,517.46
36800	8	2021	1952	5,623.38
36800	8	2021	1953	146,903.59
36800	8	2021	1954	7,004.38
36800	8	2021	1955	14,347.42
36800	8	2021	1956	3,693.16
36800	8	2021	1957	16,780.89
36800	8	2021	1958	6,271.81
36800	8	2021	1959	15,505.39
36800	8	2021	1960	18,459.32
36800	8	2021	1961	6,386.26
36800	8	2021	1962	407,719.43
36800	8	2021	1963	33,622.75
36800	8	2021	1964	271,666.62
36800	8	2021	1965	492,991.02
36800	8	2021	1966	414,107.61
36800	8	2021	1967	841,819.41
36800	8	2021	1968	574,093.67
36800	8	2021	1969	901,072.00
36800	8	2021	1970	1,290,214.08
36800	8	2021	1971	1,259,602.32
36800	8	2021	1972	1,440,879.90
36800	8	2021	1973	2,620,869.84
36800	8	2021	1974	3,216,098.91
36800	8	2021	1975	1,547,583.48
36800	8	2021	1976	2,068,890.49
36800	8	2021	1977	3,521,533.56
36800	8	2021	1978	3,783,007.74
36800	8	2021	1979	3,919,520.68
36800	8	2021	1980	2,691,938.47
36800	8	2021	1981	1,764,425.39
36800	8	2021	1982	4,207,453.28
36800	8	2021	1983	4,812,658.01
36800	8	2021	1984	3,391,622.39
36800	8	2021	1985	4,899,531.62
36800	8	2021	1986	5,629,936.68
36800	8	2021	1987	5,396,084.25
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36800	8	2021	1989	6,153,572.13
36800	8	2021	1990	6,102,687.27
36800	8	2021	1991	5,669,584.98
36800	8	2021	1992	6,445,804.28
36800	8	2021	1993	7,970,812.31
36800	8	2021	1994	8,631,278.07
36800	8	2021	1995	8,689,967.96
36800	8	2021	1996	8,002,608.70

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36800	8	2021	1998	8,518,953.83
36800	8	2021	1999	5,880,876.04
36800	8	2021	2000	9,423,290.91
36800	8	2021	2001	9,670,054.20
36800	8	2021	2002	5,407,117.33
36800	8	2021	2003	12,942,209.41
36800	8	2021	2004	4,296,229.29
36800	8	2021	2005	68,430.51
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36800	8	2021	2007	11,276,446.56
36800	8	2021	2008	9,059,219.66
36800	8	2021	2009	16,017,408.67
36800	8	2021	2010	2,079,493.70
36800	8	2021	2011	13,841,363.34
36800	8	2021	2012	7,156,970.72
36800	8	2021	2013	4,994,065.36
36800	8	2021	2014	47,254,298.67
36800	8	2021	2015	931,676.82
36800	8	2021	2016	571,778.19
36800	8	2021	2017	598,652.69
36800	8	2021	2018	674,835.88
36800	8	2021	2019	387,988.05
36800	8	2021	2020	7,234,914.58
36800	8	2021	2021	4,055,787.80
36900	8	2021	1949	10,536.62
36900	8	2021	1950	22,180.02
36900	8	2021	1951	20,153.45
36900	8	2021	1952	23,010.41
36900	8	2021	1953	17,760.95
36900	8	2021	1954	2,290.24
36900	8	2021	1955	25,981.08
36900	8	2021	1956	66,790.13
36900	8	2021	1957	52,265.03
36900	8	2021	1958	99,657.16
36900	8	2021	1959	149,158.23
36900	8	2021	1960	43,526.39
36900	8	2021	1961	170,347.30
36900	8	2021	1962	157,882.28
36900	8	2021	1963	171,882.90
36900	8	2021	1964	184,386.43
36900	8	2021	1965	120,827.33
36900	8	2021	1966	192,037.33
36900	8	2021	1967	237,065.82
36900	8	2021	1968	171,502.59
36900	8	2021	1969	218,605.82
36900	8	2021	1970	152,085.47

36900	8	2021	1971	349,091.88
36900	8	2021	1972	362,103.92
36900	8	2021	1973	467,968.95
36900	8	2021	1974	686,541.09
36900	8	2021	1975	581,274.16
36900	8	2021	1976	981,241.62
36900	8	2021	1977	1,231,190.09
36900	8	2021	1978	1,140,597.56
36900	8	2021	1979	1,245,560.79
36900	8	2021	1980	912,755.49
36900	8	2021	1981	1,334,692.89
36900	8	2021	1982	1,343,070.66
36900	8	2021	1983	2,210,195.91
36900	8	2021	1984	2,058,603.20
36900	8	2021	1985	1,992,453.11
36900	8	2021	1986	2,048,640.79
36900	8	2021	1987	1,589,793.50
36900	8	2021	1988	2,254,504.00
36900	8	2021	1989	2,462,385.83
36900	8	2021	1990	2,333,626.89
36900	8	2021	1991	2,576,064.61
36900	8	2021	1992	2,519,858.50
36900	8	2021	1993	3,286,428.28
36900	8	2021	1994	3,801,948.63
36900	8	2021	1995	4,603,510.87
36900	8	2021	1996	4,826,032.99
36900	8	2021	1997	5,184,619.37
36900	8	2021	1998	5,244,188.33
36900	8	2021	1999	4,309,241.73
36900	8	2021	2000	2,751,666.64
36900	8	2021	2001	2,995,165.37
36900	8	2021	2002	3,029,927.73
36900	8	2021	2003	1,238,259.63
36900	8	2021	2004	183,074.92
36900	8	2021	2006	26,403.91
36900	8	2021	2007	12,760.34
36900	8	2021	2008	2,118,834.74
36900	8	2021	2009	29,434.60
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36900	8	2021	2011	2,368,543.95
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36900	8	2021	2013	9,949,861.96
36900	8	2021	2014	16,527,250.32
36900	8	2021	2015	13,414,382.08
36900	8	2021	2019	483.17
36900	8	2021	2020	45,345.55
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37000	8	2021	1941	21,279.65
37000	8	2021	1942	4,949.10
37000	8	2021	1943	7,319.88
37000	8	2021	1944	602.97
37000	8	2021	1945	1,068.97
37000	8	2021	1947	439.24
37000	8	2021	1948	3,584.35
37000	8	2021	1949	3,057.48
37000	8	2021	1950	2,467.79
37000	8	2021	1951	1,829.26
37000	8	2021	1952	27,506.14
37000	8	2021	1953	85,450.91
37000	8	2021	1954	137,050.18
37000	8	2021	1955	147,750.10
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37000	8	2021	1957	185,081.43
37000	8	2021	1958	58,016.01
37000	8	2021	1959	22,885.22
37000	8	2021	1960	234,092.80
37000	8	2021	1961	239,023.74
37000	8	2021	1962	238,655.16
37000	8	2021	1963	287,455.27
37000	8	2021	1964	298,028.76
37000	8	2021	1965	379,034.11
37000	8	2021	1966	316,094.05
37000	8	2021	1967	298,614.14
37000	8	2021	1968	369,951.24
37000	8	2021	1969	437,399.99
37000	8	2021	1970	388,882.50
37000	8	2021	1971	542,855.08
37000	8	2021	1972	650,779.75
37000	8	2021	1973	729,615.59
37000	8	2021	1974	1,328,597.95
37000	8	2021	1975	580,814.60
37000	8	2021	1976	782,919.07
37000	8	2021	1977	1,568,393.17
37000	8	2021	1978	1,164,064.73
37000	8	2021	1979	1,360,319.73
37000	8	2021	1980	556,707.63
37000	8	2021	1981	515,868.26
37000	8	2021	1982	598,277.47
37000	8	2021	1983	1,145,189.31
37000	8	2021	1984	833,450.17
37000	8	2021	1985	777,049.33
37000	8	2021	1986	959,184.81
37000	8	2021	1987	1,054,521.92

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37000	8	2021	1989	1,103,090.78
37000	8	2021	1990	1,371,157.04
37000	8	2021	1991	1,440,270.31
37000	8	2021	1992	2,416,966.28
37000	8	2021	1993	1,104,348.12
37000	8	2021	1994	1,364,550.55
37000	8	2021	1995	1,438,112.59
37000	8	2021	1996	1,517,220.27
37000	8	2021	1997	2,433,989.62
37000	8	2021	1998	1,996,670.09
37000	8	2021	1999	1,778,449.08
37000	8	2021	2000	1,866,887.90
37000	8	2021	2001	2,205,922.15
37000	8	2021	2002	1,854,252.41
37000	8	2021	2003	1,728,521.55
37000	8	2021	2004	79,606.80
37000	8	2021	2005	290,222.85
37000	8	2021	2006	3,408,757.61
37000	8	2021	2007	1,037,165.15
37000	8	2021	2008	44,649.61
37000	8	2021	2009	1,515,281.60
37000	8	2021	2010	944,171.45
37000	8	2021	2011	675,361.19
37000	8	2021	2012	869,026.03
37000	8	2021	2013	5,951,167.11
37000	8	2021	2014	700,588.46
37000	8	2021	2015	122,773.45
37000	8	2021	2016	56,832.89
37000	8	2021	2018	890,293.00
37000	8	2021	2019	255,206.26
37000	8	2021	2020	2,559,634.33
37000	8	2021	2021	1,087,905.70
37001	8	2021	2015	2,737,154.06
37001	8	2021	2017	76,817.21
37001	8	2021	2018	97,071.49
37001	8	2021	2020	92,237.92
37011	8	2021	2018	770.41
37020	8	2021	1941	7,603.77
37020	8	2021	1942	45.48
37020	8	2021	1944	30.03
37020	8	2021	1945	14,653.76
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37020	8	2021	1947	3,149.35
37020	8	2021	1948	57,848.57
37020	8	2021	1949	5,542.70
37020	8	2021	1950	14,141.15

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37020	8	2021	1952	13,005.92
37020	8	2021	1953	11,870.97
37020	8	2021	1954	12,983.00
37020	8	2021	1955	24,516.43
37020	8	2021	1956	20,828.00
37020	8	2021	1957	16,554.36
37020	8	2021	1958	19,290.12
37020	8	2021	1959	30,001.19
37020	8	2021	1960	28,511.07
37020	8	2021	1961	35,610.57
37020	8	2021	1962	46,072.23
37020	8	2021	1963	51,694.97
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37020	8	2021	1965	66,162.07
37020	8	2021	1966	73,596.80
37020	8	2021	1967	61,918.37
37020	8	2021	1968	94,045.70
37020	8	2021	1969	101,065.17
37020	8	2021	1970	83,599.36
37020	8	2021	1971	118,204.18
37020	8	2021	1972	85,235.78
37020	8	2021	1973	104,230.68
37020	8	2021	1974	165,067.68
37020	8	2021	1975	87,632.16
37020	8	2021	1976	134,905.35
37020	8	2021	1977	155,345.20
37020	8	2021	1978	217,677.82
37020	8	2021	1979	181,222.25
37020	8	2021	1980	193,881.57
37020	8	2021	1981	183,996.98
37020	8	2021	1982	264,916.68
37020	8	2021	1983	96,128.82
37020	8	2021	1984	176,285.28
37020	8	2021	1985	174,443.17
37020	8	2021	1986	239,539.04
37020	8	2021	1987	202,183.92
37020	8	2021	1988	197,610.83
37020	8	2021	1989	146,747.06
37020	8	2021	1990	64,008.56
37020	8	2021	1991	58,977.86
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37020	8	2021	1993	255,802.61
37020	8	2021	1994	252,645.47
37020	8	2021	1995	316,652.19
37020	8	2021	1996	231,068.43
37020	8	2021	1997	311,470.17

37020	8	2021	1998	157,772.84
37020	8	2021	1999	3,765.20
37020	8	2021	2000	345,801.15
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37020	8	2021	2004	69,055.11
37020	8	2021	2007	22,185.74
37020	8	2021	2009	907,411.45
37020	8	2021	2010	590,559.23
37020	8	2021	2011	294,355.04
37020	8	2021	2012	802,950.31
37020	8	2021	2013	2,502,459.56
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37300	8	2021	1943	150.91
37300	8	2021	1944	978.19
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37300	8	2021	1947	7,070.75
37300	8	2021	1948	13,230.85
37300	8	2021	1949	8,024.34
37300	8	2021	1950	6,464.02
37300	8	2021	1951	7,357.57
37300	8	2021	1952	4,054.06
37300	8	2021	1953	24,906.00
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37300	8	2021	1958	45,429.16
37300	8	2021	1959	20,254.70
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37300	8	2021	1961	73,891.51
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37300	8	2021	1963	125,470.28
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37300	8	2021	1972	24,868.41
37300	8	2021	1973	21,645.69
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37300	8	2021	1978	21,710.04
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37300	8	2021	1984	1,118,949.97
37300	8	2021	1985	1,128,602.08
37300	8	2021	1986	888,945.82
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37300	8	2021	1988	306,172.70
37300	8	2021	1989	1,573,610.32
37300	8	2021	1990	1,114,528.49
37300	8	2021	1991	848,053.20
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37300	8	2021	1993	2,046,207.31
37300	8	2021	1994	2,484,885.83
37300	8	2021	1995	2,128,829.37
37300	8	2021	1996	2,207,529.41
37300	8	2021	1997	2,707,893.79
37300	8	2021	1998	2,732,478.12
37300	8	2021	1999	4,353,735.48
37300	8	2021	2000	3,354,669.88
37300	8	2021	2001	2,475,942.46
37300	8	2021	2002	1,898,984.57
37300	8	2021	2003	5,018,653.62
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37300	8	2021	2012	5,943,328.63
37300	8	2021	2013	1,924,007.81
37300	8	2021	2014	27,958,344.02
37300	8	2021	2015	6,846,707.52
37300	8	2021	2016	1,205,426.07
37300	8	2021	2017	1,518,178.82
37300	8	2021	2018	2,806,726.19
37300	8	2021	2019	248,784.58
37300	8	2021	2020	12,224,617.59
37300	8	2021	2021	4,862,635.85
39010	8	2021	1941	20,902.36

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39010	8	2021	1952	2,141.90
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39010	8	2021	1955	9,125.37
39010	8	2021	1956	253,937.10
39010	8	2021	1957	131.71
39010	8	2021	1958	156,772.10
39010	8	2021	1960	1,634.86
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39010	8	2021	1962	335,711.01
39010	8	2021	1963	14,557.14
39010	8	2021	1965	41,078.89
39010	8	2021	1966	304,378.72
39010	8	2021	1967	17,751.16
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39010	8	2021	1969	175,928.10
39010	8	2021	1970	925,463.16
39010	8	2021	1971	143,789.85
39010	8	2021	1972	345,660.00
39010	8	2021	1974	9,906.62
39010	8	2021	1975	100,603.10
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39010	8	2021	1981	910,390.30
39010	8	2021	1982	243,770.64
39010	8	2021	1983	353,873.43
39010	8	2021	1984	171,743.30
39010	8	2021	1985	1,302,097.65
39010	8	2021	1986	658,043.68
39010	8	2021	1988	555,023.15
39010	8	2021	1989	6,183,983.16
39010	8	2021	1990	722,681.81
39010	8	2021	1991	243,739.58
39010	8	2021	1992	736,039.93
39010	8	2021	1994	768,720.38
39010	8	2021	1995	3,230,477.55
39010	8	2021	1996	822,838.11
39010	8	2021	1997	188,082.68
39010	8	2021	1998	118,142.57
39010	8	2021	1999	292,329.75
39010	8	2021	2000	345,747.15
39010	8	2021	2001	1,006,594.58
39010	8	2021	2003	1,709,628.03
39010	8	2021	2004	210,420.74
39010	8	2021	2005	1,152,084.60

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39010	8	2021	2007	1,031,263.74
39010	8	2021	2008	4,338,647.79
39010	8	2021	2009	2,631,259.58
39010	8	2021	2010	1,141,118.64
39010	8	2021	2011	3,106,495.26
39010	8	2021	2012	6,241,682.39
39010	8	2021	2013	2,887,689.19
39010	8	2021	2014	1,902,731.51
39010	8	2021	2015	5,062,045.32
39010	8	2021	2016	2,545,386.83
39010	8	2021	2017	3,409,549.69
39010	8	2021	2018	5,515,208.06
39010	8	2021	2019	12,028,033.94
39010	8	2021	2020	20,719,625.61
39010	8	2021	2021	2,275,352.68
39020	8	2021	1954	172.93
39020	8	2021	1962	2,572.33
39020	8	2021	1970	234.28
39020	8	2021	1971	1,164.17
39020	8	2021	1973	131.45
39020	8	2021	1977	148.09
39020	8	2021	1978	1,650.99
39020	8	2021	1979	1,454.48
39020	8	2021	1983	3,473.18
39020	8	2021	1984	1,919.65
39020	8	2021	1985	1,839.75
39020	8	2021	1993	1,175.36
39020	8	2021	1996	1,114.00
39020	8	2021	1999	2,747.75
39020	8	2021	2019	5,247.68
39110	8	2021	2002	5,291.84
39110	8	2021	2003	164,371.90
39110	8	2021	2004	139,596.05
39110	8	2021	2005	159,934.29
39110	8	2021	2006	99,011.55
39110	8	2021	2007	312,121.99
39110	8	2021	2008	181,323.81
39110	8	2021	2009	591,964.52
39110	8	2021	2010	56,433.78
39110	8	2021	2011	104,346.92
39110	8	2021	2012	394,682.30
39110	8	2021	2013	390,792.24
39110	8	2021	2014	890,687.26
39110	8	2021	2015	883,346.13
39110	8	2021	2016	776,419.31
39110	8	2021	2017	1,109,398.01

39110	8	2021	2018	1,033,862.15
39110	8	2021	2019	1,361,267.75
39110	8	2021	2020	1,768,227.87
39110	8	2021	2021	373,844.94
39120	8	2021	2016	2,154,365.64
39120	8	2021	2017	4,601,789.04
39120	8	2021	2018	5,242,372.69
39120	8	2021	2019	8,617,695.14
39120	8	2021	2020	5,283,111.10
39120	8	2021	2021	587,500.01
39131	8	2021	2017	134,566.48
39131	8	2021	2018	1,184,573.98
39131	8	2021	2019	3,042,845.63
39131	8	2021	2020	1,145,839.17
39131	8	2021	2021	64,792.00
39200	8	2021	1995	9,600.60
39200	8	2021	1997	31,916.14
39200	8	2021	1999	69,565.79
39200	8	2021	2002	17,388.98
39200	8	2021	2008	50,024.89
39200	8	2021	2009	35,345.09
39200	8	2021	2010	56,718.44
39200	8	2021	2011	140,657.91
39200	8	2021	2012	5,794.44
39200	8	2021	2013	127,167.74
39200	8	2021	2014	65,375.78
39200	8	2021	2015	372,799.87
39200	8	2021	2016	96,081.73
39200	8	2021	2017	342,890.24
39200	8	2021	2018	172,646.48
39200	8	2021	2019	281,585.34
39200	8	2021	2020	249,076.08
39200	8	2021	2021	29,583.80
39210	8	2021	1986	52,760.16
39210	8	2021	1990	42,041.64
39210	8	2021	1991	27,800.61
39210	8	2021	1992	42,805.04
39210	8	2021	1995	65,611.33
39210	8	2021	1996	116,711.19
39210	8	2021	1999	89,004.72
39210	8	2021	2000	581,363.02
39210	8	2021	2002	49,019.66
39210	8	2021	2004	95,879.48
39210	8	2021	2008	6,651.47
39210	8	2021	2010	20,385.69
39210	8	2021	2011	956,578.31
39210	8	2021	2012	55,650.23

39210	8	2021	2013	27,034.16
39210	8	2021	2014	1,893,306.84
39210	8	2021	2015	1,538,277.56
39210	8	2021	2017	69,689.17
39210	8	2021	2018	112,102.24
39210	8	2021	2019	23,703.12
39210	8	2021	2020	636,447.02
39300	8	2021	1996	13,202.54
39300	8	2021	1997	863.00
39300	8	2021	1998	2,667.00
39300	8	2021	1999	15,683.00
39300	8	2021	2003	102,957.32
39300	8	2021	2005	118,483.26
39300	8	2021	2007	4,390.25
39300	8	2021	2009	49,517.43
39300	8	2021	2011	15,739.13
39300	8	2021	2012	94,723.04
39300	8	2021	2014	289,857.21
39300	8	2021	2016	5,138.58
39300	8	2021	2020	326,351.00
39400	8	2021	1996	165,353.16
39400	8	2021	1997	275,144.00
39400	8	2021	1998	177,280.00
39400	8	2021	1999	290,308.91
39400	8	2021	2000	135,894.21
39400	8	2021	2001	113,230.00
39400	8	2021	2002	35,746.03
39400	8	2021	2003	843,328.94
39400	8	2021	2004	311,595.23
39400	8	2021	2005	194,741.79
39400	8	2021	2006	147,385.38
39400	8	2021	2007	184,345.37
39400	8	2021	2008	92,875.65
39400	8	2021	2009	831,398.08
39400	8	2021	2010	1,350,836.32
39400	8	2021	2011	1,076,072.95
39400	8	2021	2012	2,662,620.33
39400	8	2021	2013	630,609.80
39400	8	2021	2014	587,901.84
39400	8	2021	2015	1,070,472.33
39400	8	2021	2016	513,942.46
39400	8	2021	2017	968,470.00
39400	8	2021	2018	722,226.65
39400	8	2021	2019	1,350,813.28
39400	8	2021	2020	1,866,502.04
39400	8	2021	2021	991,401.22
39610	8	2021	2003	69,563.63

39610	8	2021	2008	128,604.22
39610	8	2021	2009	18,177.07
39610	8	2021	2010	618,093.37
39610	8	2021	2012	171,421.98
39610	8	2021	2013	303,596.42
39610	8	2021	2014	522,741.73
39610	8	2021	2015	109,870.44
39610	8	2021	2016	61,529.46
39610	8	2021	2017	1,150,827.09
39610	8	2021	2018	513,493.76
39610	8	2021	2019	752,121.30
39610	8	2021	2020	377,552.54
39620	8	2021	1997	6,098.00
39620	8	2021	2000	20,831.00
39620	8	2021	2004	11,307.99
39620	8	2021	2009	60,852.48
39620	8	2021	2011	227,310.08
39620	8	2021	2012	38,508.60
39620	8	2021	2016	20,450.12
39620	8	2021	2017	234,266.10
39620	8	2021	2019	424,426.74
39700	8	2021	1999	452,972.59
39700	8	2021	2000	343,690.18
39700	8	2021	2001	419,682.11
39700	8	2021	2002	362,846.57
39700	8	2021	2003	504,201.93
39700	8	2021	2004	352,618.88
39700	8	2021	2005	68,862.55
39700	8	2021	2006	2,647,976.97
39700	8	2021	2007	2,267,401.44
39700	8	2021	2008	1,493,410.13
39700	8	2021	2009	1,220,712.43
39700	8	2021	2010	1,979,662.67
39700	8	2021	2011	2,779,441.80
39700	8	2021	2012	634,784.84
39700	8	2021	2013	841,007.21
39700	8	2021	2014	1,189,824.02
39700	8	2021	2015	8,303,445.85
39700	8	2021	2016	3,473,893.93
39700	8	2021	2017	236,436.94
39700	8	2021	2018	5,135,984.77
39700	8	2021	2019	939,092.83
39700	8	2021	2020	3,252,629.41
39700	8	2021	2021	4,007,848.36
39710	8	2021	2000	6,273,374.18
39710	8	2021	2002	287,671.98
39710	8	2021	2003	242,361.15

39710	8	2021	2004	211,831.90
39710	8	2021	2006	157,786.36
39710	8	2021	2007	82,181.59
39710	8	2021	2008	537,474.72
39710	8	2021	2010	3,874,383.04
39710	8	2021	2011	74,992.81
39710	8	2021	2012	91,970.26
39710	8	2021	2013	104,220.12
39710	8	2021	2014	267,347.40
39710	8	2021	2015	5,574,334.78
39710	8	2021	2016	135,950.87
39710	8	2021	2017	767,235.40
39710	8	2021	2018	867,194.42
39710	8	2021	2019	4,685,646.23
39720	8	2021	2012	7,572,884.82
39720	8	2021	2020	1,107.31
39720	8	2021	2021	31,749.98

Period

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 21

Responding Witness: Christopher M. Garrett

- Q-1-21. Please provide a detailed narrative explaining how the depreciation rates presented in Exhibit JJS-KU-2, affect the revenue requirement proposed in this proceeding. Please identify and provide all other company workpapers and exhibits that would be affected by a change to the Company's proposed depreciation rates, and describe how the exhibits would be changed.
- A-1-21. The depreciation rates in Exhibit JJS-KU-2 utilizing forecasted capital do not impact the revenue requirement proposed in this proceeding. As discussed in the Direct Testimony of Kent W. Blake, Page 5, lines 11-14, KU and LG&E also considered the impacts of using forecasted capital for the depreciation study and chose to use historic plant in service as the more conservative measure consistent with that used by the Companies in prior rate cases.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 22

Responding Witness: William Steven Seelye

Q-1-22. Please provide native versions, in electronic format with all formulas intact, of all exhibits to the direct testimony of Mr. William Seelye.

A-1-22. See the response and attachments to PSC 1-56.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 23

Responding Witness: William Steven Seelye

Q-1-23. In electronic spreadsheet format with formulas intact, please provide all workpapers supporting Mr. Seelye's direct testimony.

A-1-23. See the response and attachments to PSC 1-56 and 1-57.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 24

Responding Witness: William Steven Seelye

- Q-1-24. To the extent not provided, please provide a copy of KU's electric class cost of service study in electronic spreadsheet format with all formulas intact – using KU's proposed LOLP methodology.
- A-1-24. See the attachment to the response to PSC 1-56 named "2020_Att_KU_PSC_1-56_Exhibit_WSS-2,WSS-29,WSS-31_KU_COSS_LOLP.xlsx".

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 25

Responding Witness: William Steven Seelye

- Q-1-25. To the extent not provided, please provide a copy of KU's electric class cost of service study in electronic spreadsheet format with all formulas intact – using KU's proposed 6CP methodology.
- A-1-25. See the attachment to the response to PSC 1-56 named "2020_Att_KU_PSC_1-56_KU_COSS_6CP_Alternative.xlsx".

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 26

Responding Witness: William Steven Seelye

- Q-1-26. To the extent not provided, please provide a copy of KU's electric class cost of service study in electronic spreadsheet format with all formulas intact – using KU's proposed 12CP methodology.
- A-1-26. See the attachment to the response to PSC 1-56 named "2020_Att_KU_PSC_1-56_KU_COSS_12CP_Alternative.xlsx".

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 27

Responding Witness: David S. Sinclair

- Q-1-27. Please refer to Mr. Seelye's direct testimony at page 2, lines 13-14. Please provide a detailed explanation as to how KU uses LOLP as a key measure to plan its generation resources.
- A-1-27. The Companies develop a target reserve margin range that, at the high end, is based on a reliability target reflecting the probability of experiencing an inability to meet load in any hour that is no greater than once in ten years. This process is explained in detail in the Companies' 2018 Integrated Resource Plan, Volume III, "2018 IRP Reserve Margin Analysis." See the response to AG-KIUC 1-6.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 28

Responding Witness: William Steven Seelye

Q-1-28. Please refer to Mr. Seelye's direct testimony at page 2, lines 25-28.

- a. Please identify the amount of Environmental Cost Recovery ("ECR") costs collected from each customer class through current rates.
- b. Please identify the amount of ECR project costs that will be rolled into base rates for each customer class. To the extent this amount differs from the amount identified above in part a., please provide a detailed explanation supporting the response.
- c. This request is intentionally blank.
- d. This request is intentionally blank.

A-1-28. a-b. See attachment being provided in Excel format which reflects the ECR costs forecasted to be recovered in current rates before the ECR project eliminations are considered and the forecasted amount of the ECR costs that will be transferred for recovery from ECR to base rates. The difference between these amounts reflects the ECR costs forecasted to continue to be recovered through the ECR mechanism (that is, they relate to ECR projects the Company is not proposing to eliminate into base rates in this proceeding).

c-d. Not applicable.

The attachment is being provided in a separate file in Excel format.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 29

Responding Witness: William Steven Seelye

Q-1-29. In electronic spreadsheet format, with all formulas intact, please provide a comparison of the Company's production and transmission allocation factors for each rate class using the LOLP, 6 CP, and 12 CP cost allocation methods.

A-1-29. See attachment being provided in Excel format.

The attachment is being provided in a separate file in Excel format.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 30

Responding Witness: Daniel K. Arbough / Adrien M. McKenzie

- Q-1-30. If not already provided in response to the question above, please provide all exhibits, tables, figures and supporting workpapers in electronic format with all formulas intact supporting the testimonies of Mr. McKenzie and Mr. Arbough. This is an ongoing request for all subsequent testimonies filed by these witnesses.
- A-1-30. See the response and attachments to PSC 1-56 and PSC 1-57. Also, see the response to PSC 2-61 for Mr. McKenzie's workpapers.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 31

Responding Witness: Daniel K. Arbough / Adrien M. McKenzie

Q-1-31. Please provide copies of all publications and credit reports referenced in or considered by witnesses Mr. McKenzie and Mr. Arbough. This is an ongoing request for all subsequent testimonies filed by these witnesses.

A-1-31. See the response to Question No. 30.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 32

Responding Witness: Adrien M. McKenzie

- Q-1-32. Please identify all docket numbers and Orders where the Kentucky Public Service Commission has relied on the low-end outlier test used by the Federal Energy Regulatory Commission (“FERC”) to remove individual DCF, CAPM, or Risk Premium estimates of the cost of equity to establish a fair ROE for a regulated electric or gas utility.
- A-1-32. Mr. McKenzie did not assert that the Kentucky Public Service Commission (“KPSC”) has specifically cited to the test of low-end cost of equity estimates used by the Federal Energy Regulatory Commission (“FERC”) and he is not aware of any such orders. In fact, like most state regulatory agencies, the KPSC does not typically endorse specific methodological approaches used to estimate the cost of equity. Rather, state regulatory agencies, including the KPSC, arrive at their determination of a fair ROE by considering the entirety of the evidence presented in each proceeding. Thus, the fact that state regulatory agencies in general, and the KPSC specifically, may not cite specifically to FERC’s low-end test does not evidence any disagreement with the economic rationale (discussed and supported at pages 44-48 of Mr. McKenzie’s direct testimony) supporting the elimination of illogical low-end cost of equity estimates.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 33

Responding Witness: Adrien M. McKenzie

Q-1-33. Please identify all docket numbers and Orders where any State utility regulatory Commission has relied on the low-end outlier test used by the FERC to remove individual DCF, CAPM, or Risk Premium estimates of the cost of equity to establish a fair ROE for a regulated electric or gas utility.

A-1-33. See the response to Question No. 32.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 34

Responding Witness: Daniel K. Arbough

Q-1-34. Please provide complete copies of all credit reports issued by S&P, Moody's and Fitch Ratings that discuss the outlook for, and current state of, the regulated utility industry.

A-1-34. See attached.

ESG Industry Report Card: Regulated Utilities Networks

February 11, 2020

Key Takeaways

- Social risks are the most important ESG credit factor for regulated network utilities and above average compared with other industries. Such risks can be significant because of the importance of regulated networks to local communities and the corresponding regulatory focus on service quality, reliability, and, increasingly, on affordability.
- Environmental risks for network operators are generally average, reflecting the sector's pure infrastructure status with low levels of direct emissions, waste or pollution.
- Electric utilities are sensitive to destructive climate change-induced events, which are however more geographic than sector specific; so are water utilities, particularly if water scarcity leads to heightened regulatory oversight and stricter requirements on leakage or supplies.
- Gas utilities are indirectly exposed to long-term public policies on the role of gas in the energy transition, mitigated by the nature of regulated returns that limit exposure to volumes.

Analytic Approach

Environmental, social, and governance (ESG) risks and opportunities can affect an entity's capacity to meet its financial commitments in many ways. S&P Global Ratings incorporates these considerations into its ratings methodology and analytics, which enables analysts to factor in short-, medium-, and long-term impacts--both qualitative and quantitative--to multiple steps of their credit analysis. Strong ESG credentials do not necessarily indicate strong creditworthiness (see "The Role Of Environmental, Social, And Governance Credit Factors In Our Ratings Analysis," published Sept. 12, 2019).

Our ESG report cards qualitatively explore the relative exposures (average, below, above average) of sectors to environmental and social credit factors over the short, medium, and long term. For environmental exposures, chart 1 shows a more granular listing of key sectors and (in some cases) subsectors reflecting the qualitative views of our analytical rating teams. This sector comparison is not an input to our credit ratings and not a component of our credit rating methodologies; it is

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ESG Industry Report Card: Regulated Utilities Networks

based on our current qualitative, forward-looking opinion of credit risks across sectors.

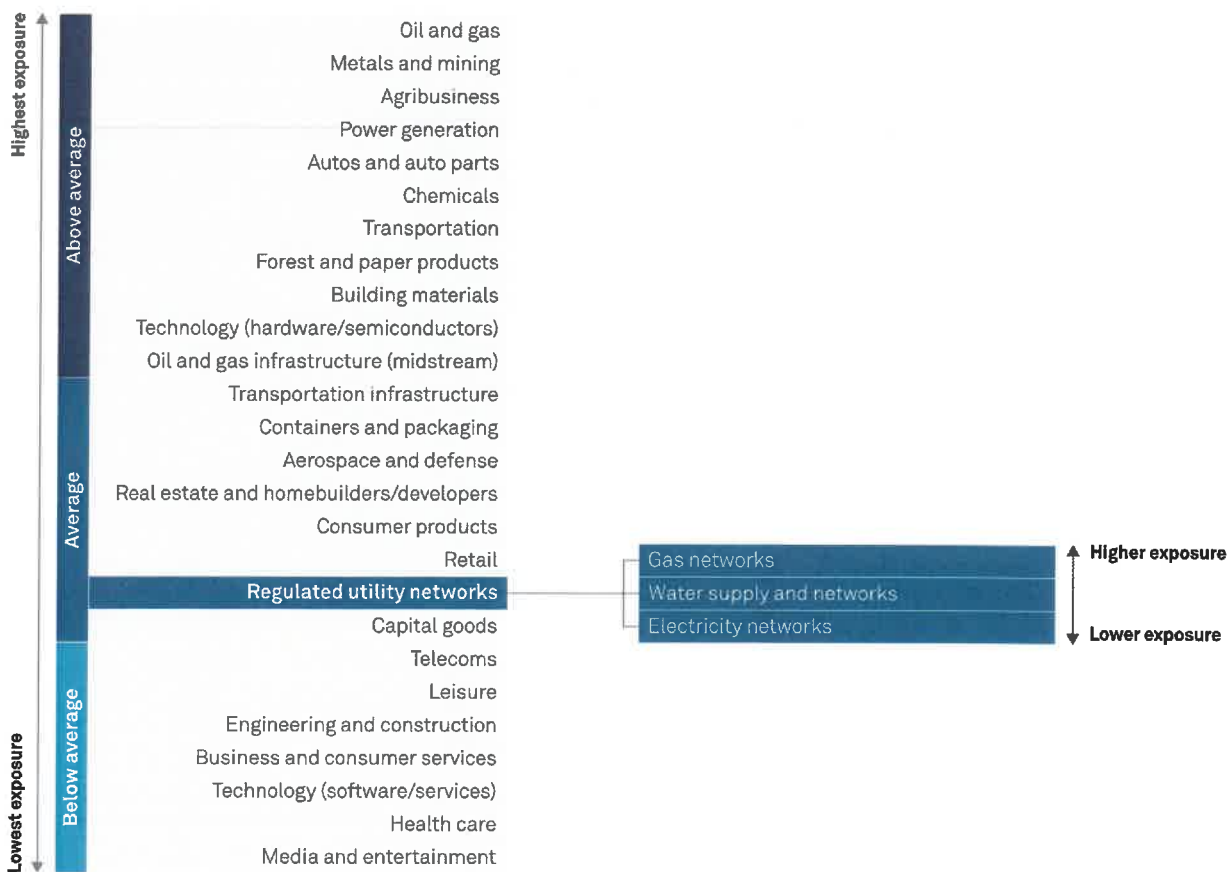
In addition to our sector views, this report card lists ESG insights for individual companies, including how and why ESG factors may have had a more positive or negative influence on an entity's credit quality compared to sector peers or the broader sector. These comparative views of environmental and social risks are qualitative and established by analysts during industry portfolio discussions, with the goal of providing more insight and transparency.

Environmental risks we considered include greenhouse gas (GHG) emissions, including carbon dioxide, pollution, and waste, water and land usage, and natural conditions (physical climate, including extreme and changing weather conditions, though these tend to be more geographic/entity-specific than a sector feature). Social risks include human capital management, safety management, community impacts, and consumer-related impacts from customer service and changing behavior to the extent influenced by environmental, health, human rights, and privacy (but excluding changes resulting from broader demographic, technological, or other disruptive industry trends). Our views on governance are directly embedded in our rating methodology as part of the management and governance assessment score.

Chart 1

Qualitative Sector Listing Of Relative Environmental Exposure: Regulated Utility Networks

Greenhouse gas emissions, waste, pollution, and land use



Source: S&P Global Ratings.
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ESG Industry Report Card: Regulated Utilities Networks

The list of entities covered in this report is not exhaustive. We may provide additional ESG insights in individual company analyses throughout the year as they change or develop, with companies expected to increasingly focus on ESG in their communication and strategy updates.

Environmental Exposure

We view the environmental risks to utility networks as generally moderate credit drivers only, because we assess the sector based on its infrastructure rather than emissions. However, where electric power supply arrangements bind the delivery network to generation supplies with significant emissions, we will attribute the emissions exposure to the electric network. Electric, gas, and water networks each have specific environmental drivers.

Electric networks: The energy transition implies a substantial increase in electrification over the next two decades. As a result, electric network operators will likely invest heavily to accommodate the rising share of renewables and make the grid more decentralized and smart. The key environmental risk factor, however, stems from the recent and more frequent physical climate-change events (e.g. wildfires, storms, hurricanes, and tornadoes).

The actual credit exposure incurred by each utility will depend on the regulatory construct. For example, California's recent catastrophic wildfires have pressured the credit quality of the state's utilities because the regulatory construct doesn't account for the consistent and timely recovery of wildfire costs. This contrasts to Florida, where the utilities have proactively implemented storm-hardening measures and have helped implement a regulatory construct that is well equipped to deal with the timely recovery of catastrophic hurricane costs.

Natural gas networks: These are construed underground and their primary environmental exposure therefore stems from their indirect exposure to fossil fuels, besides the risks of leaks and explosions (see Social Exposure below). Gas is however considered a vital bridge in the energy transition with global demand set to steadily increase over the next two decades. That said, a faster-than-anticipated shift to renewables, and improvements in battery technology, could curb demand for gas. These factors could also incentivize regulators to be less supportive on remuneration and expansionary capital expenditure (capex), as seen recently in Spain for transmission.

Water networks: Environmental risks center on clean water, water usage (i.e. spills and losses), and treatment of wastewater. Each of these tend to be regulatory key performance indicators (KPIs) and thus relevant to credit. We note that repeated poor operating performance can lead to financial penalties, and expensive capital investment mandates, but can also increase the social exposure of an entity as this can lead to a loss of reputation and create difficult relationships with a company's regulator, hindering its negotiation power during a price reset. Exposure to climate change for water utilities is particularly relevant for entities operating in regions with water scarcity, given that drought conditions could affect water supply and increase requirements on water management and leakage.

Social Exposure

We see regulated networks' exposure to social factors as the most important ESG factor and above average, compared to other industry. Related credit risks can be significant, because companies in this segment play an important role within their communities by providing an essential service that must remain affordable and reliable.

ESG Industry Report Card: Regulated Utilities Networks

Governments and regulators have been increasingly focusing on affordability, and we believe this could translate into further remuneration pressure for regulated networks. This is especially so in countries where bills are already high, and facing upward cost pressures from ongoing high investments in renewables and grid strengthening as part of the energy transition as well as aging infrastructure and changes in regulatory requirements in all sectors. A failure to maintain high-quality standards at an affordable cost for customers, or a system disruption, could trigger local criticism or political backlash.

Employee relationships constitute another important social factor. Incumbent network operators are often large local employers that sometimes have unionized staff. That said, they also have a degree of local government support because they usually significantly contribute to the local property tax base.

Finally, we point to the importance of safety for gas networks in particular as explosions are seldom but can involve significant casualties, and reputational and litigation risk in the case of poor maintenance management. Water contaminants including lead, and overflows of untreated sewage, can pose significant reputational risk for water and wastewater utilities.

ESG Risks In Regulated Utilities (Networks)

Europe, The Middle East, And Africa

Table 1

Company name/Rating/Comments	Analyst name
<p>Enagas S.A. (BBB+/Stable/A-2)</p> <p>Environmental and social aspects are a comparatively higher risk for gas transmission companies in Spain compared with electricity peers'. This is because gas will play a less important role than before in the nation's upcoming energy policy, reflected in the proposed strong downward revision in remuneration and incentives for gas transmission for the new 2021-2026 regulatory period. Spain targets almost zero carbon-dioxide emissions (on energy and cars) by 2050, which poses a long-term challenge for gas infrastructure companies. That said, we consider that gas will still be crucial to the energy mix for the transition process over the next two decades, bearing in mind the expected phase-out of coal and nuclear in Spain. The company has a good track-record in operating a reliable and safe network, which is key to managing regulatory risk and public opinion. We assess Enagas' management and governance as satisfactory. However, the company is involved in a dispute with the Peruvian government: the latter unilaterally terminated Enagas' concession for the Gasoducto Sur Peruano (GSP) project in 2017. We understand this was triggered by allegations of bribery against Enagas' partner in the project, Brazilian company Odebrecht. Initially, Enagas expected to receive as compensation almost all the net accounting value of the project, equivalent to its investment (about €400 million) in 2020. Now the compensation is expected at year-end 2022 at the earliest.</p>	<p>Massimo Schiavo</p>
<p>E.ON SE (BBB/Stable/A-2)</p> <p>Since the successful spin-off of its fossil-based generation business (Uniper SE) in 2017 and the ongoing corporate transformation involving the asset swap with RWE Aktiengesellschaft, we see E.ON's environmental and social risk profile as strongly reduced and becoming more comparable to that of other fully regulated network operators. We estimate that about 70% of the EBITDA of the new E.ON will stem from regulated gas and electricity distribution, with only 5% still coming from non-core merchant power generation, i.e. its retained nuclear power plants, which are to be phased out by end-2022. Nuclear waste storage liabilities were successfully transferred to the German federal government against payment to the German Nuclear Waste Disposal Fund in 2017. While E.ON remains responsible for the decommissioning and dismantling of its nuclear plants, we believe liabilities are reasonably predictable (extending over the 15-25 years following each plant closure). New E.ON's capex focus should adapt to Europe's ambitious energy transition targets; maintaining, expanding and "smartening" distribution system networks in its widespread regulated service area. We expect European distribution system operators' (DSOs) role will shift toward building and operating intelligent networks ("smart grids") using modern technology able to utilize local and regional flexibility and sector coupling (power to heat, power to gas, batteries, micro-gas turbines, for example) to sustain security of supply and avoid costs for expanding network at higher voltage levels (see "Industry Top Trends 2020: Utilities-- EMEA Regulated," published Nov. 13, 2019 on RatingsDirect). We view new E.ON as having an advantage in fulfilling these tasks in comparison with smaller regional operators (such as municipalities) thanks to its lower procurement costs and superior procurement capabilities. Since 2018, E.ON has been aligning its sustainability strategy with U.N.'s Sustainable Development Goals, a key step in promoting transparency and comparability. One of the concrete goals is to reduce its absolute CO2 footprint by 30% by 2030 compared with 2016; which E.ON reduced by 17% in 2018 already (scope 1, 2, and 3). In addition, E.ON is working to halve the CO2 intensity of the electricity it sells.</p>	<p>Bjoern Schurich</p>
<p>EP Infrastructure (BBB/Stable/--)</p> <p>EP IF has higher environmental risks than peers' because its operations include district heating from coal and gas resulting in carbon dioxide discharges. That said, revenue from lignite-related activities is less than 10% of the total group revenues. EP IF is aiming to reduce its emissions by converting coal plants to biomass, gas, or waste-to-energy heating plants. EP IF also focuses on gas transmission, gas and electricity distribution, and gas storage activities in the Czech Republic, Slovakia, and Germany through its subsidiaries. EP IF's exposure to social risks is comparable to that of the industry as we view the regulatory frameworks under which it operates as supportive. The company has a good track record in operating a safe and reliable network, which is key to managing regulatory risk. We assess the company's management and governance as satisfactory thanks to a strong shareholders agreement. This is despite the fact that the group's majority owner--Daniel Kretinsky--is the CEO and chairman, serves on multiple subsidiary boards, and is integral to the group's culture, which represents key-man risk. This is somewhat mitigated by the delegation of key responsibilities to certain senior executives.</p>	<p>Renata Gottliebova</p>
<p>Kraftringen Energi AB (publ) (BBB+/Stable/A-2)</p> <p>Kraftringen is a front-runner in the Nordic region in terms of using only fossil-free fuels in its district heating business. Kraftringen has lowered its annual carbon dioxide footprint by 90% since 2007 and reached its fossil-free fuels goal in 2018. Thanks to this, Kraftringen is in our view less exposed to political risks. Swedish politicians are increasing their focus on the major industries that drive carbon dioxide pollution, and have raise taxes on district heating in the past couple of years (other recent proposals to increase taxes on district heating were only related to burning waste, and Kraftringen does not use waste as fuel). The company's shift away from fossil fuels has increased investments, resulting in increased costs for end customers. Although Kraftringen has not increased prices as much as others', its district heating tariffs are now more expensive than the average in Sweden according to "Nils Holgersson Rapporten 2019." This said, Kraftringen</p>	<p>Daniel Annas</p>

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has not reached their allowed income for regulatory electricity distribution, and therefore have the possibility of transferring under-recovered revenues to the upcoming regulatory period, which is positive for their credit metrics going forward.

Rosseti PJSC (BBB-/Stable/A-3)

Elena Anankina

Rosseti's exposure to ESG risks is comparable to that of peers. The group's subsidiaries provide an important transmission and distribution service with a significant social impact. Consequently, the government sometimes limits tariff increases and assigns Rosseti the unprofitable, but socially important, role of a guaranteeing supplier, or mandates investments in politically important projects--such as developing Russia's Far East, or smart meters. This makes Rosseti's regulated business less predictable but also underpins the state's 88% shareholding in Rosseti and the government's heavy involvement in shaping the company's strategy, and creates incentives for government support. From an environmental standpoint, Russia is less focused on renewable development than most European countries are, and as a result has less of a need for network development to support new, potentially volatile, energy sources. We don't expect this to change in the immediate future. Rather, Rosseti's capex plans for digitalization and electrification of new transport infrastructure in remote regions reflect the government's policy of increasing Russia's GDP growth above the currently modest 1.8%.

RTE Réseau de Transport d Electricité (A/ Stable /A-1)

Claire Mauduit-Le Clercq

We see RTE's exposure to environmental and social risk as comparable to that of the industry. RTE plays an important role in France's energy transition as it dedicates important capex to integrating renewable sources into the grid. RTE should spend up to €7 billion for the connection of offshore wind parks until 2035, which is about 20% of its total expected investments over the period. This is part of RTE's 2019 network development plan over the next 15 years that still needs to be reviewed by the French energy regulator CRE. We believe that the government's objective, embedded in its 2019-2028 energy program, to reduce France's dependence on nuclear power by 2035 to 50% from 75% while rapidly exiting coal thermal energy, will likely reinforce RTE's prominence in national energy matters. RTE has historically maintained a reliable, safe, and economically viable electricity transmission network, enabling the security of supply across France. This helps the company manage regulatory risk and public opinion, which is important from affordability and social perspectives. RTE continues to invest heavily in network enhancement, maximizing transmission system efficiency, and developing needed interconnection lines (total regulated capex of €1.45 billion in 2018). In addition, the utility has consistently provided high quality standards in its grid management. Governance is key to our rating on RTE. This is because, although EDF owns 50.1 % of the RTE group, we assess the group as operating independently from this main shareholder, notably due to regulatory and legal reasons, and with separate administrative and management teams. The company has had this corporate governance structure for a long time.

SNAM SpA (BBB+/Negative/A-2)

Massimo Schiavo

We see Snam's exposure to environmental and social risk as comparable to that of the industry. Notwithstanding the ongoing energy transition, gas will remain an important part of Italy's energy demand (currently about 35%) and a key energy hub for the Mediterranean area. With about €400 million investment in new businesses in the energy transition until 2023, part of €1.4 billion Snamtec program (Tomorrow's Energy Co.), Snam aims to promote gas use in various forms, including liquefied natural gas, compressed natural gas for maritime and ground transportation, energy efficiency with third parties (real estate deep renovation); it also aims to support the evolution of green gas, in particular biomethane and hydrogen (blending H2 up to 10% with studies ongoing on asset readiness and power to gas). The company has a good track record of maintaining a high degree of network quality, security, and safety standards, which is a key part of managing regulatory risk.

Societa Metropolitana Acque Torino SpA (BBB-/Positive/--)

Pauline Pasquier

Governance issues resulting from SMAT's shareholder structure constrain the ratings. The major area of governance risks relates to the city of Turin's significant influence over SMAT's strategic directions. The majority shareholder has a track record of taking decisions that could be detrimental to SMAT's credit quality: for example, requesting a special dividend payment in 2016 (not voted by general assembly in 2017), and proposing in 2017 the change of the company's legal status to a public consortium. The board's oversight has somewhat offset this negative influence. Turin can elect three of the five members on SMAT's board. To be passed, general assembly decisions, related to variations among shareholders, need 90% of equity voting rights and the agreement of 60% of the shareholders present, which somewhat reduces the risk of negative intervention. From a social perspective, SMAT's reputation is supported by its good operating track record. Located in the richer northwest region of Italy, Turin's water networks are superior in quality to others' in Italy, with lower water leakage than the country's average. Water quality is in line with standards requested by the regulator for the sector.

Southern Water Services (Finance) Ltd. (Class A: BBB+/Negative/--; Class B: BBB-/Negative/--)

Gustav Rydevik

We see Southern Water Services (Finance) (SWSF) as having weaker management and governance score than the sector following a large breach in management over sight leading to the misreporting of environmental leakage figures to the regulator between 2010 and 2017. On June 25, 2019, the UK water regulator Ofwat announced that it had issued SWSF with a £126 million fine on the basis that it had deliberately misled the regulator on the quality of the treated wastewater that was being released into water sources in Southern Water's operating area. We believe that these findings indicate material deficiencies in SWSF's management and governance policies and general risk in the management framework. Furthermore, we believe SWSF's internal controls were inadequate in preventing or identifying alleged illegal behavior as well as license-breaching behavior. In our view, these have an adverse impact on the company's reputation, regulatory risk, its credit metrics, and its overall credit quality at a time of higher political and regulatory risks. We note that SWSF has implemented a comprehensive action plan to prevent further similar events from occurring.

Statnett SF (A+/Stable/A-1)

Daniel Annas

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We see environmental and social risks for Statnett as moderate and comparable to those of other transmission system operators (TSOs). Statnett's Norwegian home power market is already close to 100% relying on hydro, which we expect to remain the backbone of the nation's energy supply. Statnett is involved in NordLink and North Sea Link, which are sizeable and complex interconnector projects. This is part of the company's role in ensuring security of supply and balancing the North European system, which is increasingly reliant on volatile renewable generation. Statnett has an excellent track record in terms of project execution. Although, we note that the company's projects are exposed to high-risk environment situations, such as steep mountains and underwater (fjords), it has a good health and safety record, and regularly reviews procedures.

Stockholm Exergi Holding AB (publ) (BBB+/Stable/A-2)

Daniel Annas

Environmental risks are more of a credit factor for Stockholm Exergi than for electric network peers. This is because the company's district heating activities consume fuel related to the heat and combined heat and power plants, resulting in carbon dioxide discharge. Stockholm Exergi has reduced its carbon dioxide footprint by about 65% since 2002, mainly thanks to a shift from fossil fuels to biofuels and more efficient technology. Although the company is still one of Stockholm's largest dischargers of carbon dioxide, and emissions increased in 2018 compared with 2017, it intends to phase out coal by the end of 2020 and be environmentally neutral by 2030. These targets have resulted in a significant investment plan in the coming years, for example conversion to renewable fuels in existing and new plants, as well as technology to filter the emissions but also with projects such as bio-energy with carbon capture and storage. We assess Stockholm Exergi's management and governance as satisfactory. The company and its previous main coal supplier were however mentioned in reports of the Swedbank money laundering scandal in 2019. Its main coal supplier had suspected ties to sanctioned individuals, according to Swedish broadcaster SVT's investigation. This could potentially lead to fines or a loss of customers for Stockholm Exergi if the allegations turn out to be true. We currently do not expect this to materially affect our credit rating on Stockholm Exergi.

Tekniska verken i Linköping AB (A+/Stable/A-1)

We see Swedish multi-utility TvAB as having comparable environmental and social risk to that of industry peers. Its owner, the municipality of Linköping, aims to become carbon-dioxide neutral by 2025. This is reflected in TvAB's recent strategic change to invest in wind generation, and to phase out fossil-based fuels for its CHP plants in the coming years. In our view, TvAB should be able to execute on its strategy without a major impact on its business risk. The strategic change does not affect the regulated business, which accounts for about 80% of EBITDA. TvAB's strategy is to be a resource-efficient company, and to have an attractive services offering for the environmentally aware inhabitants of its region. This should help preserve its social license to operate, while optimizing its regulatory relationship. TvAB ranks well against Swedish peers in both outage and price comparisons. We expect TvAB to be able to maintain its good rankings for district heating, electricity, waste and water services as it transitions away from fossil fuels.

Terna SpA (BBB+/Negative/A-2)

Massimo Schiavo

Terna's ESG exposure is comparable to that of peers. As Italy's electricity TSO, Terna has also been an early adopter of significant renewables capacity in its network. We thus believe it benefits from significant expertise in increasingly complex grid management amid Italy's energy transition. Terna intends to invest more than 10% of its domestic capex (€6.2 billion) into innovation and digitalization to fulfill the Italian government's target of reaching 26.8 gigawatts (GW) of solar and 15.7 GW of wind installed capacity by 2025. The company has a good track record of maintaining a safe and reliable electricity transmission network as well as a sound relationship with the regulator, ARERA. From a governance perspective, Terna, like its regulated peers, has historically been subject to political interference attempts via the so-called Robin Hood tax. This proposed one-off 6.5% income surtax was ultimately ruled unconstitutional by the European Court and withdrawn. (Terna is partly owned by the Italian government).

Thames Water Utilities Ltd. (Class A: BBB+/Negative/--; Class B: BBB-/Negative/--)

Matan Benjamin

Thames Water has higher exposure to ESG risks than the industry in general. Along with some other water companies in the U.K., it has been under public pressure for underinvesting in aging assets and paying perceived excessive dividends, ultimately underperforming in its key social duty of providing quality water services. The U.K. water regulatory framework incorporates operational guidance for environmental efforts. Despite its substantial proactive measures to improve operating performance, the company has continued to miss several of its regulatory targets. These relate to leakages, below-ground water-asset health, supply interruptions, and security of supply. In this respect, we believe Thames Water's operating performance lags those of other U.K.-regulated water companies. In light of the above, we assess Thames Water's management and governance as fair only and weaker than peers'. Management has however taken some proactive steps. To enhance transparency and in response to ongoing political pressure and negative press coverage, Thames Water has closed its Cayman finance subsidiaries and replaced them with a U.K.-based entity. In addition, the company has strengthened its board's independence, while significantly cutting dividends, mitigating some governance risks.

Transnet SOC Ltd. (BB/Negative/--; zaAA/--/zaA-1+)

Omega Collocott

We see Transnet's management and governance as fair, and more exposed to governance factors than domestic peers'. Transnet's former board and executive team have been accused of significant governance failures and irregularities, most notably in procurement. Such charges are being investigated, as well as allegations that certain government officials tasked to oversee Transnet's governance were complicit in the governance procurement irregularities. Furthermore, Transnet's 2018 and 2019 financial statements received audit qualifications (notably related to auditors' inability to confirm accuracy of reporting in relation with legislative requirements, not IFRS) and publication of the 2019 results were delayed, raising the risk of listing-requirement breaches, and broadly sterilizing Transnet's ability to raise public debt in calendar 2019. Consequently, governance risk remains elevated and we continue to monitor possible leadership and motivational challenges stemming from these issues, as well as the trajectory of board effectiveness, internal controls, reporting transparency, and regulatory relationships. These governance deficiencies have not, to date, resulted in a rating action, given that investigations and remediation plans and actions are well advanced and have not resulted in poor operational performance. Environmental

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and social considerations for Transnet are broadly in line with those of industry peers, reflecting the company's broadly acceptable service delivery and management of regulatory risk and public opinion, supported by its monopoly position in several markets. Transportation infrastructure providers are seen to have moderate environmental exposure reflecting the indirect exposure to emissions and pollution of the transportation industry itself. From a social perspective, the impact on local communities in relation to lifestyle, congestion, noise, and air quality is being increasingly highlighted, but the critical nature of existing road, airport, and port operations leads us to see these risks as limited for existing operations.

Vodokanal St. Petersburg (BB+/Stable/B)

Sergei Gorin

Vodokanal is weaker than peers' on governance. After the St-Petersburg Controlling Chamber concluded the company had included inappropriate costs in tariff calculation, its 2019 tariff increases were curbed at 3.7% and certain top managers were replaced. Our rating also factors in Vodokanal's exposure to politicized decision-making, including caps on tariffs, as well as potential support from the city government, including co-financing of investment projects. From the social and environmental standpoint, Vodokanal is comparable to other water utilities. It's a monopoly business responsible for water supply and water treatment in Russia's second largest city and suburbs. The company therefore invests heavily in the construction of wastewater treatment facilities, Okhtinsky sewage collector, and modernization of the wastewater treatment plant at Severnaya.

Zagrebacki Holding d.o.o. (B+/Stable/--)

**Renata
Gottliebova**

Zagrebacki's social exposure is very high compared with peers' based on the group's omnipresence in the city of Zagreb. In our view, Zagrebacki plays an important role to the city of Zagreb by providing essential services in many industries (energy, waste, pharma, real estate, leisure...) that must remain affordable and reliable. We assess management and governance as fair despite strong support from the key shareholder to invest in infrastructure, reflecting the very strong influence of the city in the company's key strategical decisions. Zagrebacki's environmental exposure is comparable to regulated peers with 90% of its EBITDA stems regulated activities (including gas distribution, gas and water supply as well as water and waste treatments).

Ratings as of Feb. 11, 2020. Source: S&P Global Ratings.

North America

Table 2

Company name/Ratings/Comments	Analyst
<p>AltaLink L.P. (A/Stable/--)</p> <p>As a transmission-only company, ALP's exposure to environmental risk is quite manageable and in line with that of electric utility network peers. From a social perspective, the provincial Canadian utility has a strong track record of providing safe and reliable electricity transmission services. In addition, the utility implemented a number of rate-relief measures to lower costs for customers amid sluggish economic conditions in Alberta.</p>	<p>Mayur Deval</p>
<p>American Water Works Co. Inc. (A/Stable/A-1)</p> <p>We view American Water Works as having comparable environmental and social risk as the broader industry for water and wastewater utility services. The company's long track record of providing safe and reliable water services to its customers could enable it to maintain social cohesion, despite steadily increasing rates and charges to the customer. That said, affordability will remain an area that we watch closely. The company is a good steward of the environment and adheres to federal and state water-quality regulations.</p>	<p>Sloan Millman</p>
<p>ATCO Ltd. (A-/Stable/--)</p> <p>We see ATCO's ESG related exposure as similar to the broader industry. The company is primarily an electric and gas distributor in Alberta. From an environmental perspective, ATCO recently divested all of its fossil-based generation assets in Canada; hence the company's environmental exposure to greenhouse gas emission has reduced significantly. From a social perspective, ATCO, through its regulated subsidiary, has a long history of providing affordable, safe, and reliable gas and electric utility services to its customers, consistent with the broader industry.</p>	<p>Andrew Ng</p>
<p>CenterPoint Energy Inc. (BBB+/Stable/A-2)</p> <p>CPE's credit quality is more negatively influenced than global peers by environmental factors. This is because of higher inherent risks in natural gas distribution operations and its midstream operations; as well as because of coal-fired power generation exposure. CPE's gas business includes approximately 76,000 miles of distribution mains combined with its gathering, processing, and transportation operations; this exposes it to a number of environmental risk factors (such as decommissioning of former manufactured gas plant sites and the risk of gas leaks). The electric segment further exposes CPE to environmental risk since approximately 1,300 MW of generation capacity is fossil fuel-based and of this about 75% is coal-based. We believe CPE's plan to transition its generation portfolio away from coal and toward natural gas will require significant investment and help lower the risks. On social risk factors, we see CPE as having a track record of providing affordable, safe, and reliable operations, which are critical to maintain robust regulatory relationships. The company has performed in line with the broader industry.</p>	<p>Gerrit Jepsen</p>
<p>Consolidated Edison Inc. (A-/Stable/A-2)</p> <p>We see social risks as a more material ESG factor for the company than for most peers'. Given Con Ed's position as the electric and gas distribution provider in New York City, events involving its operations tend to receive heightened public scrutiny due to the city's high population density. Aside from this, Con Ed's internal safety and health management systems support its ability to provide safe and reliable service for its customers, despite the complexity associated with its system. Con Ed environmental risk is not materially different from that of peers. While it has some steam-generation operations, the vast majority of the company's operations are in regulated electric and gas transmission and distribution.</p>	<p>Sloan Millman</p>
<p>Energir Inc. (A/Stable/--)</p> <p>Energir is primarily a gas distributor but also owns an electric regulated transmission and distribution network. We believe Energir's environmental risk is consistent with the broader industry because the company's gas network is fairly new and does not contain cast-iron or bare-steel pipes which raise the risk of explosions. In addition, the company also participates in Quebec's cap-and-trade system (that it shares with California), to reduce its greenhouse gas footprint in the gas distribution operation. From a social perspective, Energir has a history of providing affordable, safe, and reliable gas and electric utility services to its customers, consistent with the broader industry.</p>	<p>Andrew Ng</p>
<p>Eversource Energy (A-/Stable/A-2)</p> <p>Eversource's exposure to environmental risk in its electric operations is comparable with that of other transmission and distribution (T&D) operators. Even though the company is venturing into building generation assets, these are offshore wind assets that do not have an extensive carbon footprint. Eversource's water utility subsidiary largely depends on the natural resources surrounding its service territory. This requires the group to be good stewards of the environment while adhering to all federal and state water quality regulations. Such stewardship will remain a key mandate for the group, in our view. Eversource is subject to environmental remediation liabilities associated with several manufactured gas plants (MGP) sites. However, the cost of cleanup is estimated to be immaterial and is likely to be recoverable through the regulatory process. In addition, the company's gas operations are exposed to environmental risks in the normal course of business because of the potential for the company to emit methane. We view the company's ongoing infrastructure replacement program, where it spends significant capital to replace aging natural gas lines that may be</p>	<p>Obioma Ugboaja</p>

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prone to leaks, as supporting its preparedness, should regulations governing methane emissions become restrictive. From a social perspective, we view Eversource's long track record of providing safe and reliable utility services to its customers as a key factor that could enable it to maintain social cohesion going forward, even though affordability of steadily increasing rates and charges to the customer remains an area that we continue to watch closely.

FirstEnergy Corp. (BBB/Stable/--)

**Matt
O'Neil**

We view FirstEnergy's environmental risk as only modestly higher than that of pure network peers, given the company's exposure to coal-fired generation assets. Over 90% of the company's assets are transmission and distribution, significantly reducing its exposure to environmental risks. However, about 80% of the company's 3,790 MW of generation capacity is from coal and exposed to heightened risks. While the company has committed to significantly reduce its carbon emissions, this goal is only very long-term, i.e. by 2045.

Fortis Inc. (A-Negative/--)

Andrew Ng

While Fortis is primarily engaged in regulated activity, the company is more negatively influenced by environmental factors than pure network peers'. This is because of some exposure to fossil fuel-based generation (5% of assets, through Tucson Electric Power (TEP)). TEP produces most of Fortis' fossil-based generation and associated greenhouse gas (GHG) emissions. In order to reduce Fortis' environmental footprint, TEP is focusing on reducing its GHG emissions by decreasing its reliance on coal generation and replacing it with a mix of efficient natural gas and renewable generation. In 2018, gas and renewable energy represented about 40% of TEP's energy mix while coal represented about 43% (down from 79% in 2014). By 2030, TEP's goal is to have gas and renewable representing about 57% of its retail energy mix with coal representing only about 38%. From a social perspective, we see Fortis as having a history of providing affordable, safe, and reliable gas and electric utility services to its customers, consistent with the broader industry.

Hydro One Ltd. (A-/Stable/--)

Andrew Ng

We see the credit quality of Hydro One Ltd. (HOL) and subsidiary Hydro One Inc.) as more negatively influenced than global peers by its ownership and governance structure, resulting in our assessment of its management and governance as fair only. Specifically, HOL is partly owned by the government of Ontario and the government could potentially exercise legislative power to promote its own interests and priorities above those of other stakeholders. The Ontario government recently passed an amendment to the Ontario Energy Board Act to exclude any compensation paid to HOL's CEO and other senior executives from consumer rates. We view this legislative action as a governance deficiency related to HOL's ownership structure since the Ontario Province exercised its legislative authority to lower electricity rates, consistent with the government's election campaign promises. In our view, the use of this legislative authority to influence HOL's compensation structure for executives undermines the effectiveness of the company's governance structure, and potentially promotes the interests and priorities of the Ontario government above those of other stakeholders. We also note that these events followed the 2018 resignation of HOL's entire previous board of directors. Additional interferences in HOL's business or operating decisions could weaken the company's governance, reflecting severe deficiencies. From a social perspective, HOL has a history of providing affordable, safe and reliable electric utility service to its customers, consistent with the broader industry.

PPL Corp. (A-/Stable/A-2)

**Gerrit
Jepsen**

PPL's credit quality is more negatively influenced than global peers by environmental risk factors given that being a Kentucky-based coal generator increases environmental risks of a mostly network based business. Please see LG&E and KU Energy LLC., and Kentucky Utilities Co. for further details.

Toronto Hydro Corp. (A/Stable/--)

Andrew Ng

We see Toronto Hydro's ESG related exposure as similar to the broader industry. The company is a pure electric distribution operator. From a social perspective, Toronto Hydro has a history of providing affordable, safe, and reliable electric utility service to its customers, consistent with the broader industry.

Ratings as of Feb. 11, 2020. Source: S&P Global Ratings.

Latin America

Table 3

Company name/Ratings/Comments	Analyst
<p>Companhia de Saneamento Basico do Estado de Sao Paulo (BB-/Stable/--, brAAA/Stable/--)</p> <p>We see SABESP as more exposed to environment risks than peers' because of the operational and financial challenges that the Brazilian water utility may face due to extreme climate events. SABESP relies on water availability in its reservoirs to supply its clients. The impact of extreme climate-related events may have critical consequences to the company and the people within its area of influence. For example, in 2014 SABESP's main reservoir was affected by a significant drought that forced the utility to take several measures to control water consumption throughout the state of Sao Paulo, such as reduced water pressure that resulted in water supply stoppage in some areas. SABESP also offered discounts to customers in order to encourage water consumption savings. These events hurt the company's credit metrics at the time. SABESP also needs to adhere to extensive Brazilian federal, state, and municipal laws and regulations that aim to protect human health and the environment.</p>	<p>Vinicius Ferreira</p>

Ratings as of Feb. 11, 2020. Source: S&P Global Ratings.

Asia-Pacific

Table 4

Company/Rating/Comment	Analyst
<p>China Southern Power Grid Co. Ltd. (A+/Negative/--)</p> <p>We see environment and social risks for CSG as broadly similar to State Grid of China, the other major grid operator in the country. CSG strives to maintain reliable, safe, and efficient grids to serve the economic and social development in the five southern provinces in China, which in total account for 18% of the national population. It has a satisfactory operational track record, and continuously improves the quality of power supply services. CSG plays a significant role in dispatching clean energy from the west to the east. In 2018, it achieved 51.5% electricity generation from non-fossil fuel energy in its service area, much higher than the national average of 29.6%. The company has constructed multiple long-distance ultra-high voltage transmission lines to dispatch surplus hydro and wind power from the less populated areas in the west to load centers in the coastal region. As one of the backbone state-owned companies in China, CSG also undertakes social responsibility through actively participating in the poverty alleviation in the rural areas. In 2018, it invested Chinese renminbi (RMB) 23.7 billion (US\$3.4 billion) in poverty alleviation in the electric power industry through building up networks and supplying electricity to the rural or impoverished areas.</p>	<p>Gloria Lu</p>
<p>State Grid Corp. of China (A+/Stable/--)</p> <p>SGCC aims to maintain a reliable, safe, and economic network to manage social stability and regulatory risks. As the world's largest power grid operator, SGCC supplies electricity to over 80% of China's population and maintains a satisfactory operational track record. Its environment and social risks are moderate. Managing grid reliability is becoming more challenging with the company's increasing intake of intermittent wind and solar power. SGCC plays a significant role in dispatching renewable energy in China and helping the government achieve its goal of having 20% of primary energy sourced from renewables by 2030. It has constructed multiple long-distance ultra-high voltage transmission lines to dispatch renewable energy to consumption bases in the east. We expect SGCC will continue to spend RMB450 billion-RMB500 billion annually on network construction and upgrades and also undertake critical social responsibility in building up networks and supplying electricity to the rural or impoverished areas in China. The company usually receives government subsidies (RMB15 billion-RMB20 billion annually) to compensate for these costs.</p>	<p>Apple Li</p>
<p>ETSA Utilities Finance Pty Ltd. (A-/Stable/--)</p> <p>ETSA, the electricity distributor in the state of South Australia, has comparable social risks to its peers. The company manages its stakeholder engagement appropriately, having engaged in customer consultation when developing its draft proposal for the 2020-25 Regulatory Period for the Australian Energy Regulator. The company has also responded to the desire of the community for a wider role for renewable power and distribution by incorporating a third element, "Transitioning to the new energy future," into its strategy.</p>	<p>Alexander Dunn</p>
<p>SGSP (Australia) Assets Pty Ltd. (A-/Stable/--)</p> <p>As a predominately energy transmitter and distributor, SGSPAA's environmental and social risks are relatively benign and comparable to network peers. With a footprint across multiple eastern and northern states of Australia, the company's social factors include providing reliable and safe electricity and gas networks in its service area. We believe that the company is well experienced with an established track record.</p>	<p>Sonia Agarwal</p>

Ratings as of Feb. 11, 2020. Source: S&P Global Ratings.

This report does not constitute a rating action.

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North American Regulated Utilities Face Additional Risks Amid Coronavirus Outbreak

March 19, 2020

Key Takeaways

- S&P Global economists' now forecast a global recession this year, with the U.S. expected to post a seasonally adjusted second quarter contraction of about 6% before recovery begins in the second half of the year.
- We believe that the majority of North American regulated utilities are well positioned to handle the immediate impact of COVID-19. However, the pandemic could negatively affect a few outliers and those issuers already facing downside ratings pressure prior to the arrival of the coronavirus.
- Some electric utilities with disproportionate exposure to commercial and industrial class of customers could be vulnerable to reduced sales volumes, absent any regulatory counter mechanisms such as decoupling.
- Utilities with cyclical non-utility businesses could suffer downturns in the cycle.
- Utilities with strict construction schedules related to large-scale projects may find it difficult to meet tight deadlines.
- A sustained COVID-19 pandemic may constrain some utilities' ability to execute on planned equity issuance or weaken access to the capital markets.

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S&P Global Ratings acknowledges a high degree of uncertainty about the rate of spread and peak of the coronavirus outbreak. Some government authorities estimate the pandemic will peak in June or August, and we are using this assumption in assessing the economic and credit implications of the pandemic. We believe measures to contain COVID-19 have pushed the global economy into recession and could cause a surge of defaults among nonfinancial corporate borrowers (see "COVID-19 Macroeconomic Update: The Global Recession Is Here And Now" and "COVID-19 Credit Update: The Sudden Economic Stop Will Bring Intense Credit Pressure," published on March 17). As the situation evolves, we will update our assumptions and estimates accordingly.

As the World Health Organization (WHO) designates the novel COVID-19 disease a global pandemic, and capital market activity indicates heightened volatility, we've looked at how the outbreak could affect the credit quality of North American regulated utilities. This comes as major

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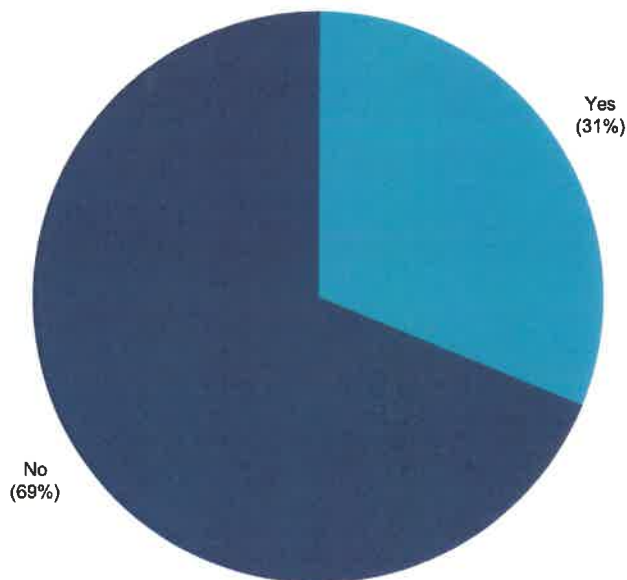
sporting events, concerts, and businesses suspend, cancel, or curtail their activities in response to the outbreak. Our base case now includes a global recession this year, and we believe that the sector would most likely weather its effects. That being said, a prolonged pandemic could result in ratings pressure on a few issuers with limited downside cushion in their ratings or negative outlooks.

Most Regulated Utilities Are Well Positioned To Handle The Immediate Impact

In the near term, utilities will likely see some reduced sales volumes as major sporting events, concerts, and businesses, scale back drastically, compounded even further by social distancing requirements being mandated or recommended by federal and local governments across North America. But we believe that most utilities in the sector are well positioned to deal with this short-term hurdle. First, they provide an essential service to consumers and businesses, most of whom will continue to rely on the steady supply of utility services. This means that most regulated electric, gas and water utilities are likely to be insulated since they mostly provide service to residential customers. In addition, some of these utilities benefit from a regulatory concept known as decoupling. Decoupling is a mechanism that protects utility margins irrespective of sales volume declines, and some North American regulated utilities have used this approach to manage declining sales volumes historically primarily due to conservation (see charts 1 and 2).

Chart 1

Revenue Decoupling Available To Electric Utilities Across North America

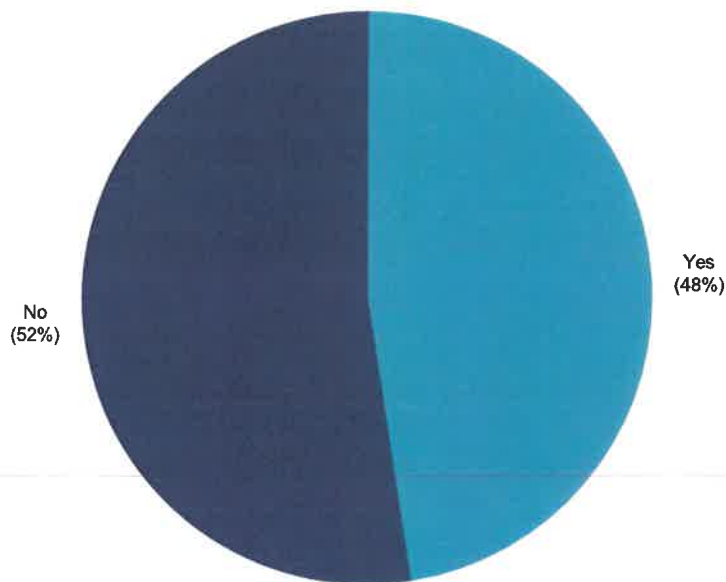


Source: S&P Global Ratings and company data.
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North American Regulated Utilities Face Additional Risks Amid Coronavirus Outbreak

Chart 2

Revenue Decoupling Available To Gas Utilities Across North America



Source: S&P Global Ratings and company data.
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Some Electric Utilities Could Be Vulnerable To Pandemic Risks Given Limited Downside Cushion

For utilities with negative outlooks or limited cushion in their financial risk profiles, most at risk would be those electric utilities that serve large commercial and industrial customers. Decoupling is not available in every state, and varies between electric and gas utilities (see charts 1 and 2). As such, electric utilities with disproportionately large commercial and industrial customers could be vulnerable, should the COVID-19 outbreak persist beyond our base-case expectations. This reflects our view that electric utilities whose revenues largely depend on commercial and industrial activity could see weaker cash flows if the outbreak persists, heightening regulatory lag, and weakening their ability to earn their authorized returns (see table 1).

Table 1

Select North American Regulated Utilities With High C&I Exposure

Retail Revenues ('000)

Utility name	Residential	Commercial	Industrial	Total	C&I revenues as a % of total retail revenues
ALLETE Inc.	125,339	141,823	465,335	732,497	83%

North American Regulated Utilities Face Additional Risks Amid Coronavirus Outbreak

Table 1

Select North American Regulated Utilities With High C&I Exposure (cont.)

Retail Revenues ('000)

Utility name	Residential	Commercial	Industrial	Total	C&I revenues as a % of total retail revenues
Wheeling Power Co.	51,556	42,123	195,678	289,357	82%
Southwestern Public Service Co.	376,530	424,218	474,205	1,274,953	70%
Northern Indiana Public Service Co.	494,682	507,730	615,169	1,619,793	69%
Mississippi Power Co.	273,058	293,464	320,827	887,349	69%
Otter Tail Power Co.	127,539	211,261	59,267	398,067	68%
Entergy Louisiana LLC	1,235,152	1,002,636	1,455,084	3,692,871	67%
Madison Gas and Electric Co.	143,780	254,525	13,545	411,850	65%
Black Hills Power Inc.	75,319	99,081	32,747	207,147	64%
Northern States Power Co. (Wisc.)	267,919	307,277	155,993	731,189	63%
MidAmerican Energy Co.	695,919	437,020	758,342	1,891,280	63%
Interstate Power and Light Co.	594,530	502,986	507,157	1,604,673	63%
Sierra Pacific Power Co.	276,436	262,688	187,519	726,644	62%
Wisconsin Public Service Corp.	382,776	381,459	239,595	1,003,832	62%
Public Service Co. Of Colorado	1,049,128	1,263,666	416,784	2,737,949	61%
Monongahela Power Co.	430,457	282,024	375,511	1,087,993	60%
Southern Indiana Gas and Electric Co.	218,234	158,617	168,935	545,786	60%
Montana-Dakota Utilities Co.	126,173	149,843	36,081	312,097	60%

C&I--Commercial and Industrial class of customers. Source: U.S. Energy Information Administration (EIA) -Form 861 (data as of 2018), S&P Global Ratings.

Utilities With Cyclical Non-Utility Businesses May See Downturns In These Higher-Risk Areas

S&P Global Ratings economists now forecast a global recession this year, with risks firmly on the downside. In the U.S., this means marginally negative growth in the first quarter, with a seasonally adjusted, annualized contraction of about 6% in the second quarter before recovery begins in the second half of the year. Separately, S&P Global Ratings also lowered all of its West Texas Intermediate (WTI) and Brent Henry crude oil price assumptions, including its Henry Hub natural gas price assumption for 2020-2022 and beyond. The growth prospects for utilities with cyclical non-utility activities are partially tied to macroeconomic factors. Hence, utilities with these higher-risk businesses, including those with exposure to construction services or midstream, may see faster downturns in the cycle in a prolonged outbreak. For those with midstream activities the

North American Regulated Utilities Face Additional Risks Amid Coronavirus Outbreak

credit risks primarily reflect the potential for incremental commodity and volumetric risks, which are largely mitigated through fixed contractual arrangements with third-party counterparties or through hedges (see table 2).

Table 2

Select North American Regulated Utilities With Cyclical Non-Utility Businesses

Utility/rating	Non-utility business	% of non-utility business*	Base-case FFO/debt for 2020	Ratings downside trigger
Southwest Gas Holdings Inc. (BBB+/Negative/--)	Construction Services	25-30%	19-20%	19%
OtterTail Corp. (BBB/Stable/--)	Plastics & Manufacturing	25%	19-20%	20%
MDU Resources (BBB+/Stable/A-2)	Construction Materials & Services	50%	20-23%	15%
CenterPoint Energy Inc. (BBB+/Stable/A-2)	Midstream	15%	14%	13%
OGE Energy Corp. (BBB+/Stable/A-2)	Midstream	20%	21-22%	16%
DTE Energy Co. (BBB+/Stable/A-2)	Midstream	15%	14-15%	13%
Dominion Energy Inc. (BBB+/Stable/A-2)	Midstream	15-20%	15-16%	13%
Sempra Energy (BBB+/Negative/A-2)	Midstream	15%	16%	16%
AltaGas Ltd (BBB-/Stable/--)	Midstream	50%	11-12%	10%

*Compared to total consolidated EBITDA. FFO--Funds from operations. Source: S&P Global Ratings and company data.

Those With Tight Construction Deadlines Face Project Execution Risk

In general, the sector operates with negative discretionary cash flow. This in large part reflects the capital-intensive nature of a sector that spends capital on various projects, such as replacing power generation plants, investing in liquefied natural gas (LNG) facilities, modernizing an aging grid, and investing in technology. For utility holding companies, such as Southern Co., Dominion Energy Inc., and Duke Energy Corp., already beset with delays to key projects, and that face tight deadlines, a persistent viral outbreak heightens project execution risk for certain large scale projects (see table 3).

Table 3

Select N.A. Regulated Utilities Undertaking Large Capital Projects

Utility/rating	Project name	Project type	Expected in-service date
Southern Co. (A-/Negative/A-2)	Alvin W. Vogtle Power Plant Units 3 & 4	Nuclear Power Generation	2021§
Dominion Energy Inc. (BBB+/Stable/A-2)	Atlantic Coast Pipeline (ACP)	Inter-state Gas Pipeline	2021**
Duke Energy Corp. (A-/Stable/A-2)	Atlantic Coast Pipeline (ACP)	Inter-state Gas Pipeline	2021**

§For Unit 3. Unit 4 in-service date-November 2022. **Phase 1: Mechanical completion of ACP project. Source: S&P Global Ratings and company data.

Unrestrained Market Volatility May Challenge Planned Equity Issuance Or Access To Liquidity

Recent turbulence in the equity markets, some of which is linked to COVID-19, suggests that market volatility could continue for some time. We previously noted that utilities are experiencing a general weakening in their financial measures. We expect the sector's average funds from operations (FFO) to debt to be just below 16% for 2020-2021, up from a forecast low of 15.5% for 2019, and down from approximately 18% in 2017. The expected improvement for the 2020-2021 period in part reflects planned equity issuances by some utilities. In 2019, the regulated utilities sector issued over \$30 billion in equity, and our current base case assumes equity issuance of approximately \$7 billion in 2020. We now believe that market volatility may put a damper on previously planned equity issuance, exposing those with reduced cushion in their financial measures. Moreover, we recently observed a general tightening of the commercial paper (CP) market but utilities now appear to be effectively managing to extend maturities. Investment-grade regulated utilities have historically maintained at least an adequate or better liquidity assessment, largely reflecting access to the capital markets, and ample coverage on their committed revolving credit facilities, some of which is used as back-up for their CP activities. Notwithstanding, given how quickly capital markets can change, this is an area we will continue to monitor closely.

Greatest Risks Are Limited To A Few Outliers With Limited Downside Protection

Overall, the risk of negative rating actions is limited to a few outliers and those with limited cushion at their ratings. We rate over 240 entities across the sector, and the vast majority of North America regulated utilities benefit from credit-supportive regulatory frameworks, have ample liquidity on their committed credit facilities, and can delay the timing of their capital expenditures as conditions change. As such, we do not expect to see a widespread weakening of credit quality for the sector because of COVID-19. That being said, the virus' outbreak presents some uncertainty, and we could see selected rating actions as we continue to monitor developments. In the end, our assessment of the impact of COVID-19 on the sector's credit quality may hinge on three key areas, namely, continued access to the capital markets for funding and liquidity needs, robust regulatory mechanisms to mitigate potential declines in sales volumes, and for those with tight construction schedules, sufficient protocols and flexibility to adjust work sequencing while adhering to strict deadlines.

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COVID-19: The Outlook For North American Regulated Utilities Turns Negative

April 2, 2020

Key Takeaways

- We are revising our assessment of the North America regulated utility industry to negative from stable.
- We expect that the utility industry will remain a high-credit-quality investment-grade industry.
- We expect that the industry's median rating, which is 'A-', could weaken to the 'BBB+' level.
- Prior to the coronavirus outbreak in North America about 25% of the utilities had a negative outlook or ratings that were on CreditWatch with negative implications.
- Additionally, many utilities with a stable outlook have minimal financial cushion at the current rating level.
- We expect COVID-19 will weaken the industry's 2020 funds from operations (FFO) to debt by about 100 basis points.

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S&P Global Ratings acknowledges a high degree of uncertainty about the rate of spread and peak of the coronavirus outbreak. Some government authorities estimate the pandemic will peak about midyear, and we are using this assumption in assessing the economic and credit implications. We believe the measures adopted to contain COVID-19 have pushed the global economy into recession (see our macroeconomic and credit updates here: www.spglobal.com/ratings). As the situation evolves, we will update our assumptions and estimates accordingly.

S&P Global Ratings is revising downward its assessment of the North America utility industry to negative from stable. The North America utility industry consists of about 250 water, gas, and electric utilities. While we expect the sector to remain an investment-grade industry, we nevertheless project a modest weakening of credit quality within the industry. Credit quality had been gradually weakening prior to the COVID-19 outbreak with about 25% of companies on negative outlook or with ratings on CreditWatch with negative implications. We view COVID-19 as a source of incremental pressure and expect that the recession will lead to an increasing number of downgrades and negative outlooks. Currently, the median rating within the industry is 'A-' and over the next 12 months, we expect that the industry median could move to 'BBB+'.

Credit Quality Was Weakening Even Before COVID-19

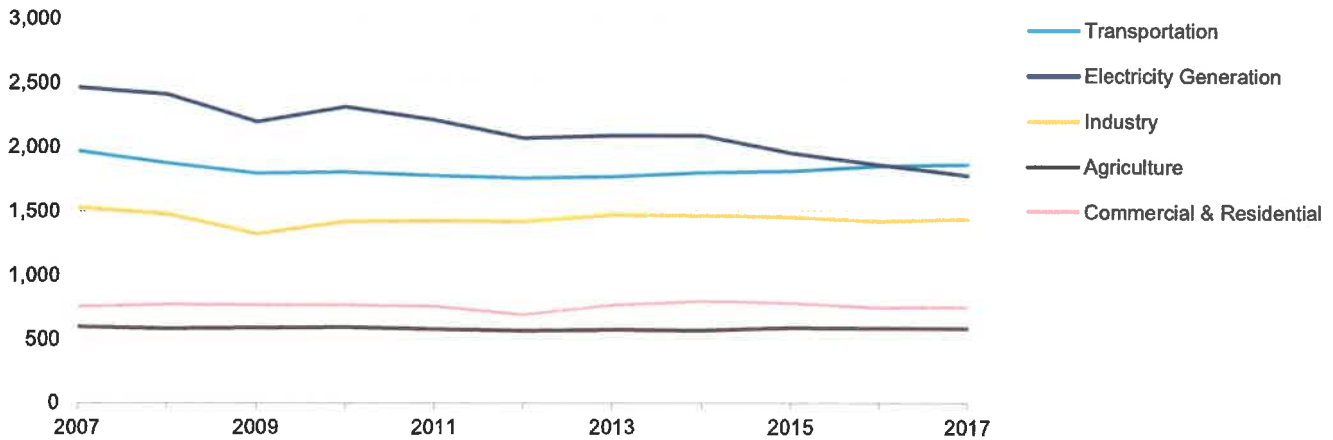
The North America regulated utility industry's credit quality was already weakening prior to COVID-19. This reflected companies' more consistent ability to manage credit measures closer to the downgrade threshold, leaving very minimal financial cushion at the current rating level. We generally view the industry's cash flows as more predictable and steady than most other corporate industries. Even so, unless a management team can proactively implement corrective actions, a utility with minimal financial cushion at the current rating coupled with an unexpected material event, typically results in a negative outlook or a downgrade.

The industry has faced many unexpected events and credit obstacles over the past two years. Some of these include safety (NiSource Inc.), wildfires (PG&E Corp., Edison International, and Sempra Energy), large capital projects (Southern Co., SCANA Corp., Eversource Energy, Duke Energy Corp., and Dominion Energy Inc.), utility acquisition (Fortis Inc., Emera Inc., ENMAX Corp., and NextEra Energy Inc.), and nonutility acquisitions (DTE Energy Co.). Each of these instances have either significantly reduced the prior cushion at the current rating level, triggered negative outlooks, or downgrades.

Also pressuring the industry's credit quality is the critical focus on environmental, social, and governance (ESG) factors. Over the past decade, the industry has done an outstanding job to significantly reduce its greenhouse gas emissions and reduce its reliance on coal-fired generation.

Chart 1

Total U.S. Greenhouse Gas Emissions By Economic Sector From 2007-2017 Million metric tons of CO2 equivalents

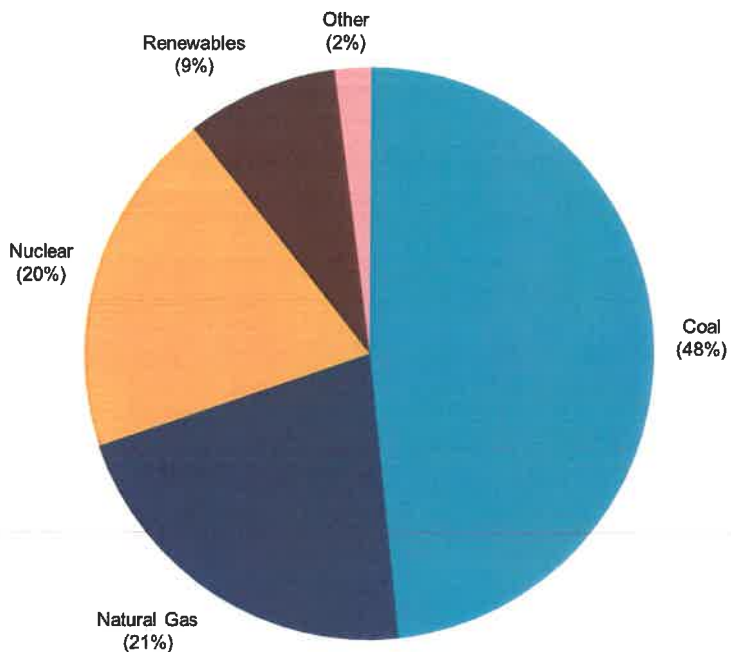


Source: U.S. Energy Information Administration.
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COVID-19: The Outlook For North American Regulated Utilities Turns Negative

Chart 2

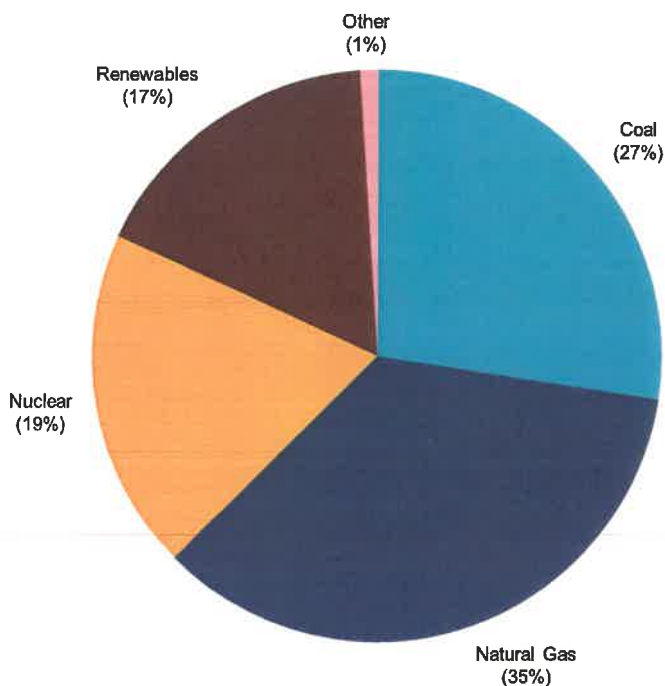
U.S. 2008 Generation Mix



Source: U.S. Energy Information Administration.
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Chart 3

U.S. 2018 Generation Mix



Source: U.S. Energy Information Administration.
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However, there are individual companies such as American Electric Power Co. Inc., Ameren Corp., and Evergy Inc. that despite having long-term plans to reduce their reliance on coal-fired generation, will continue to rely heavily on that fuel source for the next decade, possibly pressuring credit quality.

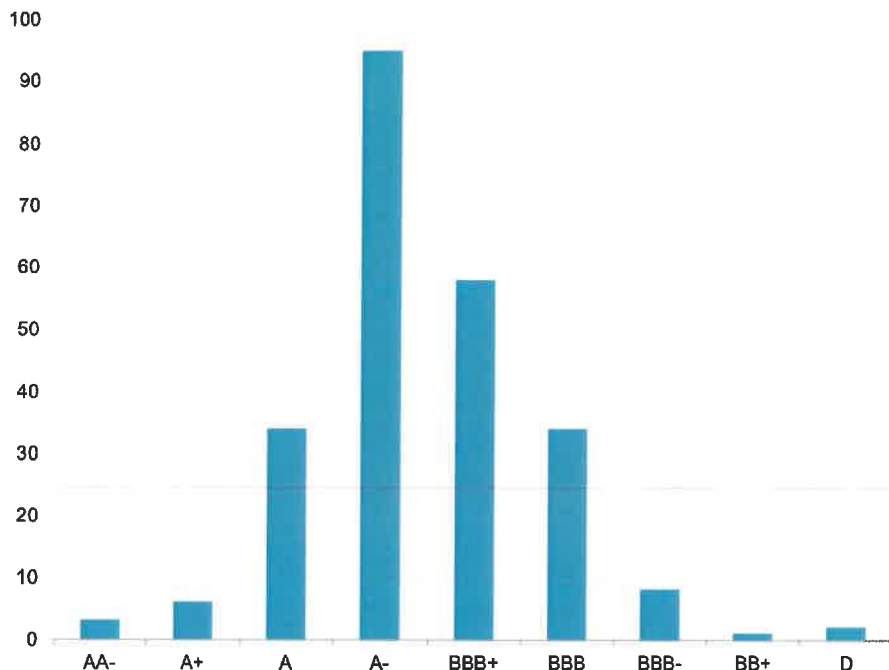
Rating Upgrades And Downgrades

Over the past decade, there have been generally more upgrades than downgrades in the sector. This has strengthened the utilities' credit quality since the financial recession and currently, the median rating within the industry is 'A-'.

COVID-19: The Outlook For North American Regulated Utilities Turns Negative

Chart 4

North American Regulated Utilities Ratings Distribution 2019



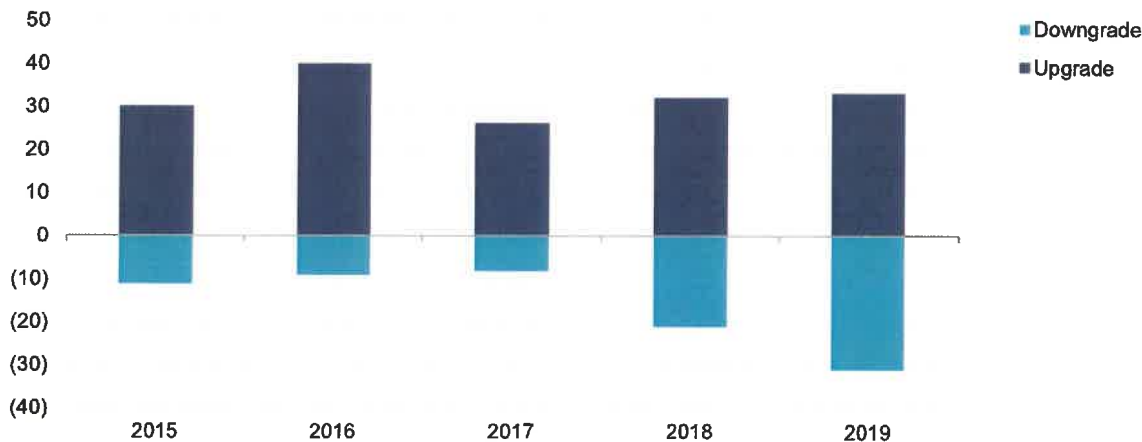
Source: S&P Global Ratings.
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When analyzing our rating upgrades and downgrades in the sector for 2019, even prior to COVID-19, we note a weakening of credit quality.

COVID-19: The Outlook For North American Regulated Utilities Turns Negative

Chart 5

North American Regulated Utilities Upgrades And Downgrades



Source: S&P Global Ratings.

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While 2019 may initially appear to be similar to prior years with upgrades outpacing downgrades at 33 to 31, the underlying analysis tells a different story. In 2019, about 60% of the upgrades were attributed to S&P Global Ratings' revised group rating methodology criteria. Under the revised criteria, we placed more emphasis on the regulation of a utility allowing for a subsidiary with effective regulation and with a stand-alone credit profile that is higher than its group to potentially be rated higher. Absent the revised criteria, downgrades would have outpaced upgrades by 30 to 13 in 2019. This is a clear indication that even before COVID-19, the credit quality of the North America regulated utility sector had weakened.

Operating With Minimal Financial Cushion

While many companies with a negative outlook such as Puget Energy Inc. have minimal financial cushion at their current rating level, many others with a stable outlook also have minimal financial cushion at their current rating level. Companies with a stable outlook and minimal financial cushion include Exelon Corp., ALLETE Inc., American Water Works Co. Inc., Edison International, AVANGRID Inc., DPL Inc., CenterPoint Energy Inc., and Madison Gas & Electric Co. As the financial effects of COVID-19 continue to take hold, we expect that even companies with stable outlooks may experience ratings downward pressure. This is another reason that underscores our assessment that the industry outlook has turned negative.

How COVID-19 May Affect The Sector

In general, we assume that the U.S. will experience more than a 12% contraction in GDP during the second quarter and estimate the pandemic will peak between June and August (Global Macroeconomic Update, March 24: A Massive Hit To World Economic Growth, March 24, 2020).

For the North America utility industry, we expect that COVID-19 will reduce the commercial and

COVID-19: The Outlook For North American Regulated Utilities Turns Negative

industrial (C&I) usage (North American Regulated Utilities Face Additional Risks Amid Coronavirus Outbreak, March 19, 2020). While some utilities will be able to offset some of the lower C&I usage through various regulatory mechanisms that include decoupling of revenues mechanisms and formula rates, many others will see a weakening of sales. Furthermore, as the recession continues to take hold, we expect bad debt expense will increase as it becomes increasingly more difficult for customers to pay their bills. While many utilities can defer these costs for future recovery, as these balances grow, historically we have seen incidents where utilities negotiate with their commission's to write off some of these costs as part of a larger agreement. Overall, we expect that these effects will result in a weakening of credit measures.

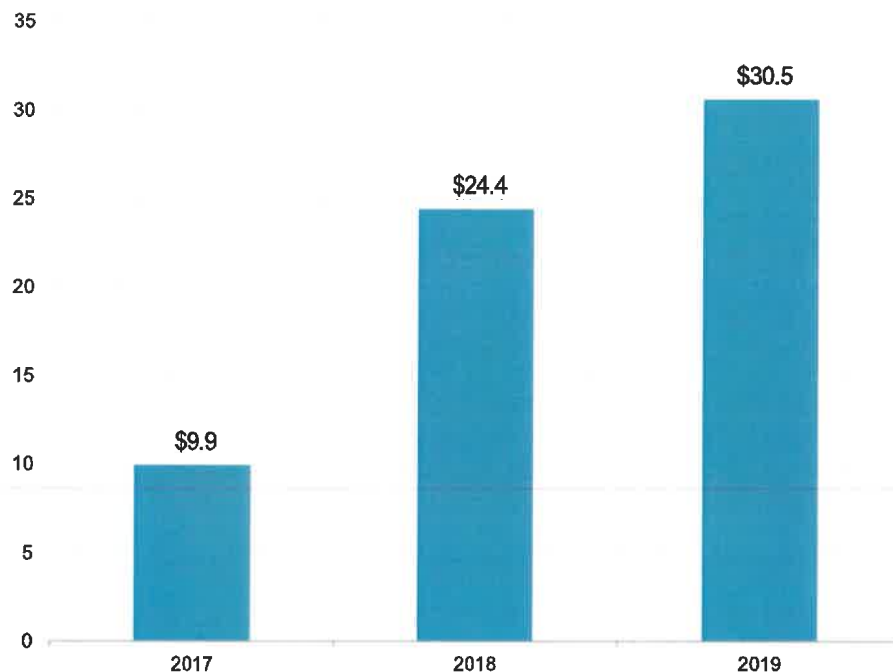
On a positive note, the industry continues to exhibit adequate liquidity and access to the debt markets, despite uneven performance of the commercial paper market for tier 2 issuers. The industry is benefiting from proactive risk management of establishing large credit facilities, having good access to additional liquidity through new term loans from banks, and public issuance of utility debt. These positive developments contrast to the last financial recession, when many utilities fully drew on their available credit lines and access to the banks or to the public debt market was effectively shut for many weeks.

Yet availability to the equity markets remains extraordinarily challenging. In 2019, the industry issued more than \$30 billion in equity to preserve credit quality and heading into 2020 many companies within the industry assumed equity issuances as part of their financing plans. Given the industry's negative discretionary cash flow because of its high capital spending and lack of access to the equity markets, we expect that this will also lead to a weakening of credit measures.

COVID-19: The Outlook For North American Regulated Utilities Turns Negative

Chart 6

North American Regulated Utilities Equity Issuance In Billions



Source: S&P Global Ratings.
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Another area of concern are utilities that rely to various degrees on nonutility businesses that have commodity exposure (S&P Global Ratings Cuts WTI And Brent Crude Oil Price Assumptions Amid Continued Near-Term Pressure, March 19, 2020). These include OGE Energy Corp., CenterPoint Energy Inc., DTE Energy Co., Dominion Energy Inc., Public Service Enterprise Group Inc., NextEra Energy Inc., and Exelon Corp. While many of them are well hedged in the near term, volumetric risk and a longer-term weakening of commodity prices could have a material effect on their credit measures. Overall, assuming that the effects of COVID-19 is only temporary, we would expect that the industry's 2020 FFO to debt will weaken by about 100 basis points, consistent with our revised negative outlook for the industry.

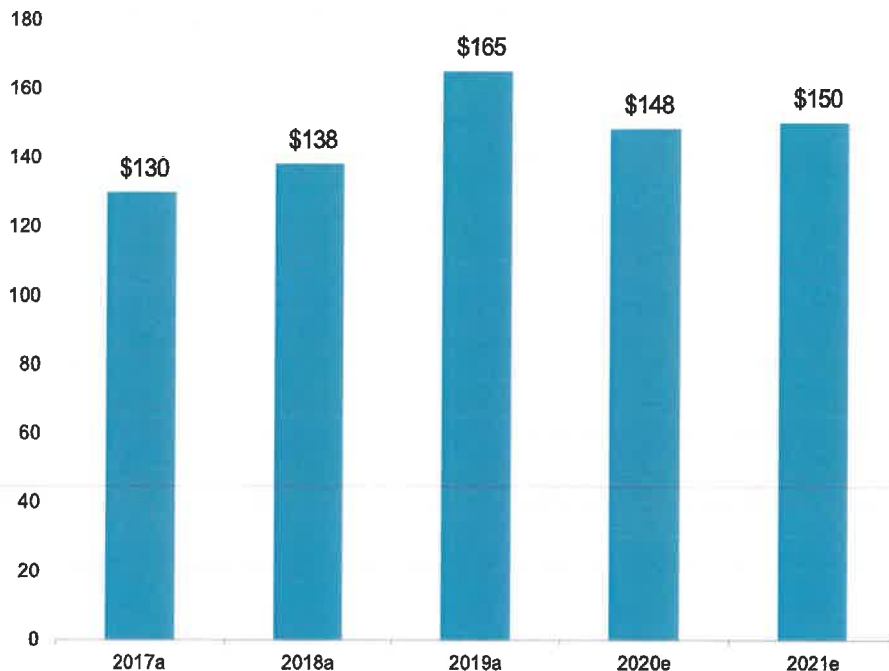
The Industry Has Levers

Depending on the severity of the recession, the industry has important levers that could mitigate some of the risks. This includes reducing capital spending and dividends. Currently, we estimate that 2020 capital spending will approximate \$150 billion.

COVID-19: The Outlook For North American Regulated Utilities Turns Negative

Chart 7

North American Regulated Utilities Capital Expenditures In Billions



a--actual. e--estimate. Source: S&P Global Ratings.

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Based on our conversations with the companies within the industry there is a wide range as to how deeply a utility can reduce its capital spending and still maintain safe and reliable services. Some utilities can only reduce capital spending by as little as 15%, others by as much as 60%. Our analysis indicates that the majority of utilities could reduce their capital spending on a temporary basis by about 40% and maintain safe operations. Should the recession prolong, we would expect that the industry would generally first reduce capital spending and only afterward cut dividends. There is precedent that during times of high financial stress, utilities have reduced their dividends and we would expect that the industry, if necessary, would use this lever, acting prudently to preserve credit quality.

Credit quality of the North America regulated utility industry was already weakening prior to COVID-19. We believe that incremental challenges that the industry will face from this recession exacerbates financial pressure and underpins our revised negative outlook for the industry. However, we also expect that this industry's credit quality will continue to outperform most other corporate industries despite these challenges. Furthermore, we expect that the utilities will use the levers available to them to reduce credit risks and limit the financial impact from COVID-19. Overall, while we expect a weakening to the industry's credit quality, we continue to firmly believe that this industry will remain a high-quality, investment-grade industry.

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An Old Age Problem? While North American Regulated Utilities' Credit Measures Could Dip On Pension Underfunding, Cost Recovery Ability Supports Credit Quality

April 20, 2020

Key Takeaways

- We anticipate a weakening in the North American regulated utility industry's funds from operations (FFO) to debt by about 50 basis points due to postretirement fund investment losses reflecting recent market returns, potentially lower postretirement contributions, and a lower discount rate when valuing postretirement benefit obligations (PRBOs).
- However, on a qualitative basis, we fully expect these companies will effectively manage their regulatory risk and recover postretirement costs through the regulatory process over the long term.
- As such, we do not anticipate that any weakening in credit measures over the next year due to further pension underfunding will directly lead to an erosion in credit quality.
- Over the past decade, the industry has steadily improved its postretirement funding levels, primarily reflecting utility contributions and solid market returns, providing some flexibility for the current economic downturn.

Many utilities are proactively managing the risks of an aging workforce. Associated with this risk is the level of funding for PRBOs. Over the past decade, funding levels have gradually improved, reflecting company contributions, market returns, and benefit modifications. At year-end 2019, the industry's net PRBOs were manageable, with average funded levels greater than 80%, which provides some flexibility for short-term asset value declines and adverse liability revaluations, such as what we'll likely see during this economic downturn.

S&P Global Ratings acknowledges a high degree of uncertainty about the rate of spread and peak of the coronavirus outbreak. Some government authorities estimate the pandemic will peak about midyear, and we are using this assumption in assessing the economic and credit implications. We believe the measures adopted to contain COVID-19 have pushed the global economy into recession (see our macroeconomic and credit updates here: www.spglobal.com/ratings). As the

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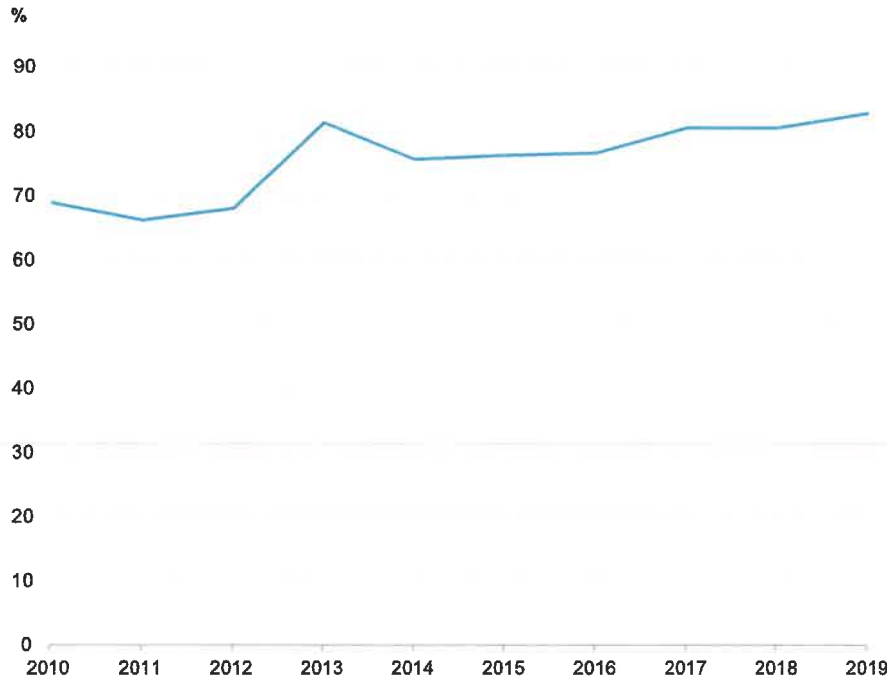
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situation evolves, we will update our assumptions and estimates accordingly.

Chart 1

North American Regulated Utilities' Approximate Average Postretirement Obligation Funding Levels



Source: S&P Global Ratings and company data.
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As PRBOs represent a future call on cash that provide no future offsetting operating benefit for corporations, S&P Global Ratings increases its adjusted debt figures for corporate entities for the underfunded PRBO net of tax benefits. Some of the critical assumptions we use in determining the underfunded level include asset returns, company contributions, and discount rates.

S&P Global Ratings PRBO Debt Adjustment

$$(Gross Pension Liability + Gross OPEB Liability - Pension Plan Assets - OPEB Plan Assets) \times (1 - Tax Rate)^*$$

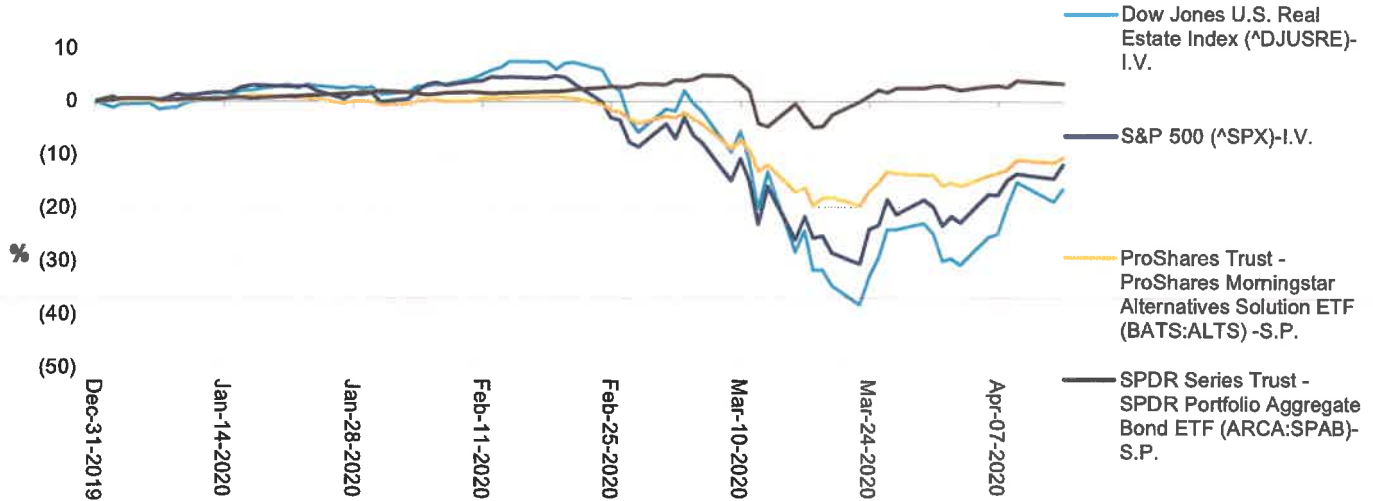
*We do not make this adjustment if plan assets are greater than plan liabilities.
OPEB—Other postemployment benefits.

Currently, S&P Global Ratings is projecting a 12.7% decline in the S&P 500 for 2020 (An Already Historic U.S. Downturn Now Looks Even Worse, April 16, 2020). As COVID-19 has contributed to broader market turbulence during the early part of 2020, we expect that lower asset valuations and a lower discount rate will cause us to increase our PRBO debt adjustment for the utility

industry, leading to weaker credit measures. For our analysis, because a significant portion of postretirement assets are invested in fixed income, we project that the industry's 2020 postretirement assets have declined by only about 5%, using current market returns through early April. Our analysis is based on 2019 data for 90 publically disclosed utility companies, which, on average, had an allocation for their postretirement funds to equity securities (40%), fixed income securities (38%), real estate (2%), and other alternative assets (20%).

Chart 2

Asset Performance Through April 14, 2020

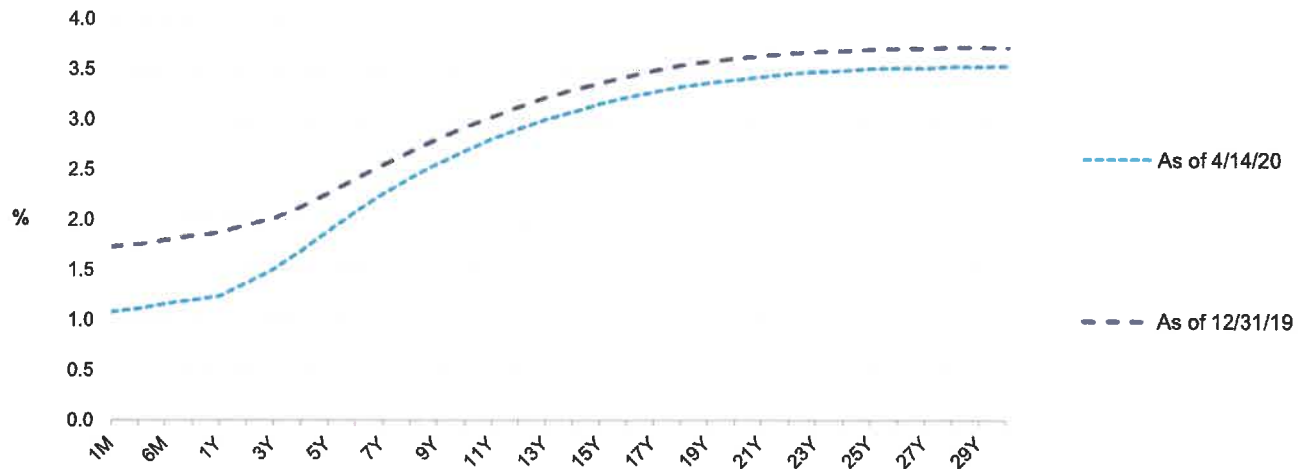


I.V.--Index value. S.P.--Share pricing. Source: S&P Global Ratings and company data. Copyright © 2020 by Standard & Poor's Financial Services LLC. All rights reserved.

We also expect higher PRBOs because of a lower assumed discount rate used to determine the obligations. The use of a lower discount rate increases PRBOs on the balance sheet. As a result, our adjusted debt for corporates rises, thus weakening credit measures. High-investment grade corporate bond yield curves, which are often used as a proxy for utility companies when determining the discount rate of their PRBOs, have moved downward in 2020. This is also consistent with our projection for 10-year treasury yields to end 2020 at 1.1% (An Already Historic U.S. Downturn Now Looks Even Worse, April 16, 2020), which is lower than the 1.8% yield at year-end 2019. Using the current change in the 'AA' corporate bond yield curve from year-end 2019 as a proxy, we estimate that the discount rates used to value many of the postretirement obligations could fall by 0.25%. Based on public disclosures, we estimate, that a 0.25% decline in discount rates corresponds to about a 3% increase in gross PRBOs.

Chart 3

'AA' Corporate Bonds All-In Yield Moving Average



M--Month. Y--Year. Source: S&P Global Ratings.

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When compounding the impacts of declining asset values and lower discount rates (assuming ongoing service and interest costs and potentially lower contributions in 2020), we estimate that net postretirement obligations could increase by about 100% and that PRBO funding ratios for utilities could decline by an average of about 10%. Based on our analysis, we expect that the North American regulated utility industry's FFO to debt will weaken by about 50 basis points. However, we do not expect a uniform weakening of credit measures. For about two-thirds of the industry where PRBOs do not represent a material portion of total adjusted debt, we expect that FFO to debt will only deteriorate by about 30 basis points. We expect that the credit measures for utilities that have pension liabilities representing a higher percentage of total adjusted debt will be most negatively affected.

The 20 North American Utilities With The Largest Postretirement Obligations As A Proportion Of Total Adjusted Debt

Company	PRBO as a percentage of total adjusted debt (2018)	Net PRBO (mil. US\$)*
Ontario Power Generation Inc.	41.50%	5,219
Connecticut Natural Gas Corp.	29.30%	103
The United Illuminating Co.	19.40%	261
Unitil Corp.	16.80%	143
Otter Tail Corp.	16.50%	170
Southern Connecticut Gas Co.	16.50%	74
Oncor Electric Delivery Co. LLC	16.10%	1,764
IDACORP Inc.	15.70%	525

The 20 North American Utilities With The Largest Postretirement Obligations As A Proportion Of Total Adjusted Debt (cont.)

Company	PRBO as a percentage of total adjusted debt (2018)	Net PRBO (mil. US\$)*
Hawaiian Electric Industries Inc.	15.10%	527
New York State Electric & Gas Corp.	14.50%	271
Commonwealth Edison Co.	14.30%	1,979
Southwest Gas Corp.	13.70%	425
Exelon Corp.	13.30%	6,395
Central Maine Power Co.	12.30%	192
Cleco Power LLC	12.10%	275
Southwest Gas Holdings Inc.	12.00%	425
Rochester Gas & Electric Corp.	11.50%	175
Avangrid Inc.	11.20%	1,107
Evergy Metro Inc.	11.10%	487
Baltimore Gas & Electric Co.	10.60%	446

Note: Companies only included if the debt adjustment had a direct impact on the rating, i.e., noninsulated subsidiaries were excluded. *Latest available data as per S&P Global Ratings. PRBO--Postretirement benefit Obligations. Source: S&P Global Ratings and company data.

Effect On Credit Quality In 2020

We expect that the current recession and changes to key pension assumptions will result in modestly weaker financial measures for the North America regulated utility industry. However, we don't expect this will directly lead to a deterioration of the industry's credit quality though it may add incremental pressure to issuers that are already under strain from weak metrics. Still, most companies that have large postretirement obligations as a proportion of total adjusted debt--whose credit measures will likely be most affected by these changes--will not experience a material weakening of credit quality. On a qualitative basis, we assume that utilities will continue to fully recover pension costs and obligations through their ratemaking process. This is based on decades of almost full recovery of such costs with very few exceptions over this timeframe. We also note the North America regulated utility industry's long history of effectively managing regulatory risk. As such, we expect no direct deterioration in credit quality due to pension underfunding over the next year, despite an expected modest weakening to the industry's credit measures in 2020.

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North American Regulated Utilities Face Tough Financial Policy Tradeoffs To Avoid Ratings Pressure Amid The COVID-19 Pandemic

May 11, 2020

Key Takeaways

- Some North American regulated utilities are negatively affected by weaker economic conditions related to COVID-19 and are facing unexpected incremental pressure on ratings.
- Even before the current downturn and COVID-19, a confluence of factors, including the adverse impacts of tax reform, historically high capital spending, and associated increased debt, resulted in little cushion in ratings for unexpected operating challenges.
- We expect most utilities will be allowed to account for and defer the costs associated with COVID-19 through existing regulatory mechanisms or future rate cases, although the timing and extent of these protections adds uncertainty to already stretched financial profiles.
- With this as a backdrop, individual companies' financial policies may be tested, as some risk jeopardizing ratings that provide efficient access to capital that feeds this sector.
- We believe that most management teams remain mindful of the benefits of maintaining credit quality and limiting risk, and that they will take countermeasures to offset financial profile weakness.
- Tough tradeoffs may have to be considered to forestall potential downgrades and we think most companies will have some ability to influence better outcomes, even in a pandemic.

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As many sectors face unprecedented disruption related to demand contraction and turbulent credit markets, our utility analysts are actively engaging with the companies we rate to discuss potential challenges utility management teams face. While utilities are not immune from the effects of the sudden deterioration of economic activity, they generally are well-positioned to ride out short-term demand shocks, including those associated with COVID-19. Utility companies operating in the U.S. and Canada benefit from some of the most credit-supportive business models of any issuers rated by S&P Global Ratings. A well-run utility will typically earn a fair return

on invested capital, and recover all of its costs, including debt service, thanks to the prevalence of cost-of-service rate-making and durable regulatory frameworks. These companies benefit from strong barriers to entry in the form of regulation over a service territory that effectively grants the utility monopoly status. Threats from competitors and substitute products are limited and utilities have demonstrated an ability to manage recent hurdles such as distributed generation and climate change. Still, weaker economic conditions related to COVID-19 have affected some utilities and as the realities of lost revenue comes into focus, we find they are facing unexpected incremental pressure on ratings.

S&P Global Ratings acknowledges a high degree of uncertainty about the rate of spread and peak of the coronavirus outbreak. Some government authorities estimate the pandemic will peak about midyear, and we are using this assumption in assessing the economic and credit implications. We believe the measures adopted to contain COVID-19 have pushed the global economy into recession (see our macroeconomic and credit updates here: www.spglobal.com/ratings). As the situation evolves, we will update our assumptions and estimates accordingly.

Despite Favorable Regulation, Management's Aggressiveness Leaves Little Room For Unexpected Setbacks

Most utility companies will be able to manage the impacts of COVID-19, as existing recovery mechanisms and rate proceedings will allow management teams to recapture lost cash flow with little disruption to financial risk profiles. Bad debts from mandated and voluntary policies not to cut power to vulnerable ratepayers will add to utility pressures, but we expect that utilities will collect most of this through rate cases and the creation of deferred regulatory assets. Given this type of stability in the face of economic downturns, our ratings on regulated utility companies are among the highest in our Corporate and Infrastructure Ratings practices, and we take fewer adverse rating actions in the sector in times of economic turmoil. Of course, utility companies face credit risks, but they are usually not in the form of demand shocks that so often plague typical industrial companies. More often, downgrades result from poorly executed strategic plans, stretched financial profiles from expansion, adverse regulatory rulings, or pressure from operational stumbles.

We certainly do not contend that demand does not matter to utility credit risk: it can at the margin. However, we do not see the pronounced swings in demand typical of more cyclical companies. The extent to which reduced demand prompts ratings actions, which does not occur often, depends on the individual utility and its management of regulatory risk. The relative stability of demand during a recession reflects the essential nature of the commodities provided and the fact that residential customers typically account for the majority of sales. Industrial and commercial demand can vary more, but the picture remains relatively predictable overall. What really differentiates utilities during severe downturns is the consistency and transparency of regulation, which can protect utility top lines. Regulation around the U.S. and Canada varies widely but many regulators have provided support to utilities from demand shortfalls related to conservation or weather, in the form of mechanisms that decouple revenue from sales, formula rate-making, or through other regulatory processes that enable utilities to defer costs for future recovery. In fact, it is because of conservation and the need to manage their businesses without volumetric growth for the last decade that the industry benefits from many favorable regulatory mechanisms. With respect to the current situation, we expect most utilities will be allowed to defer and collect the costs associated with COVID-19 through existing regulatory protections or future rate cases, although the timing and extent of these protections adds uncertainty to already stretched financial profiles.

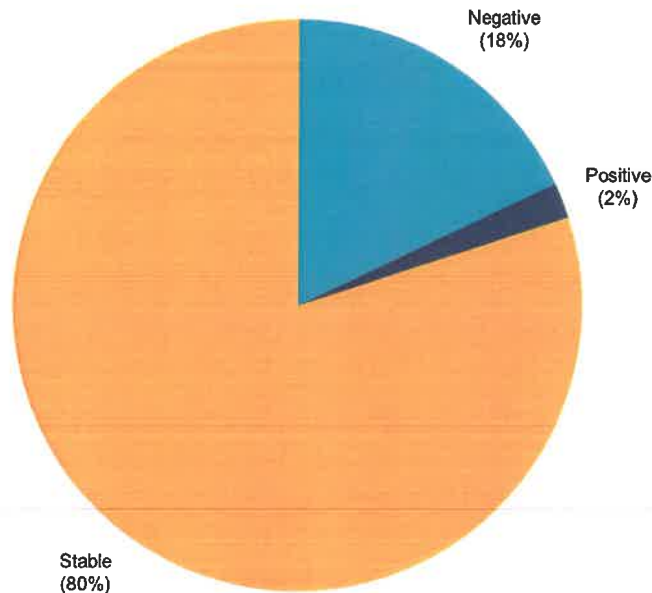
Table 1

COVID-19 Cost Recovery Provisions

Deferral	Customer payment plan	Pending	Other
Alaska	Colorado	Arizona	Georgia
Arkansas	New Hampshire	Illinois	Texas-PUC
California	North Carolina	Kentucky	
Connecticut	Ohio	Pennsylvania	
Dist. Of Columbia	Rhode Island	Virginia	
Georgia		Wisconsin	
Idaho			
Maryland			
Texas-PUC			
Wyoming			

As of April 20, 2020. Deferral = Costs and/or lost revenues may be deferred for future recovery. Customer payment plan = Lost revenue associated with suspension moratorium to be recovered from individual customer over time. Pending = Proceeding underway/legislation pending to determine cost recovery. Georgia--Lost revenue associated with suspension moratorium proposed to be recovered through existing rate plan for one utility. Texas--PUC-costs or lost revenues may be deferred for future recovery for utilities; interim funding mechanism in place for retail electric providers. Source: Regulatory Research Associates, a group within S&P Global Market Intelligence.

This added uncertainty is really the focal point for our analyses as we update our models for 2020-2022 to reflect the severe U.S. recession in the second quarter of 2020 and a recovery in the second half of the year. As we've noted, many utilities already face rating pressure due to a confluence of factors, including the adverse impacts of tax reform of 2019, historically high capital spending of about \$150 billion per year, and associated increased debt levels. These factors have resulted in an unusually high percentage of negative outlooks for the sector. As of March 31, 2020, the percentage of issuers with negative outlooks was near 20% (reduced from 25% in late 2019).

North American Regulated Utilities--Outlook Distribution

As of March 31, 2020. Source: S&P Global Ratings.

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Complicating matters is that capital markets will likely remain choppy. The sector's heightened reliance on high equity offerings last year could be constrained due to COVID-19 and new debt issuance has surged in recent weeks as utilities placed historically high levels of additional debt for refinancing and liquidity purposes. The good news is that the debt markets have absorbed new investment-grade issuances, which alleviates immediate concerns about liquidity. The not-so-good news is that this may weigh on some balance sheets and stretched financial profiles. In the end, these issues may test individual companies' financial policies and reveal the amount of risk they are willing to carry without compromising the sector's efficient access to capital.

Stability May Have Set A Financial Policy Trap For Some Companies

The essential nature of utility services, including electric, natural gas, and water, and the strength of the regulatory frameworks across North America breeds a level of confidence that enables utility management teams to dial-in risk management in most business environments. They are accustomed to running with negative free cash, and many have adopted policies that target a level of financial leverage that is just above the downgrade thresholds we communicate in our research reports. Under normal conditions, this is manageable, and the stability of these businesses enables companies to do that with a high degree of success. However, the incremental challenges brought to bear during this pandemic have already tested the prudence of stretching the financial profile as a consistent business policy. Leverage enables companies to grow and realize attractive

returns as long as it is managed to optimal levels. The uncertainties related to COVID-19 have come on quickly, primarily from the commercial and industrial customers facing unprecedented business shocks, high unemployment, and from the downturn in nonregulated activities such as midstream energy and other services. Other pressure in the form of regulatory risk on the timing and extent of recovery related to COVID-19 costs such as bad debts, and swelling pension exposures add to the mix. For a few stretched issuers, the incremental challenges have already resulted in rating actions. For others, financial policy priorities may need reevaluation to solidify financial profiles and avoid credit deterioration, while many others will ride out the current downturn.

Some Utilities Have Limited Financial Cushion To Downside Triggers

Given the above, we believe that ratings pressure will remain to the downside through the 2020-2021 timeframe. The current high proportion of negative outlooks highlights that downside risks outweigh upside potential and a review of our existing projections for these companies only heightens concerns. A review of our projections for rated utility holding companies across the sector reflects the reality that tight cushions to downside triggers will likely persist. This sets the stage for downgrades to outpace upgrades for the near future, possibly lowering the median rating into the 'BBB' category for the first time in years. For many companies we rate, the forecast funds from operations (FFO) to debt ratio for the 2020-21 period is expected to reflect limited cushion above the downside trigger set in our published research. While that certainly does not mean that all of these companies will face downgrades, because some will begin to recover post-recession and others will take steps to address temporary weakness, it does highlight a tightening level of financial performance in an uncertain economic environment. With that said, we believe that management teams generally remain mindful of the benefits of maintaining stable credit quality and managing risk, and will take countermeasures to offset financial profile weakness.

Options Abound For Utilities, But Many Involve Unattractive Tradeoffs

Fortunately, most utility management teams have the ability to pull levers to target financial outcomes. While this is true in any sector, utilities' operating stability supports a greater degree of precision when managing financial risk against other stakeholder objectives. The capacity and willingness to take actions to offset the negative impacts of the current business environment will vary from company to company. So what options are available and at what costs? They include a range of choices including debt issuance (which may pressure credit measures) to reducing dividends and share repurchases (which may hurt share prices). We've highlighted some of the actions available to utility management teams and the costs associated with each (see table 2).

Table 2

Select Actions Regulated Utilities Could Take To Mitigate Operating Challenges

Action	Credit impact	Tradeoff/Costs
Proactive debt issuance	Alleviates immediate liquidity and refinancing concerns, no impact to FFO.	May pressure financial metrics.
Reduce operating and maintenance costs	Can help maintain financial performance including FFO/debt, offsetting lost revenue and bad debt.	If prolonged, may erode operational capabilities.
Reduce capital spending	Reduces free cash flow deficit and preserves cash but no impact on FFO/debt.	May delay key projects or growth plans.
Equity or hybrid capital issuance	Can immediately improve credit metrics to offset FFO shortfall.	Capital markets may limit access, dilution risk.

Table 2

Select Actions Regulated Utilities Could Take To Mitigate Operating Challenges (cont.)

Action	Credit impact	Tradeoff/Costs
Effective regulatory management	Can result in recovery of lost revenue and higher bad debt expense related to COVID-19.	Deferred recovery takes time to mitigate impact to metrics.
Reduce dividends and share repurchases	Reduced discretionary cash flow deficit, preserves cash, no impact to FFO.	Negatively affects share price.

FFO--Funds from operations. Source: S&P Global Ratings.

These steps are part of any utility's toolkit in seeking to secure an optimal capital structure for its business, but the COVID-19 recession is likely to add some urgency to reconsider alternatives. Others may even learn from the crisis, reassess their financial policy targets, and decide to sacrifice some growth or profit potential for the long-range benefit of preserving financial cushions necessary to support credit quality.

Utilities Seek Best Outcomes In A Down Economy--And Look Forward To Better Times

As COVID-19 sets the stage for a challenging year for utility sector credit quality, we remain reasonably optimistic that management teams will commit to credit quality to limit negative rating actions. Fortunately, for utilities, options remain available and most regulators are likely to support recovery of bad debts and lost revenues in one form or another. The painful reality is that COVID-19 came at a bad time for everyone, including utilities that already faced more potential ratings actions than is typical. For the most strained issuers, or those that may not fare as well in front of regulators vis-à-vis COVID-19 costs, this is where the rubber will hit the road in terms of evaluating financial policy priorities. Companies will have to consider tough tradeoffs, and some may even need to take proactive steps to forestall rating downgrades. The good news is that most utilities have some ability to influence that outcome because the demand for utility services is relatively stable, even in a pandemic.

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Regulatory Responses To COVID-19 Are Key To Utilities' Credit Prospects

May 20, 2020

Key Takeaways

- Many state and provincial governments in North America have instituted mandatory moratoriums on shutting off customers during the COVID-19 pandemic.
- Utilities may experience material hits to cash flow in coming quarters unless credit supportive measures are taken.
- Utilities will be tested to maintain liquidity and operating cash flow to support credit quality.
- Regulatory jurisdictions will be tested to find creative and supportive ways to bolster the credit quality of their utilities.
- Widening gaps in cost recovery could impact utilities.

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The COVID-19 pandemic has created an unprecedented level of uncertainty and regulatory action in North America. Throughout the United States and Canada, many state and provincial governments have instituted mandatory moratoriums on utilities shutting off customers, or they have worked together to institute voluntary moratoriums during the COVID-19 pandemic. These moratoriums, along with any lost revenues due to the economic impact of COVID-19 pandemic and the potential incurrence of higher operating expenses, may weaken financial measures of utilities. S&P Global Ratings has been monitoring these actions and their impact on credit quality of U.S. and Canadian regulated utilities.

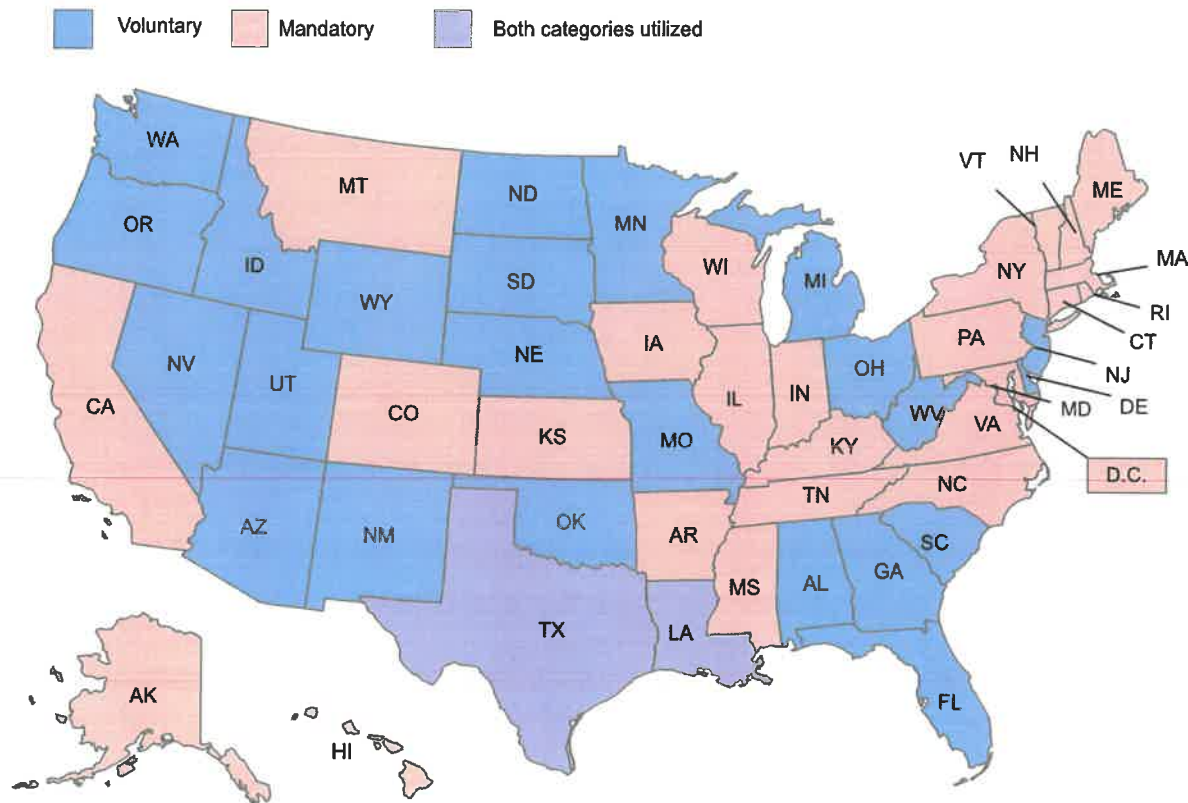
North American Moratoriums

The maps below indicate the states and provinces that have instituted mandatory and voluntary moratoriums. A few states have multiple regulators that utilize both voluntary and mandatory moratoriums.

Chart 1

Regulatory Responses To COVID-19 Are Key To Utilities' Credit Prospects

United States Jurisdiction Service Moratoriums Enacted
As of May 18, 2020



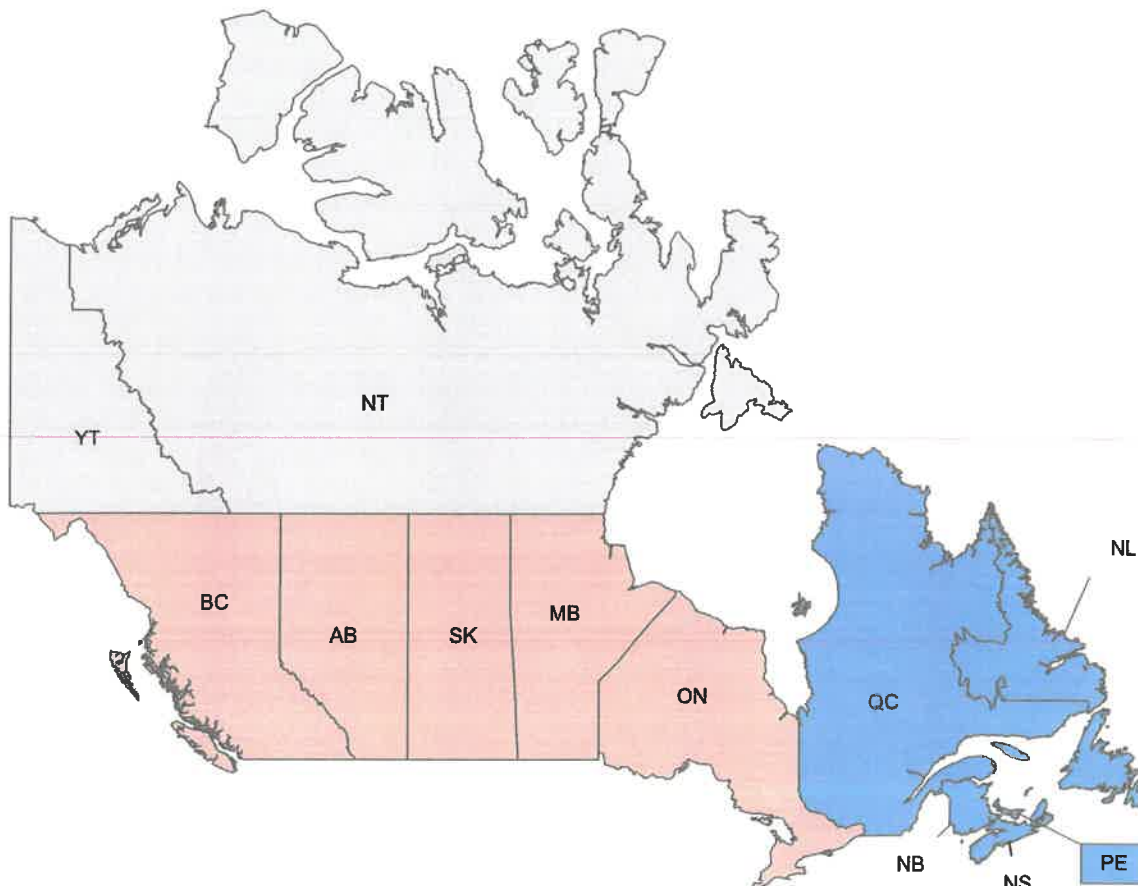
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Chart 2

Canadian Jurisdiction Service Moratoriums Enacted

As of May 18, 2020

 Voluntary  Mandatory



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Regulatory Responses & Credit Implications

While no jurisdiction's response is exactly the same, we have identified several broad categories of response. Jurisdictions and regulatory commissions have authorized utilities to:

- Defer costs for future recovery;
- Enter into payment arrangements with customers;
- Enter into bill mitigation measures, such as the acceleration of refunds for fuel costs; and
- Seek rate recovery through various mechanisms such as rate surcharges, future rate cases, or formula rate plans.

Deferrals

One of the main responses we've seen from commissions are the authorization of utilities to accrue COVID-19-related costs and defer them for future prudence reviews and rate recovery for both residential and nonresidential customers.

Residential

The Arkansas Public Service Commission authorized the utilities to establish regulatory assets to record costs resulting from the suspension of disconnections. In future proceedings, the commission will consider whether each utility's request for recovery of these regulatory assets is reasonable and necessary. We expect Entergy Corp. utility Entergy Arkansas LLC to file a formula rate plan in the summer of 2020, and that revenue changes and costs from COVID-19 should be captured in the new rates that take effect at the beginning of 2021.

On March 4, California Gov. Gavin Newsom declared a statewide emergency due to the COVID-19 outbreak. As a result, Edison International subsidiary Southern California Edison Co. (SCE) suspended all disconnections for nonpayment, waived late fees and deposits, and implemented flexible payment plans upon request for all residential and nonresidential customers. SCE is among the many investor-owned utilities that have suspended customer service disconnects for nonpayment during the pandemic. SCE's electric rate case request to institute interim rates this summer is being challenged by interveners with claims that the increase would be counterproductive amid the COVID-19 pandemic. Absent the interim rate increase, SCE indicated it will experience a "significant lag for cost recovery...expenses incurred to protect current customers."

In Mississippi, "The [Mississippi] Commission acknowledges that the protective measures for customers and utility employees could pose a financial strain on the utilities subject to its rate regulation and that such utilities should be provided regulatory certainty by authorizing the use of an accounting mechanism and a subsequent process through which they may seek future recovery of costs or expenses resulting from such measures, and hereby enters this order to mitigate the financial impacts of such actions." Entergy Corp. subsidiary Entergy Mississippi LLC has a pending formula rate plan that has a 2020 test period, resulting in timely rate recovery of costs when new rates take effect mid-year.

As mandated by the Alberta government in Canada, electricity providers (both competitive and regulated) are absorbing the costs for nonpaying customers for 90 days until June 18, 2020. The utility payment deferral program allows residential customers to defer electricity and natural gas bill payments regardless of the service provider.

Some jurisdictions in Canada have determined that residential and small business customers can stop paying for up to 90 days. On March 19, 2020, the Ontario government extended its winter ban on residential disconnections through July 31, 2020. The extension also applies to small businesses. Ontario local distribution utilities cannot disconnect these customers for nonpayment. Residential and small business customers on time-of-use pricing are paying 10.1 cents per kilowatt hour (kWh), the off-peak price, throughout the day and until June 1, 2020. The government indicated that order would be in place for 45 days. The Ontario province is paying generators for the loss of peak pricing. Paying for generation while not collecting from ratepayers could cause a cash flow squeeze--the local distribution companies (LDCs) continue to pay the Independent Electricity System Operator (IESO) for generation and transmission while customers may not be paying the monthly invoices. How LDCs account for losses in future rate recovery has

yet to be defined.

Nonresidential

Larger customers typically have energy charges based on consumption and demand charges that are paid even if consumption declines. Demand charges may reset more frequently; therefore, if consumption by a larger customer has dropped due to COVID-19 shutdowns, cash flow from the customer could be reduced as compared to previous periods. In North Carolina, an intervener requested that the North Carolina Utilities Commission (NCUC) suspend minimum demand charges for commercial and industrial customers during the COVID-19 crisis. The commission is reviewing the filing. If they were to accept it, utilities could lose operating cash flow until the pandemic has passed. Duke Energy Corp. subsidiary Duke Energy North Carolina, among other utilities, has petitioned the NCUC against deferring industrial demand charges. This move is indicative of the NCUC not just looking at the COVID-19 impact to residential customers but also actively considering the interests of companies in the industrial segment. That being said, a deferral of demand charges could cut down once-thought-to-be-fixed cash flows for utilities and potentially weaken their stand-alone cash flows.

Credit Implication of Cost Deferrals. Without an additional and explicit timeline of recovery, deferrals represent a less credit-supportive regulatory response, despite any good will created with customers or their jurisdictional authority. This is due to a combination of the immediate near-term impact and the prolonged uncertainty of future recovery. Once costs are deferred, utilities may face an immediate reduction to operating cash flow in the near term, which may bring them close to or below their outlook downgrade threshold. Compounded with the increased uncertainty of when the utility will recover any deferred costs, this method--without any explicit notion of when costs will be recovered from their jurisdictional authority--has the potential to increase the risk the utility takes on more than any other response.

Payment Arrangements

The next category of response we've identified is situated around payment arrangements that utilities created for their customers. These allow utilities to resolve payments proactively instead of deferring them for future recovery, as well as interact directly with customers through an agreed-upon payment schedule or payment assistance program.

An example of this response can be seen in North Carolina. On March 19, an order issued by the NCUC, with respect to the moratorium on service terminations during the COVID-19 state of emergency, states: "At the end of the State of Emergency, customers having arrearages accrued during the State of Emergency shall be provided the opportunity to make a reasonable payment arrangement over no less than a six month period and shall not be charged any late fees for late payment for arrearages accrued during the State of Emergency. No provision in this Order shall be construed as relieving a customer of their obligation to pay bills for receipt of any utility service covered by this Order." This order removes additional uncertainty in terms of recovery for utilities as it allows the applicable utilities to plan and coordinate with customers, contrasted with the need to go through additional NCUC proceedings (although they still may be necessary).

As opposed to direct agreements between utilities and their customers to address arrearages, some jurisdictions have leaned upon federally funded programs to stave off the effect of the COVID-19 outbreak on the customer bill. The Colorado governor's March 5, 2020, order placed a moratorium on service disconnections. The Colorado Public Utilities Commission was directed to

Regulatory Responses To COVID-19 Are Key To Utilities' Credit Prospects

work with all public utilities to develop and provide payment assistance programs to aid customers. Since the initial orders, utilities including Black Hills Corp. utility Black Hills Energy, Xcel Energy Inc.'s utility Public Service Co. of Colorado, and Atmos Energy Corp. have made efforts to set up payments for low-income customers during the state of emergency through the Colorado Low-income Energy Assistance Program (LEAP), a federally funded state-supervised, county-administered system. To the south, the Arizona Corporation Commission has urged utility customers to work with their utility providers, such as Pinnacle West Capital Corp. subsidiary Arizona Public Service Co., and take advantage of payment assistance programs like the Low-Income Home Energy Assistance Program (LIHEAP) as costs have not formally been deferred. While not isolated to just Colorado and Arizona, the response in these states is reflective of the heightened coordination of commissions and utilities with their customers through federal, state, and local programs to alleviate financial hardships and allow for the recovery energy costs.

Credit Implication of Payment Arrangements. As compared to deferrals without any cost recovery timing, payment arrangements provide greater certainty regarding the timing of cost recovery for utilities. Regardless of greater certainty, the utility may still face a reduced operating cash flow as these payment arrangements may not come into effect until after the COVID-19 state of emergencies. Therefore, the utility may still face the same short-term immediate impact deferrals.

Bill Mitigation

In many of the jurisdictions in which payment arrangements are utilized, the onus of a payment solution is placed on the consumer to contact their utilities and payment assistance programs to reduce their energy bills. Even if these payment arrangements are made, there is a degree of lag between when utilities will start receiving payment, causing a lapse in recovery. Other jurisdictions have chosen to take more proactive roles in reducing customer bills through bill mitigation actions during the COVID-19 outbreak. While there could still be a lag in payment, these actions make customer bills more affordable, which we believe increases the probability of the ultimate cost recovery through rates.

An example of this occurred in Washington. As part of an authorized electric rate increase of about \$29 million for utility Avista Corp., the Washington Utilities and Transportation Commission (WUTC) wanted to ease the financial impact on electric and gas customers during the COVID-19 pandemic, and fast-tracked customer rate refunds. The WUTC expects to mitigate the authorized rate increase and achieve a roughly net-zero impact on electric customers in the first year of the new rates. The refund largely consists of a rebate of energy costs through the company's energy recovery mechanism.

A similar approach was also taken in Florida, where the commission allows for the issuance of a bill credit for the state's four largest utilities. Approved by the Florida Public Service Commission in April, customers of Florida Power & Light Co., Duke Energy Florida LLC, and Gulf Power Co. will receive a one-time bill reduction in May to reflect over collection of fuel and capacity cost recovery factors. Tampa Electric Co.'s approved proposal will pass fuel-cost savings to customers from June through August, with smaller monthly savings through December. The credits reduce customer bills, which mitigates customers' financial hardships during the COVID-19 pandemic.

Credit Implication of Bill Mitigation Bill mitigation provides utilities the ability to collect payment in the near term and while retaining the ability to set up payment arrangements with customers to collect in the long term. While this response does not completely remove uncertainty around the collection of costs, it takes a meaningful step to mitigate risk for the utility while ensuring the

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customer is benefiting as well.

Table 1

North American Jurisdictional Responses

As of May 14, 2020

Collecting Costs / Deferral	Customer Payment Arrangements	Pending
Alaska	Alabama	Arizona
Alberta	Alberta	Delaware
Arkansas	Colorado	Idaho
British Columbia	Florida *	Illinois
California	Indiana	Kansas
Connecticut	Montana	Kentucky
District of Columbia	New Foundland & Labrador *	Louisiana
Georgia	New Hampshire	Maine
Hawaii	New Jersey	Massachusetts
Idaho	North Carolina	Michigan
Iowa	Ohio	Minnesota
Kansas	Prince Edward Island	Missouri
Maryland	Quebec	Nebraska
Michigan	Rhode Island	New Mexico
Minnesota	Saskatchewan *	Pennsylvania
Mississippi	South Carolina	Utah
Nebraska	South Dakota	Virginia
Nevada	Washington *	West Virginia
Oklahoma		Wisconsin
Ontario		
South Carolina		
Wyoming		

* States have a bill credit program in place that will ultimately reduce customer bill but payment arrangement will still have to be made with reduced bill.

Options Of Regulatory Recovery

Options of rate recovery for COVID-19 costs by utilities can include rate cases and various rate riders.

Rate Cases

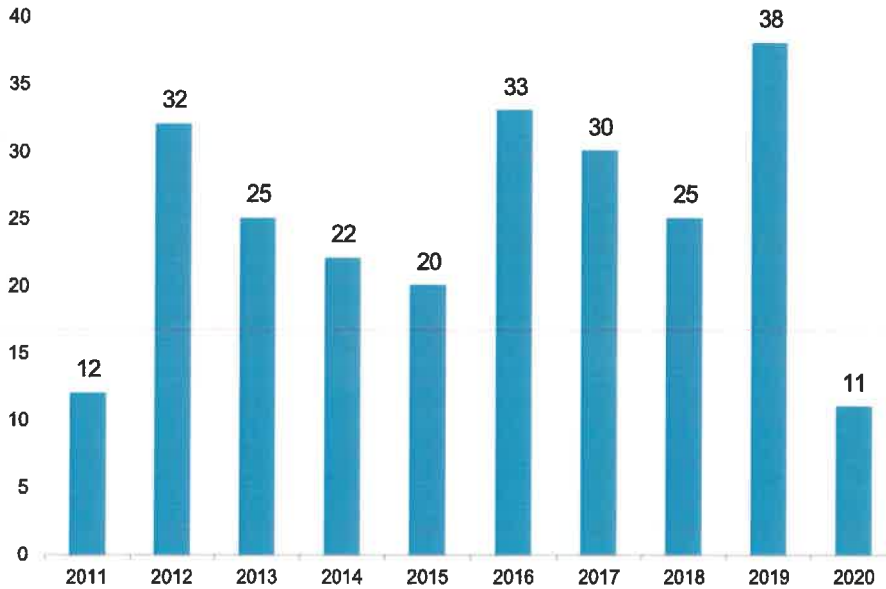
Recovery could be addressed through a rate case, although our data suggests that many utilities are reluctant to file new rate cases during this period of hardship for rate payers (see RRA chart below). Still, there are several rate cases underway. For example, Columbia Gas of Pennsylvania Inc., a subsidiary of NiSource Inc., filed for a rate increase that should capture the impact of

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COVID-19 when new rates go into effect later in 2020. Ameren Corp. subsidiary Ameren Illinois Co. recently filed a gas rate case in Illinois that will reflect a projected test period and will likely include the impact of COVID-19 on the utility's test period revenues.

Chart 3

2011-2020 Rate Case Filings
March 13-May 8



As of May 11, 2020. Source: Regulatory Research Associates, a group within S&P Global Market Intelligence.
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For electric, Ameren Illinois has a formula rate plan that is updated periodically. The utility has been submitting annual filings for its formula rate plan based on a test period composed of the previous calendar year. Therefore, in a 2021 filing, we would expect COVID-19-related costs to be incorporated within a test period of calendar 2020. Another recovery option could be through decoupling mechanisms whereby revenues are reset; this could capture the weaker cash flows from bad debt expense and reduced revenues from COVID-19 inactivity.

In addition to the requested rate increase, Columbia Gas of Pennsylvania wants to implement a revenue normalization adjustment, or RNA, that would allow the gas utility to adjust rates for changes in revenue for reasons such as customer participation in energy conservation programs and overall economic conditions. The company is also proposing to increase the fixed monthly customer charges for residential and small commercial customers to allow a greater proportion of fixed costs to be recovered through these fixed charges. Mechanisms such as these will further decouple the utility's revenue from weak economic activity and customer conservation.

To alleviate the impact of COVID-19 on ratepayers, utilities could seek to remain out of or delay rate case proceedings. For example, Wisconsin Power & Light Co. recently proposed not to submit its expected rate review that Wisconsin utilities typically file every two years with the state

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commission. Duke Energy Kentucky Inc. notified the Kentucky commission in March that the company was "keenly aware" of the "great strain upon government agencies at the federal, state, and local levels," and would therefore "avoid placing further burdens upon the commission, and to help customers who are affected by present circumstances, by delaying the potential effective date of new rates in the company's pending electric rate case" before the month of May. This allowed an additional month before new rate as the decision was expected April 2. Under these actions, rates would remain largely in line with current levels, mitigating utility costs to ratepayers during the pandemic. Utilities may seek such an approach if they can maintain financial measures while remaining out of rate cases for an extended period.

Credit Implications of Rate Cases. Rate cases may prove effective at recovering lost revenue or COVID-19 costs but are likely to take months or years to complete, thereby exposing the utilities to lag. We also note that very few utilities are filing rate cases in the current environment and opting to suspend and even forgo review this year.

Rider Recovery

Some jurisdictions have had debt expense riders, or something similar, that provide more timely cost recovery. In Illinois, gas distribution companies are authorized to recover uncollectible debt expense through a surcharge. Multiple gas utilities, including Ameren Illinois Co., Southern Co. subsidiary Northern Illinois Gas Co., and Exelon Corp. utility Commonwealth Edison Co. use rate riders to recover this cost. The rider provides for cost recovery or refund of uncollectible expense based on the difference between actual uncollectible write-offs and the amounts recovered in current base rates.

A recent Georgia commission rate case authorized Southern Co. subsidiary Georgia Power Co. to defer all lost revenue and increased costs associated with COVID-19. In contrast, gas utility Atlanta Gas Light Co. (AGL) and the Georgia commission staff have proposed a revenue true-up process within the Georgia Rate Adjustment Mechanism. The mechanism was initially approved in 2017. In addition, AGL uses a modified straight-fixed-variable rate design that enables the company to recover non-gas costs throughout the year, consistent with the incurrence of these costs, essentially eliminating the need for a revenue decoupling mechanism.

Texas regulators took a different approach for electric utilities within the Electric Reliability Council of Texas (ERCOT). For residential electricity customers that have retail choice of electricity providers and are in danger of disconnection, late fees will be suspended and deferred payment plans will be offered. A COVID-19 Electricity Relief Program has been established with \$15 million from ERCOT. This fund will reimburse retail electricity providers (REPs) for unpaid energy charges and transmission and distribution utilities (TDUs) for unpaid delivery charges of customers certified as experiencing COVID-19-related hardship and not disconnected. This would pertain to CenterPoint Energy Houston Electric LLC, Oncor Electric Delivery Co. LLC, and AEP Texas Inc. ERCOT and each TDU will enter into an interest-free loan associated with the COVID-19 Electricity Relief Program. TDUs will establish rate riders in which all customer classes will pay a 33 cent per megawatt hour charge to reimburse REPs for unpaid energy charges and TDUs for unpaid delivery charges, and to repay ERCOT's initial contribution. The riders will stay in effect until the TDUs have been reimbursed and ERCOT has been repaid.

Water utilities and vertically-integrated electric utilities outside ERCOT, such as Entergy Texas Inc., El Paso Electric Co., Southwestern Public Service Co., and Southwestern Electric Power Co., may not charge late fees or disconnect customers for nonpayment during the COVID-19 pandemic.

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Credit Implications of Rider Recovery. Regulatory responsiveness through rate riders may prove more effective at recovering lost revenue or COVID-19 costs as they may provide for stronger cash flow and reduced uncertainty around ultimate recovery, and may strengthen a utility's credit quality. Rate recovery through riders may efficiently adjust rates for the impact of COVID-19 on the company, bolstering revenues and cash flow to the benefit of creditors.

Impact To Credit Quality From COVID-19 On U.S. And Canadian Utilities

The effects on credit quality from the COVID-19 pandemic and regulatory responses have been occurring in real time across the industry. These effects include weakening of operating cash flow and capital structures, access to liquidity, and alterations in capital spending plans.

Weaker Operating Cash Flow

Utilities that had weaker financial measures, possibly close to the downgrade triggers in their rating outlook, could see financial measures further degrade due to COVID-19. Without improved operating cash flow or any strengthening of the balance sheet, we could revise the outlook or change the ratings. Rebalancing a capital structure could be challenging, particularly for those with weakened operating cash flow, because issuing equity in times of financial stress can be especially difficult.

Looking ahead, several companies have assumed equity issuance as part of their 2020 plans, given the industry's high capital spending that we estimate at about \$150 billion. While the capital markets remained mostly accessible to the industry during the first two months of 2020, we anticipate a significant decline in equity issuances over the remainder of 2020 given the level of uncertainty surrounding COVID-19. When combined with our expectation of reduced volumetric sales, increased bad debt expense, and delayed rate case filings, the industry could experience a weakening of credit measures. Given that many companies are already strategically operating with minimal financial cushion at current rating levels, weaker financial measures could lead to downgrades (See "COVID-19: While Most Of The U.S. Is Shut Down, Utilities Are Open For Business," May 4, 2020).

For the most strained issuers, or those that may not fare as well in front of regulators vis-à-vis COVID-19 costs, this is where the rubber will hit the road in terms of evaluating financial policy priorities. Companies will have to consider tough tradeoffs, and some may even need to take proactive steps to forestall downgrades (see "North American Regulated Utilities Face Tough Financial Policy Tradeoffs To Avoid Ratings Pressure Amid The COVID-19 Pandemic," May 11, 2020).

Liquidity

Operating cash flow will decline and operating income will be squeezed as revenues erode, while costs of goods sold and operating expenses continue to be incurred. This will make liquidity critical to cover expenses. Despite the challenges associated with the economic downturn, the utility industry has preserved its investment-grade profile and maintained adequate liquidity in part by securing multiyear revolving credit facilities that are sized to sufficiently cover cash needs over a 12-month period. Also, as commercial paper interest rates spike to levels last seen during the 2008 financial crisis, we saw many utilities enter into 364-day term loans to lock-in liquidity at reasonable rates. We view this as allowing the industry to circumvent the volatile commercial paper markets, strengthening the industry's near-term liquidity position.

Greater Uncertainty Could Drive Capital Expenditure Changes

The combination of weaker operating cash flow and uncertainty could result in lower capital spending and delays in projects spread out over a longer period. An example is CenterPoint Energy Inc., which, in response to a large distribution cut from its investment in a midstream energy company Enable Midstream Partners LP, lowered 2020 capital spending \$300 million. Enable Midstream cut its distributions after oil and gas prices dropped. In its first-quarter 2020 earnings call, American Electric Power Co. Inc. lowered 2020 capital spending by \$500 million following lower revenue due to warmer-than-normal weather. Less capital spending should free up cash to partly offset expected revenue loss. Although Unifil Corp. is continuing its capital spending program, it stated in its first-quarter 2020 earnings call that COVID-19 had the potential to cut revenues by about \$400,000 for every 1% drop in power usage in its operations. The company can offset these losses and increase cash if it can reduce capital spending.

Moreover, a major target of capital spending in the utility sector, clean and renewable energy projects (such as the offshore wind projects that Eversource Energy, Dominion Energy Inc., and AVANGRID Inc. are engaged in), could see forms of delay in construction and operation. AVANGRID recently stated on its 2020 first quarter earnings call that while its offshore wind project is slated to be operable on time, the company has experienced a number of force majeure events from suppliers due to COVID-19, a trend that may affect other offshore wind project providers. In order to maintain credit quality, utilities with similar projects may need to adjust capital investment to preserve assets while ensuring adequate liquidity.

That being said, despite the effect of the COVID-19 pandemic, several jurisdictions have pushed to ensure the trajectory of their clean energy goals. In April, the New York Public Service Commission authorized the New York State Energy Research and Development Authority to procure at least an additional 1,000 megawatts of offshore wind energy in 2020. In the same month, the Virginia legislature passed the Clean Energy Economy Act, mandating that by 2045 100% of the power supplied by any competitive retail electric provider, including Dominion Energy Inc. subsidiary Virginia Electric & Power Co., must be sourced from renewable and carbon-free resources. The aggressive standards for clean energy goals in these jurisdictions and others around the country may provide enough incentive for utilities to continue to advance such projects.

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U.S. And Canadian Utility Regulatory Updates And Insights: June 2020

June 8, 2020

Key Takeaways

- S&P Global Ratings periodically assesses each regulatory jurisdiction in the U.S. and Canada with a rated utility or where a rated entity operates.
- These assessments--with categories from "credit supportive" to "most credit supportive"--provide information for reference in determining the regulatory risk of a regulated utility or holding company with more than one utility. We made no changes since our last report, but examine developments in several jurisdictions.
- We base our analysis on quantitative and qualitative factors, focusing on regulatory stability, tariff-setting procedures and design, financial stability, and regulatory independence and insulation.
- The presence of utility regulation, no matter where in the spectrum of our assessments, strengthens the business risk profile and generally supports utility ratings.

S&P Global Ratings conducts periodic assessments of each regulatory jurisdiction in the U.S. and Canada where a rated utility operates as a reference when determining a utility's regulatory advantage or regulatory risk. Regulatory advantage is a heavily weighted factor in our analysis of a regulated utility's business risk profile.

Our analysis covers quantitative and qualitative factors, focusing on regulatory stability, tariff-setting procedures and design, financial stability, and regulatory independence and insulation. (See "Key Credit Factors For The Regulated Utilities Industry," published Nov. 19, 2013, for more details on each category.)

Sorting Through Regulatory Jurisdictions In The U.S. And Canada

We updated our assessments of regulatory jurisdictions since our commentary "U.S. And Canadian Regulatory Jurisdiction Updates And Insights: November 2019," published Nov. 4, 2019. Our assessments of U.S. jurisdictions' and Canadian provinces' approaches to regulation over the past several months are unchanged. Here, we provide our current snapshot of each regulatory jurisdiction (Table 1, Charts 1 and 2). We group the jurisdictions by the quantitative and qualitative

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factors and collective opinions expressed in the regulatory advantage determinations made in rating committees for the approximately 225 U.S. and 30 Canadian utilities we rate.

The categories indicate an important point regarding utility regulation and its effect on ratings: They are denoted credit supportive to one degree or another, as all utility regulation sustains credit quality when compared with corporate and infrastructure ratings. The presence of regulators, no matter where in the spectrum of our assessments, reduces business risk and generally supports utility ratings. We describe all these jurisdictions in a range from credit supportive to most credit supportive, and these vary only in degree rather than in kind.

Assessing U.S. And Canadian Regulatory Jurisdictions

Table 1

Regulatory Jurisdictions For Utilities Among U.S. States And Canadian Provinces

Credit supportive	More credit supportive	Very credit supportive	Highly credit supportive	Most credit supportive
Hawaii	Alaska	Connecticut	Arkansas	Alabama
Mississippi	Arizona	Delaware	Georgia	Alberta
New Mexico	California	Idaho	Indiana	British Columbia
Prince Edward Island	District of Columbia	Illinois	Kansas	Colorado
	Maryland	Missouri	Louisiana	FERC (electric)
	Montana	Nebraska	Maine	Florida
	New Jersey	Nevada	Massachusetts	Iowa
	Oklahoma	New Orleans	Minnesota	Kentucky
	South Carolina	New York	New Hampshire	Michigan
	Washington	Ohio	Newfoundland & Labrador	North Carolina
		Rhode Island	North Dakota	Nova Scotia
		South Dakota	Oregon	Ontario
		Texas	Pennsylvania	Quebec
		Vermont	Tennessee	Wisconsin
		West Virginia	Texas RRC	
		Wyoming	Utah	
			Virginia	

FERC--U.S. Federal Energy Regulatory Commission. RRC--Railroad Commission of Texas.

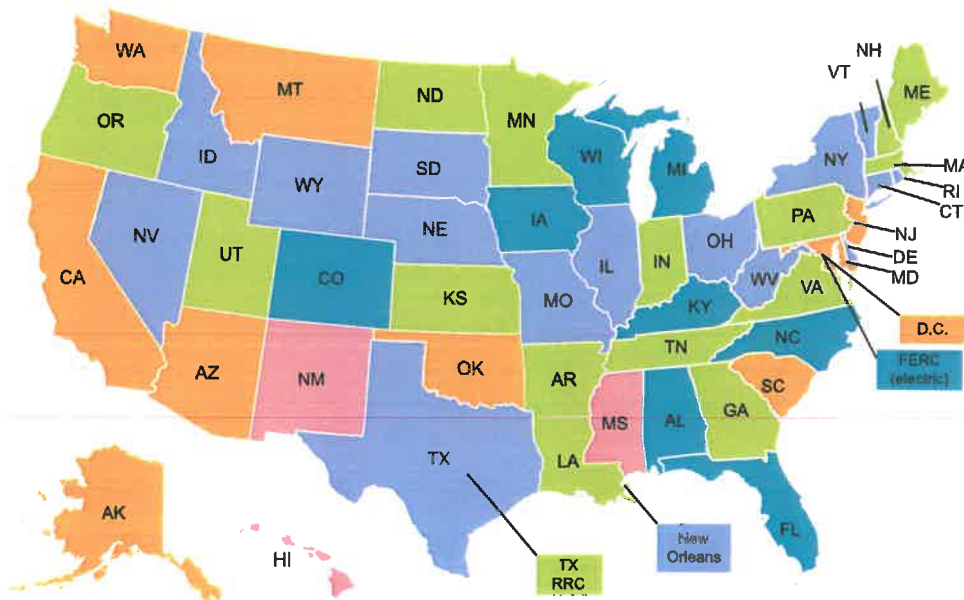
Mapping Regulatory Jurisdictions

For jurisdictions assessed in these maps (Charts 1 and 2), colors delineate our assessments of credit supportiveness. (We do not have assessments on some Canadian provinces where we don't rate any utilities.) The assessments offer some scale and detail in our thinking regarding the rules and implementation of regulation. Often they simply designate a stable jurisdiction slightly better or worse than its closest peers in credit quality.

Chart 1

Regulatory Assessment By State

■ Credit supportive
 ■ More credit supportive
 ■ Very credit supportive
 ■ Highly credit supportive
 ■ Most credit supportive

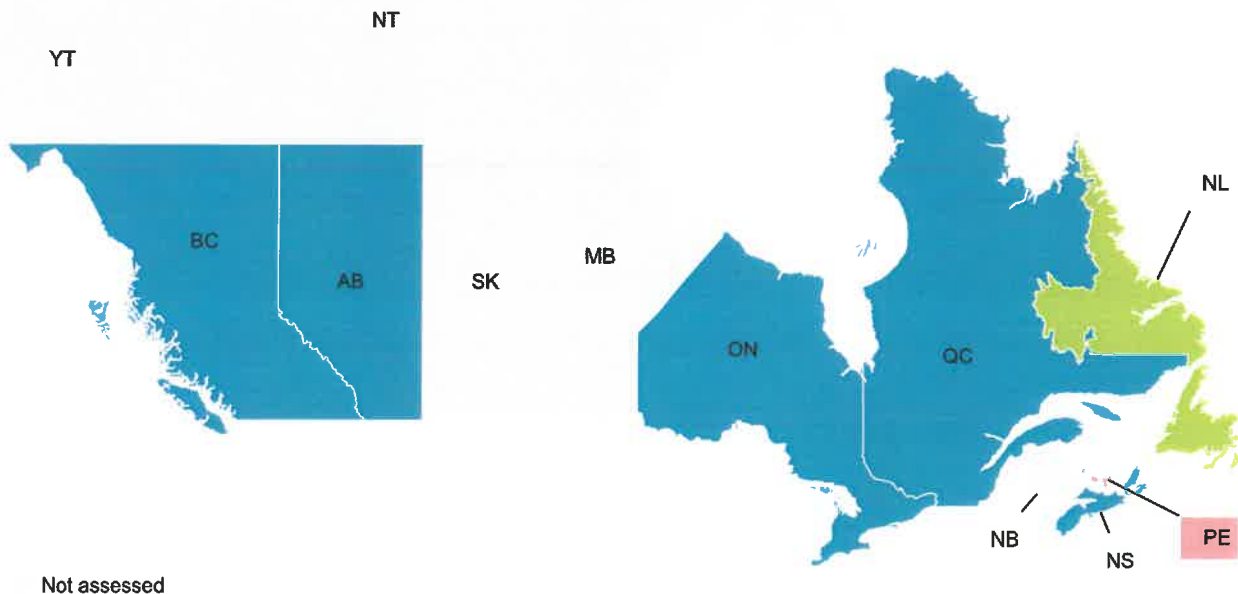


FERC—Federal Energy Regulatory Commission. RRC—Railroad Commission of Texas. Data as of June 2020. Copyright © 2020 by Standard & Poor's Financial Services LLC. All rights reserved.

Chart 2

Regulatory Assessment By Canadian Province/Territory

■ Credit supportive
 ■ More credit supportive
 ■ Very credit supportive
 ■ Highly credit supportive
 ■ Most credit supportive



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Notable Topics Throughout North America

Although our biannual review found no material events that would change a jurisdictional assessment amid the COVID-19 pandemic, there have been an unprecedented number of regulatory actions with respect to cost recovery and bad debt collection moratoriums ("Regulatory Responses To COVID-19 Are Key To Utilities' Credit Prospects", published May 20, 2020). In

addition, other notable developments have occurred in several jurisdictions.

Alberta

Compared to our assessment in November, the Alberta regulatory construct is weakening as regulatory lag has not improved. In addition, utilities are continually exposed to the risk of absorbing the undepreciated capital cost of stranded assets due to extraordinary retirement. Furthermore, the recent regulatory decision by the Alberta Utilities Commission regarding the Alberta Electric System Operator's customer contribution policy, under which requiring distribution operators to transfer transmission related investments to transmission operators at net book value, somewhat calls into question the regulatory framework's consistency.

FERC Electric

Recent U.S. Federal Energy Regulatory Commission (FERC) rulings on Midcontinent Independent System Operator (MISO) transmission owners' authorized return on equity (ROE) indicate inconsistency in how ROE decisions could be applied toward New England transmission owners' ROEs. Specifically, in late 2018, FERC proposed using a new ROE calculation method that focused on four factors. However, in late 2019, FERC did not use that methodology to establish the new ROE for MISO transmission owners, instead using a method that relied on two factors. Furthermore, FERC further revised the methodology in May 2020 by adding a third approach to calculate transmission owner ROEs. It was marginally favorable for MISO transmission owners compared to the two-factor approach, but resulted in a slight base ROE reduction.

Although there are inconsistencies regarding ROEs for electric transmission owners, we continue to consider FERC regulation toward electric transmission as one of the most credit supportive.

Hawaii

The state is undergoing regulatory reform, and the Hawaii Public Utilities Commission (HPUC) is proceeding with a performance-based regulation (PBR) framework. HPUC plans to finalize the implementation details by the end of 2020. The proposal includes a five-year rate plan with an indexed annual revenue adjustment mechanism, coupled with existing capital recovery mechanisms in between rate cases. We expect this will improve the timeliness of both capital and operating cost recovery for utilities that could lead to improved profitability.

In addition, an earnings-sharing mechanism (ESM) and various performance incentive mechanisms (PIMs) are included. The proposed ESM shares excess earnings with customers and protects the utilities from extreme financial shortfalls. PIMs may provide potential earnings to a utility should it meet certain performance targets. Overall, we expect the new PBR framework will lead to more regulatory predictability and cash flow stability for utilities in Hawaii, including Hawaiian Electric Industries Inc.

Massachusetts

Due to the state regulatory commission's recent rate decision for utility Massachusetts Electric Co. in late 2019, we believe the regulatory environment is gradually improving. The Mass Electric rate case decision was the second major case that included a PBR mechanism, the first being NSTAR Electric Co. Such mechanisms provide for a more predictable formulaic rate setting construct that accounts for utilities' capital and operational spending, inflation over a five-year

period, and a decoupling mechanism that provides downside protection irrespective of sales volume declines.

NSTAR Gas Co. recently filed for a similar PBR mechanism in their gas distribution rate case, and we are monitoring this development. Overall, even with our view of gradual improvement, we believe there could be regulatory lag since the state uses historical test years when setting rates.

Mississippi

We continue to monitor the pending regulatory commission decision on Mississippi Power Co.'s (MPC) reserve margin plan (RMP), a request by the regulator to develop alternatives to lower its reserve margin. This plan could accelerate retirements for some of MPC's coal-fired power plants by 2022. We continue to monitor this proceeding to determine how the rate recovery of remaining book value of retired assets will be addressed.

Nevada

Following a legislative initiative in 2019, the Public Utilities Commission of Nevada (PUCN) initiated a proceeding and has conducted workshops regarding the options around alternative ratemaking plans that could include formula rates, decoupling, earnings sharing, and multiyear rate plans. In April 2020, PUCN released the first report that outlines efforts regarding potential alternative ratemaking mechanisms for Nevada's electric utilities. Ultimately a draft proposal may be issued in 2021 with regulations adopted after reviewing feedback from workshop participants. PUCN is evaluating whether alternative ratemaking would provide better incentives than traditional cost-of-service ratemaking for NV Energy Inc.'s regulated utilities, Nevada Power Co. and Sierra Pacific Power Co. This is to achieve state policy goals for lower carbon emissions, renewable energy, energy efficiency, and electric vehicle adoption while keeping costs down.

Also, the commission is examining whether alternative rates such as flexible pricing options for customer classes will capture utilities' cost of doing business and support financial stability while assuring the delivery of safe and reliable electricity at a reasonable cost. The final determination is expected in 2021, and we will continue to monitor developments.

New York

Political attention toward utilities in the state was somewhat heightened during the past year following a blackout in summer 2019 in Consolidated Edison Inc.'s (Con Ed) service territory. In addition, Con Ed's and National Grid North America's (NGNA) implementation of gas distribution moratoriums to manage gas supply issues in the region added to the regulatory uncertainty. The moratoriums led to a letter in late 2019 from Gov. Andrew Cuomo indicating the state would move to revoke NGNA's certificate to operate its downstate gas franchise in response to NGNA's management of the gas supply issues in its service territory.

NGNA subsequently agreed to pay \$36 million to compensate customers affected by its moratorium and support other energy conservation measures and projects, all of which reduced regulatory uncertainty. However, regulatory risk is still likely to persist because gas supply constraints remain a key issue for gas utilities in the state.

Con Ed has faced political pushback for some of its actions, including on the gas supply moratorium and summer 2019 blackout, but has avoided formal reprimands. This somewhat limits its regulatory and political risks. Despite the negative political attention, Con Ed achieved a

somewhat constructive rate case decision from the New York State Public Service Commission (NYSPSC), including on a multiyear rate plan for its electric and gas operations at Consolidated Edison Co. of New York Inc. for rate increases totaling nearly \$1.2 billion over three years beginning in 2020. While the multiyear rate plan provides some cash flow predictability, under this plan the authorized return on equity is 8.8%, lower than what is typical for peers.

New Mexico

In 2019, the state passed the Energy Transition Act (ETA) to eliminate carbon emissions by 2045 from electric utilities with interim targets. We believe this provides credit support to the retirement of fossil-fuel generation in the state. PNM Resources Inc. subsequently sought approval to close units at the San Juan coal-fired plant and securitize the plant abandonment costs. In early 2020, a New Mexico Supreme Court ruling confirmed the applicability of the ETA to PNM's plan and replacement power project. The commission is reviewing different options of the proposed replacement project.

An initiative is expected to be included on the state's 2020 general election ballot that, if approved, would require Public Regulation Commission members to be appointed. The constitutional amendment would change the PRC from a five-person elected body to a three-person agency, with members chosen by the governor from a list of candidates compiled by a nominating committee, beginning in 2023.

North Carolina

While some developments suggest possible improvement to regulatory risks, other issues remain unresolved. Specifically, passage of Senate Bill 559, a storm securitization measure, permits recovery for certain storm recovery costs. Duke Energy Corp. utilities Duke Energy Carolinas LLC and Duke Energy Progress LLC can use a new financing measure to recover restoration costs incurred after several storms and hurricanes in 2018. We consider this favorable for credit quality. Separately, in 2019, Duke Energy settled with the North Carolina Department of Environmental Quality and certain community groups to excavate seven of the nine remaining coal ash basins in North Carolina and partly excavate the other two. Although this reduces legal uncertainty associated with the company's ash pond closure strategy, cost recovery for coal ash costs is still pending, which indicates some regulatory uncertainty.

Texas

We have not revised our regulatory jurisdiction assessment on the Public Utilities Commission of Texas (PUCT), which we consider to be very credit supportive. But we believe recent orders related to COVID-19 in addition to noteworthy trends stemming from recent rate proceedings require a comment.

In March 2020, PUCT issued orders related to COVID-19, suspending utility service disconnections for nonpayment and creating the COVID-19 Electricity Relief Program. We find this program to be constructive from a credit standpoint, specifically as it relates to the recoverability of unexpected costs arising from customer nonpayment due to the pandemic. We believe PUCT's action to be more proactive and demonstrates a commitment to credit quality compared to responses from other jurisdictions that relied only on deferrals of these costs as regulatory assets.

In multiple recent rate case decisions, PUCT approved more-leveraged hypothetical capital structures that reflect an equity ratio of 42.5%. This differs from previous trends when PUCT

approved equity ratios of 45%. We believe these actions could weaken credit quality as utilities manage equity ratios down to this lower level, possibly weakening financial measures without offsetting adjustments.

Virginia

The Virginia Clean Economy Act passed in March 2020, which requires electric utilities to supply 100% of electricity from renewable sources by 2050. Intermediate targets are also set for utilities, including Virginia Electric & Power Co. and Appalachian Power Co., that require 30% of power to be supplied from renewables by 2030 and to close all carbon-emitting power plants by 2045 and 2050, respectively. The Grid Transformation and Security Act passed in 2018 allows utilities to rate-base large renewable projects. However, certain key risks remain, including concerns on the leveled cost of energy provided by new offshore wind projects, even though lawmakers have been historically supportive to the utilities' effort to expand wind capacity. The Clean Economy Act also grants the Virginia State Corporation Commission more oversight over major projects, including the 2.6-gigawatt offshore wind project with construction slated to start in 2024. Some risks may arise due to potential cost overruns or project delays, which could create pressure on the timely cost recovery and ratepayer affordability. We are closely monitoring the 12-megawatt pilot project, which may complete construction this summer.

Renewable Portfolio Standard And Clean Energy Standards

State-level clean and renewable energy standards greatly influence the overall strategic direction and growth investments of North American regulated utilities. Regulatory support through timely cost recovery helps support credit quality and facilitate the energy transition. A number of states are passing or proposing legislation that would require utilities to further scale back carbon emissions from power plants and utilize a greater percentage of renewable energy generation. Today, 31 states have a mandatory renewable portfolio standard (RPS), and seven have a voluntary renewable energy standard target.

The most recent state to adopt a mandatory RPS target is Virginia, which as of 2020 requires investor-owned utilities to achieve 100% renewable generation by either 2045 or 2050, depending on the entity, and a certain amount from solar and wind sources. Other states are revising their targets or passing additional legislation. Washington passed a bill to achieve net-zero carbon emissions by 2050. Maine requires state greenhouse gas emissions to be below 1990 levels by at least 45% by 2030 and at least 80% by 2050. Iowa, New Mexico, and Maryland have either passed or proposed legislation that would curb emissions and require more clean energy sources.

We will continue to monitor these developments for any impact.

Related Research

- Regulatory Responses To COVID-19 Are Key To Utilities' Credit Prospects, May 20, 2020
- U.S. And Canadian Regulatory Jurisdiction Updates And Insights: November 2019, Nov. 4, 2019
- Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013

This report does not constitute a rating action.

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Industry Top Trends Update

Regulated Utilities

Credit quality is on a downward trajectory

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What's changed post-COVID?

Weaker financial measures. We expect the industry's funds from operations to debt will weaken by about 100 basis points in 2020 from COVID-related lower commercial and industrial load, higher bad debt expense, lack of consistent access to the equity markets, delayed rate case filings, and underfunded pensions.

Minimal financial cushion. Credit quality was already weak heading into 2020, with about 25% of the industry's outlooks on negative. This reflected tax reform, record capital spending, and the increasing number of utilities that are strategically managing their credit measures closer to the downgrade threshold.

The industry remains investment-grade. For the year to date, there have been seven downgrades and only one upgrade, which is a departure from prior years when upgrades consistently outpaced downgrades. However, we expect only a modest weakening to the industry's overall credit quality.

What is the likely path to recovery?

Regulatory deferral mechanisms. Utilities are either volunteering or have been mandated not to shut off service for nonpaying customers, and many regulators are approving the deferral of COVID-related costs for future recovery.

Operating and maintenance costs. Permanent cost reductions are being realized through the increasing use of technology and a shrinking real-estate footprint.

Capital spending and dividend levers. The industry consistently operates with annual capital spending of about \$150 billion and dividends of about \$35 billion. Under financial stress, a utility could pull either of these levers to temporarily restore its credit measures.

What are the key risks around the baseline?

Wildfires. The early Western U.S. 2020 wildfires and the below-average 2020 rainfall in California could potentially signal a longer wildfire season, which, in our view, could increase the possibility of a catastrophic wildfire. COVID presents additional risks because it could challenge emergency response time.

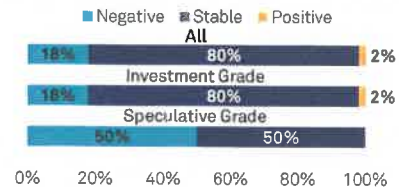
Environmental risks. The cancelation of the Atlantic Coast Pipeline is the latest demonstration that customers want carbon-free energy. High carbon-emitting utilities may need to accelerate the transformation of their generation fleet.

Safe operations. Utilities that cause gas explosions, electrical blackouts, wildfires, water contamination, service interruptions, or have high greenhouse gas emissions are facing increasing political and regulatory scrutiny.

Latest Related Research

- North American Regulated Utilities Face Tough Financial Policy Tradeoffs To Avoid Ratings Pressure Amid The COVID-19 Pandemic, May 11, 2020
- COVID-19: While Most Of The U.S. Is Shut Down, Utilities Are Open For Business, May 4, 2020
- An Old Age Problem? While North American Regulated Utilities' Credit Measures Could Dip On Pension Underfunding, Cost Recovery Ability Supports Credit Quality, April 20, 2020
- COVID-19: The Outlook For North American Regulated Utilities Turns Negative, April 2, 2020

Outlook Distribution



Ratings Statistics (YTD)

	IG	SG	All
Ratings	280	4	284
Downgrades	7	0	7
Upgrades	1	0	1

Ratings data as of end-June, 2020

COVID-19 Heat Map

Utilities	
COVID-19, Recession, and O&G Impact	Low
Potential Negative Long-Term Industry Disruption	--

2020 Estimates v. 2019		
Revenue Decline	EBITDA Decline	Incremental Borrowings
5% to 10%	0% to 10%	<5%

2021 Estimates v. 2019	
Revenue Decline ≥2019	EBITDA Decline ≥2019

U.S. Regulated Utilities' Credit Metrics Could Strengthen Under Proposed Biden Tax Plan

October 29, 2020

Key Takeaways

- The espoused tax plan of U.S. Democratic presidential candidate Joe Biden would likely improve the U.S. regulated utility industry's financial measures if implemented.
- The key element of the tax plan that could potentially benefit the utility industry over our outlook period (over the next two years) is the proposal to increase the corporate tax rate to 28% from 21%.
- While details of Biden's tax plan are currently limited, we expect that under the promoted proposals the utility industry's funds from operations (FFO) to debt would improve by about 100 basis points.
- Because the Biden tax plan would likely result in higher customer bills, reception by utility regulators is a key risk that utilities must effectively manage.

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Though most U.S. corporations financially benefited from the Tax Cuts and Jobs Act of 2017 (TCJA), which enhanced cash flow by lowering the corporate tax rate to 21% from 35%, many U.S. regulated utilities saw their credit measures weaken. This is because utilities fully recover their income tax expense from customers, and the reduced tax rate led to a decline in FFO. A further reduction in the industry's FFO reflected increased cash taxes paid, as utilities lost the ability to accelerate the deductibility of capital expenditures beyond typical modified accelerated cost recovery system (MACRS) depreciation. Collectively, these changes to the tax code weakened the utility industry's FFO to debt by about 200 basis points (bps).

Table 1

The Influence Of TCJA Provisions On U.S. Regulated Utilities And Holding Companies

Tax provision	Benefit or burden	Effect
Lower corporate tax rate	Burden	For utilities, revenue requirement was reduced. The benefit of a lower rate was passed onto ratepayers. Holding companies then lost the cash flow from differences between the statutory rate and their effective rate.
Loss of accelerated deductibility of capital expenditures	Burden	Utilities lost the opportunity to gain cash flow from tax-based stimulus. The effect on holding companies depended on their mix of utility and nonutility operations.

U.S. Regulated Utilities' Credit Metrics Could Strengthen Under Proposed Biden Tax Plan

Table 1

The Influence Of TCJA Provisions On U.S. Regulated Utilities And Holding Companies (cont.)

Tax provision	Benefit or burden	Effect
No Alternative Minimum Tax (AMT)	Benefit	Utilities and holding companies didn't have to use their net operating loss carryforwards or tax credits to offset an AMT.

Source: S&P Global Ratings.

U.S. Democratic presidential candidate Joe Biden has proposed to roll back some of the provisions of the TCJA and highlighted the extension of renewable energy tax credits as a key agenda item. Based on what we know so far, the main proposals under the Biden tax plan most applicable for regulated utilities would include:

- An increase in the statutory corporate tax rate to 28% from 21%;
- A 15% minimum tax on book income of companies reporting net income greater than \$100 million; and
- Possible extensions of renewable energy tax credits, particularly for solar investments.

Table 2

Impact Of Key Biden Corporate Tax Proposals On Regulated Utilities And Holding Companies

Tax proposal	Benefit or burden	Effect
Increased corporate tax rate	Benefit	Revenue requirements could be increased and utilities will gain cash flow, lowering the difference between the statutory and effective tax rate.
Reinstatement of AMT	Burden	Companies' minimum taxes would be increased, which could lead to a reduction in NOL and tax credit carryforwards.
Extension of Renewable Energy Tax Credits	Benefit	Utilities could benefit from the opportunity to gain cash flow from tax-based stimulus.

NOL--Net operating loss. Source: S&P Global Ratings.

How Increased Tax Rates Will Affect Utilities

Overall, we view the tax policy proposals outlined under Biden's tax plan as potentially beneficial for the utility industry's credit metrics, depending on the tax position of each company. Of the proposals, the flow through of the increased tax rate to customers could be the most significant change for utilities because it could materially increase FFO. Because of the higher tax rate, we expect cash taxes paid by regulated utilities to also increase; however, we expect utilities will offset this by using various tax credits and NOLs. For the utility industry, we expect FFO to debt to increase by about 100 basis points.

U.S. Regulated Utilities' Credit Metrics Could Strengthen Under Proposed Biden Tax Plan

Table 3

Estimated Financial Impact For Utilities Of An Increase In The Corporate Tax Rate

S&P Global Ratings-adjusted metric	Net impact For credit metrics
EBITDA and FFO	Positive
Cash taxes	Negative
Post-retirement benefit obligations*	Positive
Asset retirement obligations*	Positive

*We are holding all other factors for post-retirement benefits obligations (PRBOs) and asset retirement obligations (AROs) constant. S&P Global Ratings tax-adjusts PRBOs and AROs when adding them to its adjusted debt figures, so an increase in the effective tax rate would lower these adjustments holding other factors, such as anticipated investment returns on plan assets, constant. Source: S&P Global Ratings.

Tax Credits And The AMT

The Biden proposal seeks to reinstate the corporate AMT at a rate of 15% of book income for companies with net income greater than \$100 million, which could increase the taxable income for many utilities. However, we believe the full effects of such a proposal are difficult to fully determine. Many utilities have significant net operating loss and tax credit carryforward positions, and heavy investments in renewable energy capital projects that are eligible for production and investment tax credits. We expect that many utilities will continue to benefit from these tax deductions/credits, keeping them in tax-advantaged positions over our ratings outlook period even if the AMT is reinstated to 15%.

Table 4

Select Companies' Alternative Minimum Tax Based On Year-End 2019

	FY 2019 earnings before tax (A)	Net income FY 2019	Current federal taxes FY 2019 (B)	Taxes at 15% of earnings before tax FY 2019 (C) = A x 15%	Estimated AMT payable (D) = C - B	Estimated deferred tax assets related to federal tax credits and NOL carryforwards FY 2019	Estimated net AMT payable after tax credit and NOL carryforwards
MIL. \$							
Duke Energy Corp.	4,097	3,748	(299)	615	914	3,622	0
Southern Co.	6,527	4,739	156	979	823	1,751	0
Exelon Corp.	3,802	2,936	85	570	485	891	0
Dominion Energy Inc.	1,727	1,358	32	259	227	1,374	0
American Electric Power Co. Inc.	1,907	1,921	(7)	286	293	247	46
Sempra Energy	2,313	2,197	0	347	347	1,787	0
PPL Corp.	2,155	1,746	(10)	323	333	707	0
Consolidated Edison Inc.	1,736	1,343	0	260	260	904	0
FirstEnergy Corp.	1,117	912	(16)	168	184	450	0

U.S. Regulated Utilities' Credit Metrics Could Strengthen Under Proposed Biden Tax Plan

Table 4

Select Companies' Alternative Minimum Tax Based On Year-End 2019 (cont.)

	FY 2019 earnings before tax (A)	Net income FY 2019 (B)	Current federal taxes FY 2019 (B)	Taxes at 15% of earnings before tax FY 2019 (C) = A x 15%	Estimated AMT payable (D) = C - B	Estimated deferred tax assets related to federal tax credits and NOL carryforwards FY 2019	Estimated net AMT payable after tax credit and NOL carryforwards
Xcel Energy Inc.	1,500	1,372	(16)	225	241	639	0
DTE Energy Co.	1,324	1,169	(184)	199	383	1,437	0
Eversource Energy	1,190	909	57	179	122	4	117
Evergy Inc.	783	670	(40)	117	157	549	0
Ameren Corp.	1,016	828	(4)	152	156	25	131
American Water Works Co. Inc.	833	621	0	125	125	141	0
NiSource Inc.	507	383	0	76	76	659	0
Alliant Energy Corp.	626	557	(7)	94	100	416	0

To determine taxes at 15% of earnings at FY 2019 we multiply FY 2019 earnings before tax by 15%. To determine AMT payable we subtract current federal taxes FY 2019 from taxes at 15% of earnings before taxes FY 2019. NOL--Net operating loss. Source: S&P Global Ratings.

It All Hinges On Utilities' Management of Regulatory Risk

We expect that an increase to the U.S. corporate tax rate will likely result in a higher customer bill. This could complicate regulators' decisions, potentially affecting a utility's longer-term ability to effectively manage regulatory risk. Should the Biden tax plan be implemented, utilities would have to work effectively with their regulators to avoid overburdening the customer bill. This is especially true in the current economic environment that has been so constrained by COVID-19.

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Updates And Insights On Regulatory Jurisdictions Shaping Policies For North American Utilities--November 2020

November 9, 2020

Key Takeaways

- S&P Global Ratings periodically assesses each regulatory jurisdiction in the U.S. and Canada with a rated utility or where a rated entity operates.
- These assessments--with categories from "credit supportive" to "most credit supportive"--provide information for reference in determining the regulatory risk of a regulated utility or holding company with more than one utility. Since our last report, we have changed two jurisdictions and have examined developments in numerous jurisdictions.
- We base our analysis on quantitative and qualitative factors, focusing on regulatory stability, tariff-setting procedures and design, financial stability, and regulatory independence and insulation.
- The presence of utility regulation, no matter where in the continuum of our assessments, strengthens the business risk profile and generally supports utility ratings.

S&P Global Ratings conducts periodic assessments of each regulatory jurisdiction in the U.S. and Canada where a rated utility operates. This information provides a reference when determining a utility's regulatory advantage or regulatory risk. Regulatory advantage is a heavily weighted factor in our analysis of a regulated utility's business risk profile.

Our analysis covers quantitative and qualitative factors, focusing on regulatory stability, tariff-setting procedures and design, financial stability, and regulatory independence and insulation. (See "Key Credit Factors For The Regulated Utilities Industry," published Nov. 19, 2013, for more details on each category.)

Sorting Through Regulatory Jurisdictions In The U.S. And Canada

We updated our assessments of regulatory jurisdictions since our commentary "U.S. And Canadian Utility Regulatory Updates And Insights: June 2020," published June 8, 2020. Below, we

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Updates And Insights On Regulatory Jurisdictions Shaping Policies For North American Utilities--November 2020

provide our current snapshot of each regulatory jurisdiction. We group the jurisdictions by the quantitative and qualitative factors and collective opinions expressed in the regulatory advantage determinations made in rating committees for the approximately 225 U.S. and 30 Canadian utilities we rate.

The categories indicate an important starting point regarding utility regulation and its effect on ratings: they are credit supportive to one degree or another, as all utility regulation sustains credit quality when compared with other corporate and infrastructure ratings. The presence of regulators, no matter where in the spectrum of our assessments, reduces business risk and generally supports utility ratings. We therefore designate all of these jurisdictions in a range from credit supportive to most credit supportive, and these vary only in degree rather than in kind.

Assessing U.S. And Canadian Regulatory Jurisdictions

Regulatory Jurisdictions For Utilities Among U.S. States & Canadian Provinces

Credit supportive (Adequate)	More credit supportive (Strong/Adequate)	Very credit supportive (Strong/Adequate)	Highly credit supportive (Strong/Adequate)	Most credit supportive (Strong)
Hawaii	Alaska	Connecticut	Alberta†	Alabama
New Mexico	Arizona	Delaware	Arkansas	British Columbia
Prince Edward Island	California	Idaho	Georgia	Colorado
	District of Columbia	Illinois	Indiana	FERC (Electric)
	Maryland	Missouri	Kansas	Florida
	Mississippi*	Nebraska	Louisiana	Iowa
	Montana	Nevada	Maine	Kentucky
	New Jersey	New Orleans	Massachusetts	Michigan
	Oklahoma	New York	Minnesota	North Carolina
	South Carolina	Ohio	New Hampshire	Nova Scotia
	Washington	Rhode Island	Newfoundland & Labrador	Ontario
		South Dakota	North Dakota	Quebec
		Texas	Oregon	Wisconsin
		Vermont	Pennsylvania	
		West Virginia	Tennessee	
		Wyoming	Texas RRC	
			Utah	
			Virginia	

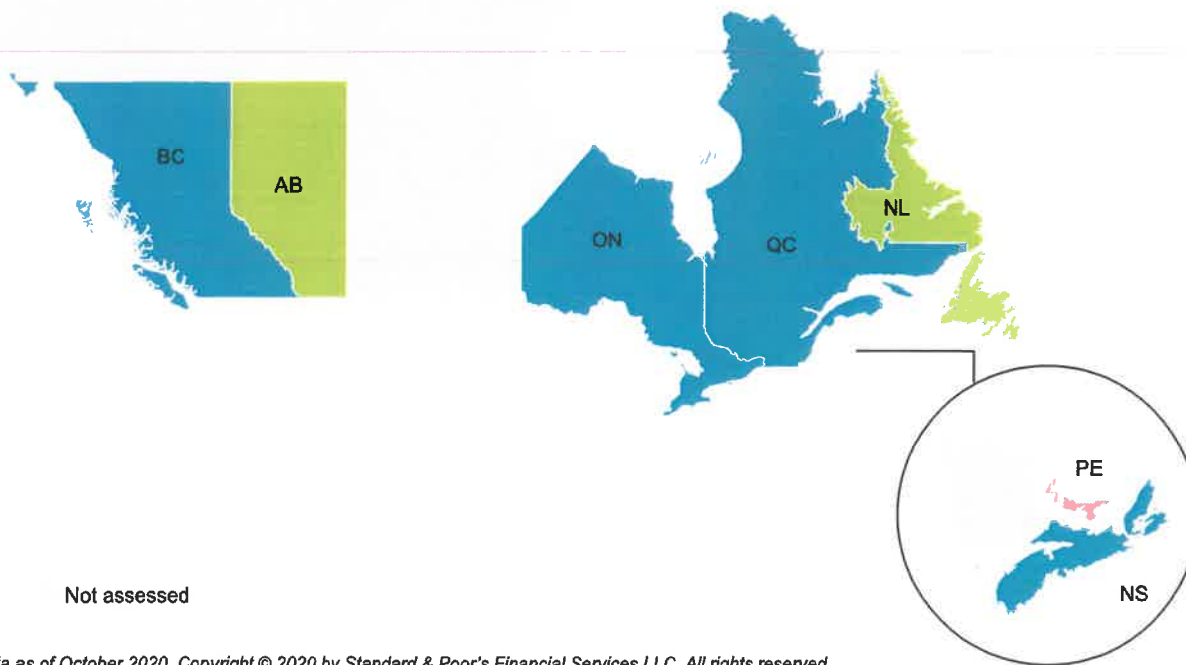
* Assessment raised, † Assessment lowered

Mapping Regulatory Jurisdictions

For jurisdictions assessed in these maps (Charts 1 and 2), colors delineate our assessments of credit supportiveness. (We do not have assessments on Canadian provinces where we do not have

Regulatory Assessment By Canadian Province/Territory

■ Credit supportive ■ More credit supportive ■ Very credit supportive ■ Highly credit supportive ■ Most credit supportive



Recent Regulatory Assessment Revisions

We periodically evaluate regulatory jurisdictions and may discern a shift in support of credit quality. Based on our most recent evaluation, the following jurisdictions have shifted their credit supportiveness.

Alberta: We revised our regulatory jurisdiction assessment on Alberta to "highly credit supportive" from "most credit supportive" reflecting our view that the Alberta regulatory construct has weakened over the past few years. Specifically, utilities in Alberta are continually exposed to the risk of absorbing the undepreciated capital cost of stranded assets due to extraordinary retirements. While this issue remains ongoing, it suggests the risk that prudently incurred capital costs by utilities may not always be recovered. In addition, we observe that Alberta authorizes some of the lowest returns on equity and equity capitalization ratios compared to other jurisdictions across North America. Furthermore, some recent decisions from the Alberta Utilities Commission (AUC) have resulted in regulatory lag for the utilities involved. Nonetheless, there are signs that the regulatory environment could stabilize and potentially improve. Since the appointment of a new interim AUC chair in June 2020, key issues such as the generic cost of capital for 2021 were resolved quickly compared to historic timelines. Furthermore, the AUC recently accepted most of the recommendations from an independent expert report and has proposed an action plan to improve efficiency and reduce regulatory lag for regulated utilities. We will continue to monitor the AUC's progress and development on this front.

Mississippi: We revised our regulatory jurisdiction assessment on Mississippi to "more credit supportive" from "credit supportive" reflecting our view that the regulatory environment in the state is stabilizing after a period of uncertainty in the years following the cancellation of Mississippi Power Co.'s (MPC's) Kemper Energy Facility. In our view, the addition of two newly elected commissioners has not resulted in any regulatory actions or decisions that are detrimental for credit quality. We view the regulatory issues related to Kemper as mostly resolved. In addition, recent decisions suggest that the regulatory environment is more credit supportive. We view the Mississippi Public Service Commission's (MPSC's) March 2020 approval of MPC's base rate case as constructive. Specifically, we view the higher authorized equity capitalization ratio increase (to 55% from 53% by the end of 2020) as favorable for the company's credit quality. The continuation of the performance evaluation plan in the state supports our view of the tariff-setting construct. Moreover, we view the MPSC response for its utilities related to COVID-19 as supportive for credit quality. Partially offsetting these positives is the pending regulatory commission decision on MPC's reserve margin plan (RMP). In December 2019, MPC updated its proposed RMP originally filed in August 2018, and includes a proposed a four-year acceleration of the retirement of Plant Greene County Units 1 and 2 to the third quarter 2021 and the third quarter 2022. Overall, while we continue to monitor this development, we view the stability of the regulatory environment and potential improvement to the regulatory compact as more credit supportive.

No Assessment Revisions, But Notable Developments And Topics Throughout North America

Arizona: Arizona's level for renewable energy was last set in 2006 with a target of 15% renewables by 2025, which is below other states in the west. However, the Arizona Corporation Commission (ACC) proposed in the summer of 2020 a 100% carbon-free Clean Energy Standard by 2050. Utilities serving the state, including Arizona Public Service and Tucson Electric Power, have proposed clean energy targets of 100% by 2050 and 70% by 2035, respectively. In late October, the ACC approved a plan for a 100% reduction in carbon-based emissions by 2050 with interim goals of a 50% cut by 2032 and 75% reduction by 2040. Utilities and other interest groups have been involved in the discussion. We are monitoring the implementation and potential regulatory

impact stemming from this clean energy standard.

California: In 2020, the California Public Utilities Commission (CPUC) issued a final decision implementing a four-year general rate case (GRC) cycle for California investor-owned utilities, directing the utilities to file a petition for modification to revise their 2019 GRCs to add two additional attrition years, resulting in a transitional five-year GRC period (2019-2023). Separately, California governor Newsom signed into law AB 913 in September, authorizing the CPUC to approve the securitization of revenue shortfalls associated with the economic effects of the COVID-19 pandemic. Overall, we view these developments as favorable for credit quality. Other developments we continue monitor include the recent blackouts that occurred across the state in the summer, some of which may have derived from extreme heat conditions.

Connecticut: In November 2020, the Public Utilities Regulatory Authority (PURA) of Connecticut preliminarily found that the current method of approving rate adjustments based on forecasted data on a biannual basis is not in the public interest. As such, PURA will perform a prudence review of any proposed rate adjustments on several rider components for Connecticut Light & Power Co. (CL&P) during the annual rate adjustment mechanism proceeding using actual costs and revenues rather than relying on projected expenses and forecasted sales and other revenues. This finding is pending and subject to a final order, which could be different from what is currently proposed. In addition, in July, regulators announced that they would investigate and temporarily suspend CL&P's rate adjustment increase, following calls to do so by legislators and ratepayers in the state. We think this investigation may have been driven in part by the prospect of higher customer bills coinciding with the COVID-19 pandemic.

Separately, a new law increases potential penalties for utilities in the state for inadequate storm response. Though this legislation places more scrutiny on utilities, it is not dissimilar from other storm-response-related fines leveled on utilities in other jurisdictions. We continue to monitor these developments, and may revise our view of the state's overall credit supportiveness if the outcome is detrimental for credit quality or the risk of political intervention in the state is persistent.

District of Columbia (D.C.): We continue to monitor Potomac Electric Power Co.'s regulatory proceeding in a first-ever multiyear rate plan the utility filed in 2019. The multiyear rate plan is the first filing of its kind in D.C. Currently, D.C.'s tariff-setting is based on historical test years that can add to regulatory lag. We continue to monitor this proceeding to determine how the alternative ratemaking mechanisms are applied and how they will affect the utilities operating there. We expect this will improve utilities' timeliness of capital and operating cost recovery.

Hawaii The state is undergoing regulatory reform, and the Hawaii Public Utilities Commission (HPUC) is proceeding with a performance-based regulation framework. The proposed framework includes a five-year rate plan with an indexed annual revenue adjustment mechanism, coupled with existing capital recovery mechanisms in between rate cases. We expect this will lead to more cash flow stability and predictability, and will most likely improve the timeliness of both capital and operating cost recovery for utilities in Hawaii, including Hawaiian Electric Industries Inc. We continue to monitor this development and expect HPUC to reveal the implementation details by the HPUC by end of 2020.

Illinois: Illinois electric utilities have been operating under a performance-based formula ratemaking construct that expires in 2022. Under this construct, utilities have updated rates annually based on formula-driven return on equity. Illinois House Bill 5673 and Senate Bill 3977

propose to extend this ratemaking construct. Although we are uncertain if there will be an extension, we continue to monitor the legislative process.

Kansas: Evergy Inc. has concluded it will pursue a Sustainability Transformation Plan that should result in greater capital spending. With the concern of high customer rates at center stage, the Kansas Corporation Commission (KCC) opened an investigation into the company's plan that includes \$3.7 billion of capital spending in the state. Over the next several months we anticipate stakeholders will opine on the plan's reasonableness, including the implications for customer rates and its consistency with agreements reached in a 2018 merger. Evergy has stated that pre-approval of the spending plan is not required under statute or current regulation; however, the spending will be subject to a prudence review when the company files its next base rate proceeding. This investigation comes as Evergy's utilities intend to file their triennial integrated resource plans in the state seeking KCC approval of generation spending. We anticipate conversations regarding both topics to overlap and extend through 2021.

Maryland We continue to monitor Baltimore Gas & Electric Co.'s pending regulatory proceeding filed in May 2020 requesting a first-ever multiyear rate plan. Currently, Maryland tariff-setting is based on historical test years that can add to regulatory lag. We continue to monitor this proceeding to determine how the alternative ratemaking mechanisms are applied and how they would affect those utilities using such a mechanism. We expect this will improve utilities' timeliness of capital and operating cost recovery.

Missouri: Evergy Inc. will pursue a Sustainability Transformation Plan that should result in greater capital spending. The Missouri Public Service Commission (MPSC) subsequently opened an investigation into the company's plan that includes \$3.3 billion of capital spending in Missouri. Of this amount, Evergy expects over \$2.9 billion of state spending to qualify for the recently implemented Plant in Service Accounting, which authorizes the deferral of depreciation expense and return associated with 85% of qualifying rate base additions between rate cases that would otherwise not be immediately captured in rates. While Evergy has stated that pre-approval of the spending is not required, the spending will be subject to a prudence review when the company files its next base rate proceeding. In the interim, the investigation will allow intervenors the opportunity to comment regarding this five-year capital plan, particularly as to how the plan compares with agreements reach in a 2018 merger. This investigation will take place as Evergy's utilities file their triennial integrated resource plans in the state seeking MPSC approval of its projected generation spending plan. The proceedings should continue into 2021.

Nevada: On Nov. 3, voters passed the second of two votes on a ballot initiative that requires Nevada electric utilities source 50% of generation from renewable energy by 2030. The governor had signed into law Senate Bill 358 in 2019, which would also require utilities to derive 50% of electricity from renewable sources by 2030, and target 100% carbon-free resources by 2050; however, this ballot initiative would slightly alter the yearly incremental increases between 2020 and 2024 and, as a constitutional amendment, could be repealed. Although we believe Nevada electric utilities will be able to meet this new generation requirement, we believe ballot initiatives indicates heightened politicization of utility policies in the state, including around long-term energy generation planning. This creates some uncertainty about investing in the state's utilities in the long run and make utility-related issues such as electricity generation part of the political process.

New Mexico: A 2020 general election ballot initiative to select the commissioners of the New Mexico Public Regulation Commission (PRC) through appointments and not elections passed. Beginning 2023, PRC commissioners will be nominated by the governor from a list of candidates compiled by a nominating committee, followed by state Senate confirmation. Our view is it's generally more credit-supportive for utilities when the regulatory commission is independent from the political process. We will continue to monitor the situation.

New York Over the past year or so, there has been heightened political scrutiny of issues such as the temporary gas moratoriums by Consolidated Edison and National Grid, as well as the storm responses of many of the utilities in the state. This scrutiny has increased as Governor Cuomo has introduced legislation to facilitate, expedite, and clarify the process for a utility to lose its franchise. We will continue to monitor developments surrounding this heightened political scrutiny to determine whether or not it could negatively impact credit quality of utilities in the state.

North Carolina The 2019 addition of three new commissioners to the North Carolina Utility Commission (NCUC) could add some regulatory uncertainty for utilities in the state. Specifically, the NCUC's recent decision on coal ash cost recovery for Dominion Energy operating in North Carolina, in which the commission authorized recovery for coal ash costs over 10 years, but without a rate of return on the unamortized balance. This indicates a change from past regulatory decisions, and potentially sets a precedent for future commission orders related to coal ash cost recovery in the state, including for utilities such as Duke Energy Carolinas LLC (DEC) and Duke Energy Progress LLC (DEP), where rate cases remain pending. Partially offsetting is the 2019 passage of Senate Bill 559, a storm securitization measure that permits recovery for certain storm recovery costs. DEC and DEP can use a new financing measure to recover restoration costs incurred after several storms and hurricanes in 2018. In October 2020, DEC and DEP filed to securitize storm costs of about \$231 million and \$748 million, respectively. Given the significance of coal ash costs in our assessment of credit risk, we will continue to monitor this development, and may revise our view of this jurisdiction if we conclude that the regulatory construct has weakened.

Ohio We continue to monitor the investigations into FirstEnergy Corp. and the potential for future regulatory ramifications. The Public Utilities Commission of Ohio (PUCO) has initiated an audit of FirstEnergy's compliance with Ohio's corporate separation regulations regarding the company's separation practices from Nov. 1, 2016, to Oct. 31, 2020. This time frame spans the separation of FirstEnergy and its former subsidiary, FirstEnergy Solutions, now known as Energy Harbor. This also includes the time period related to the passage of nuclear subsidy bill House Bill 6. Also, in September 2020, the PUCO opened a separate proceeding to review the political and charitable spending by FirstEnergy's utilities in support of House Bill 6 and against a referendum effort. Both investigations may inhibit the passage of any utility-related legislation for the foreseeable future.

South Carolina The South Carolina Legislature voted in September 2020 to evaluate potential electricity reform measures, which could result in a restructuring of the state's energy market and lead to fundamental changes to the way regulated utilities operate in the state. We expect the committee to evaluate the current structure--in which vertically integrated utilities provide electric distribution and transmission services--and consider potential reforms, including whether to establish a southeastern regional transmission organization (RTO) or join an existing RTO. We also expect the committee to consider implementing partial or full retail competition that, if enacted, would require vertically integrated utilities to divest their generation or transmission

assets, and potentially allow for community choice aggregation. While our assessment of South Carolina is unchanged, we will continue to monitor these developments.

Renewable Portfolio And Clean Energy Standards

State-level clean and renewable energy standards greatly influence the overall strategic direction and growth investments of North American regulated utilities. Regulatory support through timely cost recovery helps support credit quality and facilitate the energy transition. A number of states have either proposed or passed legislation requiring utilities to reduce their carbon emissions and utilize a greater percentage of renewable energy generation. Over 30 states have adopted a mandatory renewable portfolio standard (RPS) target requiring investor-owned utilities to achieve 100% renewable generation by 2045 or 2050, depending on the entity.

States that had either proposed or passed legislation in early 2020 that would either directly reduce emissions or increase renewables include Arizona, Delaware, Iowa, New Mexico, Massachusetts, Maryland, and Rhode Island. Along with RPS standards, investor-owned utilities are continuing to work towards meeting their own targets in both states with and without a mandatory RPS. Dominion aims to achieve net-zero greenhouse gas emissions by 2050. Southern Co. plans to reduce its carbon emissions by 50% by 2030 from its 2007 levels and achieve net-zero carbon emissions by 2050. Duke Energy also plans to reduce its carbon emissions; specifically, it aims to reduce emissions from electricity generation by at least 50% by 2030 from its 2005 levels and achieve net-zero emissions by 2050.

We will continue to monitor these developments and their potential impact on credit quality.

Related Research

- U.S. And Canadian Utility Regulatory Updates And Insights: June 2020, June 8, 2020
- Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013

This report does not constitute a rating action.

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Industry Top Trends 2021

North America Regulated Utilities

An Industry With A Negative Outlook Despite Its Predictable Cash Flows



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What's changed?

Governance risks. Uncharacteristically, in 2020 the industry experienced a number of high profile governance-related issues stemming from bribery allegations.

COVID. Despite the many potential COVID-19-related risks, the industry was able to offset many of the risks and generally performed well throughout the pandemic.

Key transitions are accelerating. Strategic M&A deals will drive further consolidation, while capital spending will be fueled by transitioning to a lower carbon footprint and asset hardening.

What are the key assumptions for 2021?

Negative discretionary cash flow. The industry's high capital spending and dividends account for about \$180 billion, necessitating consistent access to the capital markets at a reasonable price.

No change to the corporate tax rate. While not in our base case, should Democrats take hold of a majority of the U.S. Senate, a higher corporate tax rate is likely, improving the industry's funds from operations to debt by about 100 basis points.

Greenhouse gas (GHG) emissions will further decline. Although the industry reduced its GHG emissions by about 25% over the past decade, given the renewable investments, we expect a subsequent 40% reduction over the next decade.

What are the key risks around the baseline?

Environmental risks. Despite its significant carbon emission reductions, the industry is still the number two GHG emitter and further progress is necessary. This necessitates managing regulatory risk while managing the customer bill.

Financial Cushion. Many companies in the industry continue to strategically operate with very minimal financial cushion, maintaining financial measures that are just above their downgrade threshold.

Regulatory risks. During 2019, regulatory lag increased highlighted by rate case filing postponements, delayed rate case orders, and lower than expected rate case outcomes because of COVID and the economic recession.

Ratings trends and outlook

North America Regulated Utilities

Chart 1

Ratings distribution

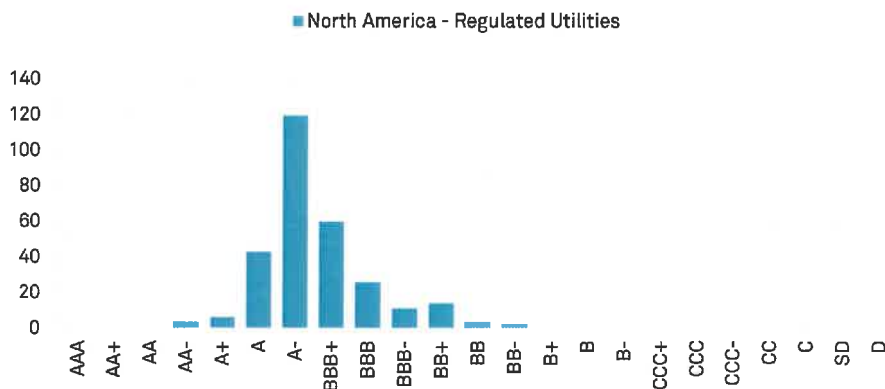


Chart 2

Ratings outlooks

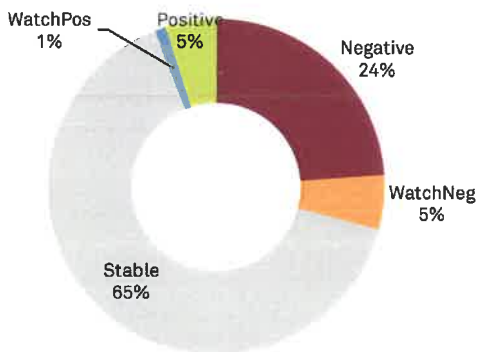


Chart 3

Ratings outlook net bias



Source: S&P Global Ratings. Ratings data measured at quarter end. Data for Q4 2020 is end October, 2020

Industry credit metrics

North America Regulated Utilities

Chart 4

Debt / EBITDA (median, adjusted)

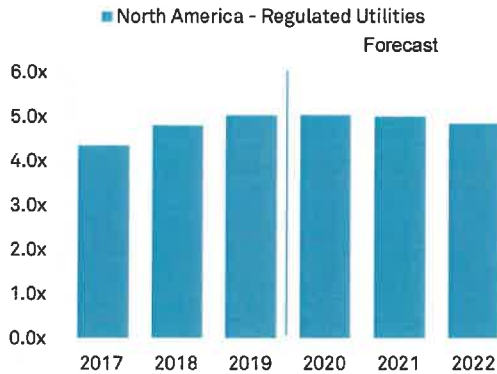


Chart 5

FFO / Debt (median, adjusted)

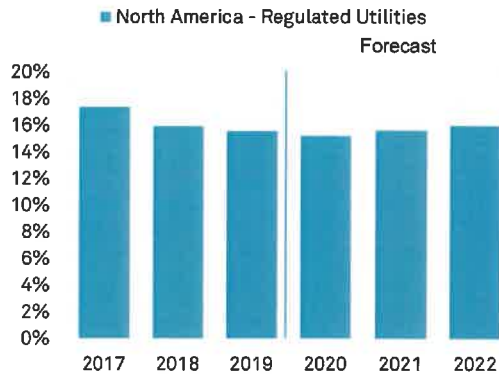


Chart 6

Cash flow and primary uses

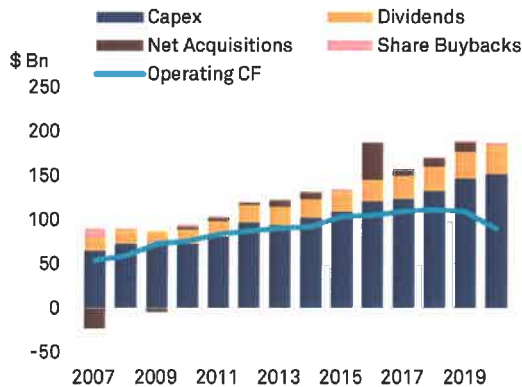
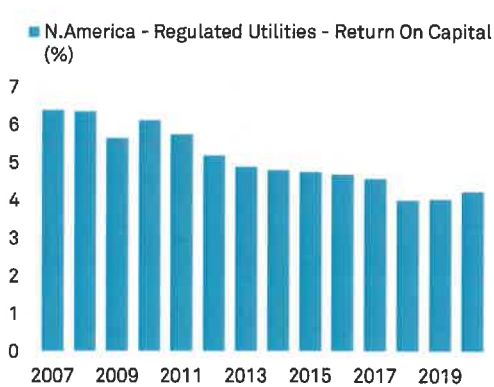


Chart 7

Return on capital employed



Source: S&P Global Ratings, S&P Global Market Intelligence. Most recent (2020) cash flow and ROCE figures are using last twelve months (LTM) data. All non-forecast figures are converted into U.S. Dollars using historic exchange rates. Forecasts are converted at the last financial year-end spot rate. FFO—Funds from operations.

Shape of recovery

Table 1

Sector Outlook Heatmap

	Sensitivities and Structural Factors			Shape Of Recovery			
	COVID-19 Sensitivity	Impact If No Vaccine in 2021	Long-Term Impact On Business Risk Profile	Revenue Decline – 2021 vs 2019	EBITDA Decline – 2021 vs 2019	Revenue Recovery To 2019 Levels	Credit Metric Recovery To 2019 Levels
Utilities							
Asia-Pacific	Low	Low	Neutral	>=2019	>=2019	2021	2021
Europe	Low	Low	Neutral	>=2019	>=2019	2021	2022
Latin America	Moderate	Moderate	Neutral	>=2019	>=2019	2021	2021
North America	Low	Low	Neutral	>=2019	>=2019	2021	2022

Source: S&P Global Ratings.

S&P Global Ratings believes there remains a high degree of uncertainty about the evolution of the coronavirus pandemic. Reports that at least one experimental vaccine is highly effective and might gain initial approval by the end of the year are promising, but this is merely the first step toward a return to social and economic normality; equally critical is the widespread availability of effective immunization, which could come by the middle of next year. We use this assumption in assessing the economic and credit implications associated with the pandemic (see our research here: www.spglobal.com/ratings). As the situation evolves, we will update our assumptions and estimates accordingly.

This report does not constitute a ratings action.

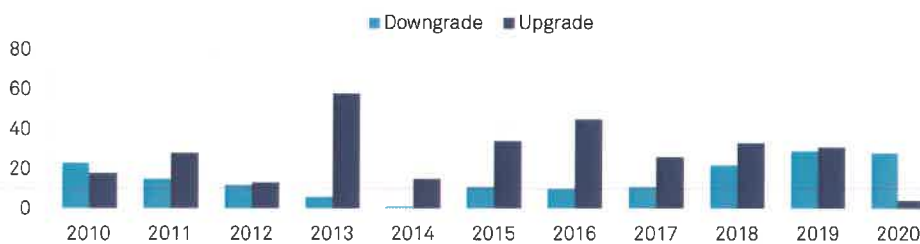
Industry outlook

Ratings trends and outlook

The industry's rating trends and outlook are negative. About 30% of North American regulated utilities either have a negative outlook or are on CreditWatch with negative implications. For the first time in a decade we expect downgrades will outpace upgrades by about 7 to 1 (see chart 8). The high percentage of negative outlooks reflect relatively weak financial measures driven by high capital spending and the effects of various Environmental, Social, and Governance (ESG) factors.

Chart 8

North America regulated utilities upgrades and downgrades



Source: S&P Global Ratings

Main assumptions about 2021 and beyond

1. Robust capital spending

The industry's capital spending has been steadily growing over the past decade. We expect 2021 capital spending at about \$150 billion for critical infrastructure projects including system hardening and upgrades, technology, renewable energy, batteries, and other carbon-emission reductions. We expect that over the next decade renewables in the U.S. will triple, displacing much of the remaining coal-fired generation.

2. COVID-19 will subdue electric deliveries to commercial customers

Over the past decade, because of conservation, the industry has experienced flat to negative electric deliveries. Accordingly, the industry has worked with regulators to mitigate the potential negative financial effects of conservation. This includes implementing formula rates, forward-looking test years, and decoupling. Another risk regarding the lack of volumetric growth is the effect COVID-19 has had on commercial customers. During 2020, electricity sales to commercial customers decreased by about 8% and this decrease could continue through much of 2021. We expect the industry will work with regulators to offset at least some of the financial effects of these lower electric deliveries. Absent regulatory recovery, financial measures would modestly weaken.

3. Strategic focus on a simpler business model

The industry has recently seen companies either announce or complete a sale, separation, or evaluate strategic alternatives for their non-utility businesses. Because of our generally favorable assessment of the low-risk regulated utility industry, we tend to assess these decisions as improving business risk. However, in many instances credit quality does not improve because the new stand-alone utility is more leveraged, weakening financial measures, and thereby offsetting the improved business risk.

The industry has managed most of its coronavirus-related risks. It offset some of its lower commercial and industrial deliveries as a result of COVID with higher residential deliveries. It worked with regulators to defer much of the COVID-related costs for future recovery. These actions, in conjunction with the industry's generally consistent access to the capital markets, offset much of the potential risks stemming from the pandemic.

One of the enduring effects of COVID-19 was regulatory lag. The industry experienced delayed rate case filings, delayed rate case orders, and weaker-than-expected rate case outcomes. As the pandemic ends (which could happen in mid-2021) and the economy improves, we expect the industry's management of regulatory risk will improve. This includes timely rate case filings and rate case orders, decreasing the regulatory lag.

For 2021, we expect volumetric growth will continue to be constrained, reflecting conservation and lower commercial electricity use related to COVID-19. Under our base case, the industry will continue to work with regulators to offset these potential risks.

We expect that over the next decade U.S. utility investments in renewable energy will triple to about 30% from approximately 10% today. In the U.S., one of the newer areas of renewable energy is offshore wind. We believe utility investments in U.S. offshore wind will significantly grow and may lead to the installation of as much as 14 gigawatts of offshore wind capacity by 2030. This would equate to more than three quarters of all the offshore capacity installed in Europe, which has been developing and installing offshore wind projects for the past three-decades. The potential growth is primarily driven by regulatory policies in states along the East Coast looking to meet renewable and clean energy targets.

Currently in the U.S. there is only one online offshore windfarm (Block Island Wind), but companies such as Avangrid, Eversource, Public Service Enterprise Group, and Dominion Energy could all have projects online by 2023. In general, we view offshore wind as having higher risk than traditional onshore wind projects due to generally higher costs, complexity to build, possible siting and permit delays, supply chain risks, and higher operational risks. However, the long-term contracted nature of these projects with other utilities could mitigate some of the aforementioned risks.

Credit metrics and financial policy

Over the last few years the industry's financial measures have weakened. This reflects a combination of tax reform, rising capital spending, regulatory lag, and lower authorized return on equity. The industry's return on capital was about 6% a decade ago and today is closer to 4%. More recently, we have seen instances where not only is the authorized return on equity (ROE) lowered but also the equity ratio is lowered. These results have weakened the industry's financial measures, pressuring credit quality.

Key risks or opportunities around the baseline

1. Operation and maintenance (O&M) cost reductions

The industry is pursuing multiple paths to reduce O&M costs, incorporating technology, productivity gains, and reducing its real estate footprint. While the reduction of these costs is ultimately passed back to ratepayers, lower O&M costs reduces the customer bill, supporting the industry's ability to maintain its robust capital spending programs while mitigating rate implications.

2. Effective management of regulatory risk

Managing regulatory risk is one of the most important elements for maintaining credit quality, which is often challenging because of regulators' concern regarding the impact to the customer bill. However, this may prove even more difficult should the economy remain weak and the pandemic persist for longer than expected. As the industry continues to invest in renewable energy, recovering these investments (while often simultaneously recovering an earlier-than-expected retirement of a coal generating facility) may be difficult. Rising interest rates, higher inflation, or a higher corporate tax rate all of which would increase the customer bill, could make it more challenging for the industry to effectively manage regulatory risk. Similarly, timely recovery of other large environmental costs, such as coal ash, further complicates the matter. All of these simultaneous challenges will pressure the industry's ability to effectively manage regulatory risk.

3. Environmental, Social, and Governance (ESG) risks

Part of the industry's 2020 weakening of credit quality is directly attributed to ESG risks. The industry continues to face environmental hazards, including West Coast wildfires, Southeastern hurricanes, and continued exposure to carbon-based emissions. Social risks in the wake of COVID-19, including delayed rate case filings, delayed rate case orders, and lower-than-expected rate case outcomes have, in certain instances, contributed to somewhat weaker financial measures. Lastly, the industry faced high-profile governance issues in 2020 based on bribery allegations. The subsequent investigations in Ohio and Illinois revealed a lack of sufficient internal controls, and violations of company policies and code of conduct. The industry regularly interacts with policymakers and lobbies on behalf of various laws and regulatory constructs to advance its interests. Should the governance issues become more widespread, confidence in the utility industry would likely weaken, pressuring credit quality.

Managing the customer bill is always an important aspect of managing regulatory risk but today it is even more so given the pandemic and the effects it has had on the economy. The utility industry has benefited over the past decade from lower-cost shale gas and historically low interest rates. However, as capital spending continues to drive up the customer bill, the industry must find savings elsewhere—from fuel, technology, and process improvements—so as not to overburden the customer. Typically a utility that is increasing capital spending by \$1 would have to identify costs savings of 10-20 cents to avoid increasing the customer bill once rate recovery is sought for the new investments.

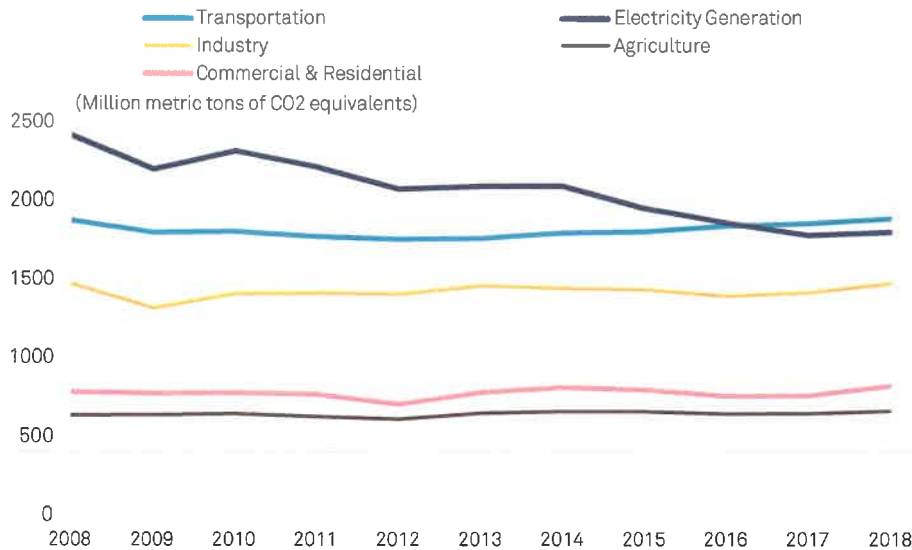
Environmental risks are elevated for the industry. Over the past decade it has made strides in reducing its reliance on coal fired generation and its associated level of carbon-based emissions. The industry is no longer the number one North America emitter of carbon-based pollutants (see chart 9). Still, about 30% of electric utilities rely on coal-fired generation that comprises at least 50% of their electricity production. Additionally, about two-thirds of those utilities rely on coal-fired generation for more than 70% of their total generation. Investors are increasingly focused on environmental issues and we

Industry Top Trends 2021: North America Regulated Utilities

expect the industry will continue to decrease carbon-based emissions by using more renewables and batteries.

Chart 9

GHG emissions by U.S. economic sector



Source: U.S. Environmental Protection Agency.

Western U.S. states faced unprecedented wildfire activity in 2020. In our view, this was indicative of an environment that is more susceptible to frequent and more severe wildfires. Still, California’s investor-owned electric utilities have not caused a catastrophic wildfire in 2020. This, and the recent northern California rainfall, is supportive of credit quality. While wildfires remain operationally challenging for California’s utilities, we believe the benefit of the wildfire fund created through SB 1054 adds sufficient financial credit enhancements to protect utilities’ credit quality over the next several years, absent near-term catastrophic wildfires.

Higher coal ash costs may be a rising risk for a few electric utilities. Coal ash is a byproduct of burning coal. While the industry, in general, has managed this risk, in some cases this risk is escalating.

We believe natural gas will serve as a bridge fuel and do not expect it to expand at the rate experienced over the past decade. As such, as coal plants continue to close, we expect the electricity output will primarily be replaced with renewables and batteries. Despite the utility industry’s already reducing its GHG emissions by about 25% over the past decade, we expect it will further reduce its GHG emissions by an incremental 40% over the next decade.

Related Research

- [Updates And Insights On Regulatory Jurisdictions Shaping Policies For North American Utilities--November 2020](#), Nov. 9, 2020
- [U.S. Regulated Utilities' Credit Metrics Could Strengthen Under Proposed Biden Tax Plan](#), Oct.29, 2020
- [How Diverging Energy Policies In The U.S. Presidential Election May Affect Credit Quality](#), Oct. 23, 2020
- [Recent Cases In Ohio And Illinois Underscore The Importance Of Effective Governance For North American Regulated Utilities](#), Oct. 23, 2020
- [The Energy Transition: COVID-19 Undermines The Role Of Gas As A Bridge Fuel](#), Sept. 24, 2020
- [North American Regulated Utilities Face Tough Financial Policy Tradeoffs To Avoid Ratings Pressure Amid The COVID-19 Pandemic](#), May 11, 2020
- [COVID-19: While Most Of The U.S. Is Shut Down, Utilities Are Open For Business](#), May 4, 2020
- [COVID-19: The Outlook For North American Regulated Utilities Turns Negative](#), April 2, 2020
- [North American Regulated Utilities Face Additional Risks Amid Coronavirus Outbreak](#), March 19, 2020
- [ESG Industry Report Card: Regulated Utilities Networks](#), Feb. 11, 2020
- [Environmental, Social and Governance: ESG Industry Report Card: Power Generation](#), Feb. 11, 2020

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SECTOR COMMENT

6 April 2020

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Regulated Electric, Gas and Water Utilities – US

Coronavirus outbreak delays rate cases, but regulatory support remains intact

The coronavirus (COVID-19) pandemic is creating logistical and social challenges for US regulated utility rate case proceedings. Electric, gas and water utilities will likely see the schedules associated with 2020 rate case proceedings postponed or delayed. In addition, we will likely see the schedules of other regulatory proceedings, open meetings, investigations or other open dockets pushed back. For many utilities, the timely conclusion of a rate case is important for earnings and cash flow, which helps fund operations, capital investing and dividends to shareholders.

When considering the short-term credit implications of coronavirus-related regulatory delays, we will view any modest weakening in financial metrics as temporary and not detrimental to long-term credit quality, unless it is accompanied by a more contentious regulatory or political environment. We will continue to expect utilities to make proactive financial policy adjustments if the dip is material, or appears likely to remain for an extended period of time. For now, we expect state regulatory commissions to continue to provide a broad suite of timely cost recovery mechanisms and to address current challenges like lost revenue and incremental expenses. As a result, we think the overall relationship with the sector remains supportive.

Still, the prospects for political intervention in the rate-making process will rise and will likely be credit positive for the sector. We think state legislatures and governors will look to provide regulators with additional flexibility to reduce their docket backlog. Utility rate proceedings are complex, time-consuming and require public hearings, making them difficult to process in a remote environment. So changes need to be codified. There is also the possibility that broader political intervention becomes credit negative, since social risks will rise as high unemployment levels make rate increases less politically palatable. (See the National Association of Regulatory Utility Commissioners' [State Response Tracker](#).)

The New York Public Service Commission has already approved multiple revenue deferral orders, allowing [Niagara Mohawk Power Corporation](#) (A3 stable) to delay about \$110 million in electric and gas revenue increases by three months to 1 July 2020 and [American Water Works Company Inc.](#) (AWK, Baa1 stable) subsidiary New York American Water Company to defer a roughly \$4 million revenue increase by five months to 1 September 2020. (AWK [expects to complete](#) the planned sale of its New York subsidiary to Algonquin Power & Utilities Corp. subsidiary Liberty Utilities in the second half of this year.)

Along similar lines, [Avangrid Inc.](#) (Baa1 negative) subsidiaries [New York State Electric & Gas Corporation](#) (A3 stable) and [Rochester Gas & Electric Corporation](#) (A3 stable) are seeking suspension of their electric and gas cases through 13 September 2020. We note that all of these filings were proposed by the utilities, as they try to do their part in reducing any near-term financial burdens on customers during the critical months of the COVID-19 pandemic. Furthermore, [National Grid Plc](#) (Baa1 stable) subsidiaries [KeySpan Gas East Corporation](#) (A3 negative) and [The Brooklyn Union Gas Company](#) (A3 negative) had their rate cases extended to 1 August 2020 in January, following the fourth one-month extension being granted (we now expect the order to come in July). Several other companies across the US have made similar requests of their respective regulators.

Rate case delays that help stakeholders are not new for the sector. We see these regulatory delays as a social benefit and view the actions as prudent corporate governance. Over the long-term, these actions often enhance financial strategy, risk management and customer relations.

We will generally try to see through one- or two-year drags on financial metrics due to these delays. We assume that the pandemic will be contained by then, that economic activity will recover and that the rate increases will eventually be approved, including some of the lost revenues associated with the delay. However, if the US economic downturn were to be protracted, it could have negative credit implications for certain utilities, such as those that have been operating with leverage that we had already considered high before the outbreak.

Exhibit 1

Utilities with rate cases that were expected to be completed in 2020 or the first quarter of 2021

Rate filing data as of 31 March 2020 and (CFO pre-WC)/debt as of year-end 2019 or available LTM

State	Company	Rating	Outlook	Expected Decision Date	Original Revenue Request (\$M)	Revenue Requested / Total Rev of Utility	Revenue Requested / Total Rev of Parent	Utility CFO Pre-WC / Debt	Utility Downgrade Trigger
MI	DTE Gas Company	A3	Stable	Sep-20	\$ 203.8	13.7%	1.6%	15.7%	15%
NJ	South Jersey Gas Company	A3	Negative	Dec-20	\$ 75.3	13.2%	4.6%	11.1%	15%
IN	Duke Energy Indiana, LLC.	A2	Stable	Apr-20	\$ 394.6	13.1%	1.6%	23.1%	22%
CA	Southern California Edison Company	Baa2	Stable	Dec-20	\$ 1,319.4	10.7%	10.7%	(2.1%)	15%
NJ	Jersey Central Power & Light Company	Baa1	Rating(s) Under Review	Nov-20	\$ 186.9	10.2%	1.7%	23.2%	17%
NY	New York State Electric and Gas Corporation	A3	Stable	Jul-20	\$ 162.7	10.2%	2.6%	19.9%	18%
NC	Duke Energy Progress, LLC	A2	Stable	May-20	\$ 586.0	9.8%	2.3%	22.4%	20%
OR	Northwest Natural Gas Company	Baa1	Stable	Oct-20	\$ 71.4	9.7%	9.7%	18.3%	14%
KY	Duke Energy Kentucky, Inc.	Baa1	Stable	Apr-20	\$ 45.6	9.5%	0.2%	17.2%	15%
NY	Brooklyn Union Gas Company, The	A3	Negative	May-20	\$ 179.8	9.4%	1.4%	8.6%	17%
LA	Cleco Power LLC	A3	Stable	N/A	\$ 109.6	9.4%	6.7%	20.3%	20%
AZ	Tucson Electric Power Company	A3	Stable	May-20	\$ 114.9	8.1%	1.7%	22.6%	22%
TX	Southwestern Public Service Company	Baa2	Stable	Sep-20	\$ 136.5	7.5%	1.2%	18.1%	18%
PA	UGI Utilities, Inc.	A2	Stable	Oct-20	\$ 74.6	7.1%		20.8%	20%
DC	Potomac Electric Power Company	Baa1	Stable	Oct-20	\$ 157.9	7.0%	0.5%	18.8%	14%
AZ	Southwest Gas Corporation	A3	Negative	May-20	\$ 93.3	6.8%	3.0%	14.6%	17%
MI	DTE Electric Company	A2	Stable	May-20	\$ 343.2	6.6%	2.7%	21.1%	20%
NH	Public Service Company of New Hampshire	A3	Stable	May-20	\$ 69.3	6.5%	0.8%	14.5%	18%
NC	Duke Energy Carolinas, LLC	A1	Stable	Apr-20	\$ 464.7	6.3%	1.9%	25.9%	25%
MN	ALLETE, Inc.	Baa1	Stable	Dec-20	\$ 65.9	5.3%	5.3%	18.6%	19%
NY	Rochester Gas & Electric Corporation	A3	Stable	Jul-20	\$ 38.7	4.2%	0.6%	18.2%	17%
WA	Puget Sound Energy, Inc.	Baa1	Stable	May-20	\$ 138.4	4.1%	4.1%	15.1%	20%
IL	Ameren Illinois Company	A3	Stable	Jan-21	\$ 102.0	4.0%	1.7%	25.3%	19%

Revenue requests represent the original filing and do not reflect settlement amounts or revised filing requests, which we expect to occur on a case-by-case basis.

Sources: Standard & Poor's Global Market Intelligence and Moody's Investors Service

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

Exhibit 2

Utilities with rate cases that were expected to be completed in 2020 or the first quarter of 2021

Rate filing data as of 31 March 2020 and (CFO pre-WC)/debt as of year-end 2019 or available LTM

State	Company	Rating	Outlook	Expected Decision Date	Original Revenue Request (\$M)	Revenue Requested / Total Rev of Utility	Revenue Requested / Total Rev of Parent	Utility CFO Pre-WC / Debt	Utility Downgrade Trigger
ME	Northern Utilities, Inc.	Baa1	Stable	Mar-20	\$ 7.1	4.0%	1.6%	23.0%	17%
MO	Empire District Electric Company (The)	Baa1	Stable	Jun-20	\$ 26.5	4.0%		25.2%	17%
MI	Consumers Energy Company	Aa3	Stable	Oct-20	\$ 244.7	3.8%	3.6%	20.1%	20%
MI	Consumers Energy Company	Aa3	Stable	Dec-20	\$ 244.4	3.8%	3.6%	20.1%	20%
CO	Public Service Company of Colorado	A3	Stable	Sep-20	\$ 144.5	3.4%	1.3%	22.1%	20%
NY	KeySpan Gas East Corporation	A3	Negative	May-20	\$ 38.8	3.1%	0.3%	16.1%	17%
HI	Hawaiian Electric Company, Inc.	Baa2	Positive	N/A	\$ 77.6	3.0%	2.7%	21.4%	15%
DC	Washington Gas Light Company	A3	Stable	Dec-20	\$ 35.2	2.6%	1.4%	15.4%	18%
NV	Southwest Gas Corporation	A3	Negative	Aug-20	\$ 35.2	2.6%	1.1%	14.6%	17%
NM	Southwestern Public Service Company	Baa2	Stable	Apr-20	\$ 46.6	2.6%	0.4%	18.1%	18%
MA	Fitchburg Gas & Electric Light Company	Baa1	Stable	Oct-20	\$ 2.7	2.5%	0.6%	23.1%	17%
AZ	Arizona Public Service Company	A2	Negative	Dec-20	\$ 68.6	2.0%	2.0%	23.4%	22%
WA	Puget Sound Energy, Inc.	Baa1	Stable	May-20	\$ 65.5	1.9%	1.9%	15.1%	20%
DE	Delmarva Power & Light Company	Baa1	Stable	Oct-20	\$ 24.3	1.9%	0.1%	17.2%	15%
OR	PacifiCorp	A3	Stable	Dec-20	\$ 78.0	1.5%	0.4%	18.4%	20%
MD	Delmarva Power & Light Company	Baa1	Stable	Jul-20	\$ 17.3	1.3%	0.1%	17.2%	15%
DE	Delmarva Power & Light Company	Baa1	Stable	Sep-20	\$ 14.6	1.1%	0.0%	17.2%	15%
MN	CenterPoint Energy Resources Corp.	Baa1	Positive	Nov-20	\$ 62.0	0.9%	0.5%	18.7%	17%
VA	Kentucky Utilities Co.	A3	Stable	Apr-20	\$ 12.7	0.7%	0.2%	23.1%	20%
OR	Avista Corp.	Baa2	Stable	Dec-20	\$ 6.8	0.5%	0.5%	15.0%	14%
CA	Southwest Gas Corporation	A3	Negative	Feb-21	\$ 6.8	0.5%	0.2%	14.6%	17%
WY	Questar Gas Company	A3	Stable	Sep-20	\$ 3.5	0.4%	0.0%	22.1%	16%
CA	Southwest Gas Corporation	A3	Negative	Feb-21	\$ 4.5	0.3%	0.1%	14.6%	17%
NY	New York State Electric and Gas Corporation	A3	Stable	Jul-20	\$ 4.1	0.3%	0.1%	19.9%	19%
NV	Southwest Gas Corporation	A3	Negative	Aug-20	\$ 3.1	0.2%	0.1%	14.6%	17%
WY	PacifiCorp	A3	Stable	Jan-21	\$ 7.1	0.1%	0.0%	18.4%	20%
CA	Southwest Gas Corporation	A3	Negative	Feb-21	\$ 1.5	0.1%	0.0%	14.6%	17%
WA	PacifiCorp	A3	Stable	Nov-20	\$ 3.1	0.1%	0.0%	18.4%	20%
OK	CenterPoint Energy Resources Corp.	Baa1	Positive	Jun-20	\$ 2.0	0.0%	0.0%	18.7%	17%
NY	Rochester Gas & Electric Corporation	A3	Stable	Jul-20	\$ (1.8)	(0.2%)	(0.0%)	18.2%	19%

Revenue requests represent the original filing and do not reflect settlement amounts or revised filing requests, which we expect to occur on a case-by-case basis.

Source: Standard & Poor's Global Market Intelligence and Moody's Investors Service

Moody's related publications

Sector Comments

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- » [Regulated Electric, Gas and Water Utilities - US: Utilities demonstrate credit resilience in the face of coronavirus disruptions, March 2020](#)
- » [Credit Conditions – Global: Coronavirus and oil price shocks: managing ratings in turbulent times, March 2020](#)
- » [Regulated electric utilities – North America: Bill proposing fines for power shutoffs is credit negative for California utilities, January 2020](#)
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- » [Regulated water utilities – US: M&A expands to cross-sector deals, with mixed credit implications for acquirers, March 2019](#)
- » [Regulated Utilities and Power - US: PG&E bankruptcy highlights environmental, social and governance risks in California, February 2019](#)

Outlooks

- » [Global Macro Outlook 2020-21 \(March 25, 2020 Update\): The coronavirus will cause unprecedented shock to the global economy, March 2020](#)
- » [Regulated electric and gas utilities – US: 2020 outlook moves to stable on supportive regulation, weaker but steady credit metrics, November 2019](#)

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Regulated Electric and Gas Utilities – US
Coronavirus-fueled rise in unemployment will limit consumer tolerance for rate hikes

Higher unemployment rates triggered by the economic slowdown from the coronavirus (COVID-19) outbreak will create a more challenging environment for US regulated utilities looking to increase their revenues through rate hikes. For most residential consumers, utility bills are still relatively low compared to other monthly bills, such as for rent or phone service. But we think most proposals to increase rates during this period of economic distress will be met with greater regulatory scrutiny. A likely outcome is that rate increases will be either delayed or spread out over a longer period of time.

The rising jobless rate and temporary furloughs will also increase the number of customers who are unable to pay their monthly bills in the near-term. Given the unprecedented number of Americans that applied for unemployment benefits in March, the US unemployment rate rose to 4.4% in March from 3.8% in February and will remain high until shuttered businesses and factories begin to reopen. The duration of this period of high unemployment will largely determine the degree to which bad debt expense (through unpaid monthly bills) will limit utility cash flow.

For now, we still see utilities maintaining supportive regulatory relationships, which we view as a core competency. As a result, we expect utilities to be proactive in trying to find ways to avoid significant increases in customer bills. For those utilities with service territories with high unemployment, it may become more difficult for regulators to authorize increases in utility revenue, especially in regions where temporarily closed businesses may struggle to return to full operation.

During the past decade when the US was in the midst of a record-long economic expansion, regulated utilities were able to pass through small but steady electricity rate increases to consumers. From 2008 to 2018, the average price of electricity increased by 2.07 cents per kilowatt hour, reflecting a compound annual growth rate (CAGR) of 1.7%, while the average monthly residential bill grew by about \$16.00, for a CAGR of 1.5%. During the same period, the median US household income strengthened at a higher CAGR of 2.0%.

An examination of average electricity bills and disposable income levels by state shows that residential electric bills have remained affordable in most states despite steady increases. As shown in Exhibit 1, the average annual bill ranged from 1.7% (District of Columbia) to 4.8% (Mississippi) of annual per capita disposable personal income, with a national average of 3.0%. If the US economy enters into a recession, the tolerance for rate increases will likely weaken, varying by state and by the economic conditions prevalent in the local market.

In such a recessionary environment, we expect to see a heightened regulatory focus on affordability, which will delay rate increases.

During periods of economic weakness, there is an inflection point at which consumers will begin to object to higher electricity rates, as we noted in our [July 2009 Industry Outlook report](#) on the US regulated utility sector, published during the last recession. Identifying this inflection point is difficult. But if a prolonged period of high unemployment were to result in a sustained decline in disposable income, proposals for new rate increases could spark significant political pushback.

The COVID-19 pandemic has presented regulated utilities with unique challenges stemming from social distancing mandates, such as an increase in postponed or delayed rate case proceedings, which will affect earnings and cash flow in 2020 (see "[Regulated Electric, Gas and Water Utilities – US: Coronavirus outbreak delays rate cases, but regulatory support remains intact](#)"). However, because the regulatory environment has been supportive in recent years, we expect utilities to work with the regulators over the next year to structure rate plans that are acceptable to both the utility and customer base.

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Exhibit 1

Electric bills account for an average 3.0% of disposable personal income

Data on US household income, per capita disposable income, electric bills and unemployment levels by state

Source	US Census	BEA	EIA	EIA2	Moody's	BLS
State	2018 Annual Median Household Income	2018 Annual Per Capita Disposable Personal Income	2018 Average Price (cents/kWh)	Average Monthly Bill (\$)	Average Annual Bill as % of Disposable Income	Unemployment Rate (March 2020)
Mississippi	44,717	34,817	11.12	138.63	4.8%	5.3%
Alabama	49,861	38,217	12.18	150.54	4.7%	3.5%
South Carolina	52,306	39,401	12.44	144.20	4.4%	2.6%
West Virginia	44,097	37,092	11.18	126.70	4.1%	6.1%
Hawaii	80,212	49,483	32.47	168.13	4.1%	2.6%
Arizona	59,246	40,031	12.77	131.31	3.9%	5.5%
Kentucky	50,247	38,137	10.60	123.57	3.9%	5.8%
Tennessee	52,375	42,912	10.71	137.35	3.8%	3.5%
Georgia	58,756	41,611	11.47	131.05	3.8%	4.2%
North Carolina	53,855	41,057	11.09	125.17	3.7%	4.4%
Missouri	54,478	42,681	11.34	126.79	3.6%	4.5%
Louisiana	47,905	42,058	9.59	122.86	3.5%	6.9%
Indiana	55,746	42,360	12.26	123.39	3.5%	3.2%
Arkansas	47,062	39,224	9.81	113.36	3.5%	4.8%
Texas	60,629	46,021	11.20	131.63	3.4%	4.7%
Florida	55,462	45,390	11.54	128.10	3.4%	4.3%
Oklahoma	51,924	42,038	10.30	117.28	3.3%	3.1%
Kansas	58,218	46,060	13.35	124.68	3.2%	3.1%
Virginia	72,577	50,725	11.73	136.59	3.2%	3.3%
Delaware	64,805	46,487	12.53	122.43	3.2%	5.1%
Ohio	56,111	43,628	12.56	114.80	3.2%	5.5%
Nevada	58,646	44,148	11.85	112.18	3.0%	6.3%
South Dakota	56,274	47,947	11.59	121.16	3.0%	3.3%
Rhode Island	64,340	48,697	20.55	121.05	3.0%	4.6%
Iowa	59,955	45,073	12.24	109.27	2.9%	3.7%
Maryland	83,242	55,191	13.30	133.68	2.9%	3.3%
Idaho	55,583	39,670	10.15	95.84	2.9%	2.6%
Michigan	56,697	43,030	15.45	103.59	2.9%	4.1%
Pennsylvania	60,905	49,893	13.89	120.04	2.9%	6.0%
Connecticut	76,348	65,084	21.20	153.46	2.8%	3.7%
Alaska	74,346	54,601	21.94	125.57	2.8%	5.6%
North Dakota	63,837	50,169	10.25	114.60	2.7%	2.2%
Nebraska	59,566	48,022	10.70	109.27	2.7%	4.2%
Oregon	63,426	44,490	10.98	99.00	2.7%	3.3%
New Hampshire	74,991	55,112	19.69	122.27	2.7%	2.6%
Maine	55,602	43,887	16.84	96.33	2.6%	3.2%
Montana	55,328	42,693	10.96	93.19	2.6%	3.5%
Massachusetts	79,835	61,320	21.61	131.20	2.6%	2.9%
New Mexico	47,169	38,117	12.68	81.08	2.6%	5.9%
Wisconsin	60,773	45,781	14.02	97.09	2.5%	3.4%
Minnesota	70,315	49,946	13.14	103.34	2.5%	3.1%
Vermont	60,782	48,771	18.02	100.83	2.5%	3.2%
New York	67,844	58,040	18.52	111.93	2.3%	4.5%
Illinois	65,030	49,960	12.77	94.98	2.3%	4.6%
California	75,277	54,932	18.84	102.90	2.2%	5.3%
Utah	71,414	41,377	10.41	77.25	2.2%	3.6%
New Jersey	81,740	59,330	15.41	106.28	2.1%	3.8%
Wyoming	61,584	54,726	11.29	94.90	2.1%	3.7%
Washington	74,073	55,538	9.75	93.34	2.0%	5.1%
Colorado	71,953	51,444	12.15	83.90	2.0%	4.5%
District of Columbia	85,203	70,258	12.84	101.01	1.7%	6.0%
National Average	62,013	47,190	13.6	116.6	3.0%	4.4%*

*This reflects the national unemployment rate of 4.4%. The national average from the data presented in the table is 4.2%.

Sources: Moody's Investors Service, US EIA, US Census and US Bureau of Labor Statistics

Appendix

The following is an excerpt from our July 2009 Industry Outlook report, "[U.S. Regulated Electric Utilities: Six-Month Update](#)," which we published during the last recession when our outlook was stable. ([Our current outlook](#) on the sector is stable.)

Consumers have limited ability to absorb new rate increases

All of these pressures indicate that there is pressure for higher electric rates, and we believe consumers and ratepayers may eventually complain to their elected officials. Once this inflection point is breached, the political and regulatory reaction will represent a major, fundamental and highly uncertain risk for the sector.

Regulators might find it increasingly difficult to authorize steadily increasing rates, especially in today's uncertain economic climate. No one knows how big an increase consumers can absorb; in any case the size would vary by location.

Even so, gasoline prices offer a look at how consumers react once this inflection point is reached, when \$4-a-gallon gasoline in 2008 led to a distinct shift in behavior among US motorists. That shift still persists a year later, even with gasoline prices much lower nationwide.

Although we acknowledge that electricity volumes are more inelastic than gasoline, we attempt to illustrate the possible US consumer inflection point regarding electric rates. Our illustration begins with average household income in 2007. We subtract about 30% to reflect state and federal taxes and other primary deductions. The result is average disposable household income. We then compare the average annual utility bill to the average disposable household income, and arrive at the average electric bill as a percentage of disposable household income. As of 2007, this ratio was about 3.4%.

While no one claims to know exactly at what point consumers will begin to object to higher electric rates, we believe this inflection point is crossed roughly when the electric bill reaches 5%-10% of disposable income. This would imply annual electric bills of about \$3,500-\$1,800 from the current \$1,200, and total aggregate rate increases of roughly 100%-50% over the existing national average of 10.65 cents per kwh.

Sharply higher utility bills and lackluster income growth: A politically volatile mix

If US household outlays for electric and gas bills advance by 20% annually between 2010-2012, they would represent a record 4% of disposable personal income (DPI) by the end of that period. Aggregate outlays on electric and gas rose by 21.3% annualized on average during the three years that ended in the first quarter of 1977, while spending on electric and gas rose no higher than 2.8% of DPI—mostly because DPI grew by a comparatively rapid annual 9.9% on average.

By contrast, US consumers would be enraged if their overall electric and gas bills soared more than 20% annualized during the 2010-2012 period if DPI rose by a much slower 1.8% annually, on average. DPI growth could indeed be this low, based on expectations of a soft US labor market subject to competitive pressures from workforces in China and India—a marked contrast from 1977, when American workers were not yet subject to wage pressures from competitively priced labor in the emerging markets.

Consumer spending on gasoline and fuel oil soared by 26% during the 12 months that ended September 2008. These prices became a political issue, even though DPI rose at a relatively normal 5.3% during this period. Any sharp acceleration of energy costs amid decidedly weak income growth is likely to spark political discord.

Sources: John Lonski, Managing Director, Moody's Capital Markets Research Group; National Income Product Accounts (NIPA)

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Regulated Electric, Gas and Water Utilities - US

Utilities demonstrate credit resilience in the face of coronavirus disruptions

The US regulated utility sector is better positioned than many industries to withstand the economic fallout from the coronavirus (COVID-19) outbreak. In addition to benefiting from stable residential customer demand, utilities can rely on a variety of cost recovery tools provided by state regulators, which helps to maintain a resilient financial profile through crises.

Financial market volatility is the biggest risk for utilities because the sector requires external capital in order to meet sizeable liquidity deficits. While we expect utilities to retain generally unfettered access to the capital markets, the continued spread of the virus and mounting pressures on commercial and industrial customers could ultimately weigh on utility credit quality.

Electric, gas and water utilities provide an essential public service, ensuring a base level of demand amid what has become a global pandemic. Residential customers account for roughly 35% of rated US electric and gas utility demand, which contributes to a dependable foundation of revenue. Water utilities typically have even higher residential exposure. For example, [American Water Works Company Inc.](#) (Baa1 stable), the largest investor-owned water utility in the US with utility operations across 15 states, sells about half its volume and generates about half of its revenue from residential customers.

Moreover, state regulatory commissions provide utility companies with a suite of credit supportive cost recovery tools. Mechanisms like revenue decoupling help ensure adequate fixed cost recovery regardless of changes in volumes, while a variety of capital spending trackers (including multiyear rate plans) help recoup cash outlays in a more timely manner. These features should enable utilities to maintain a base level of financial support, even amid potential declines in customer demand and economic stress for other sectors.

Financial-market volatility is the most material risk, but market access still strong

The utility sector is significantly free cash flow negative and has serial debt maturities in the billions of dollars every year. For instance, about \$41 billion of outstanding long-term debt is due during the remainder of 2020. As a result, utilities require continual and generally unfettered market access to maintain adequate liquidity. Exhibit 1 illustrates the aggregate sources and uses of liquidity for 40 regulated utility holding companies as of the latest reported financial data.

Exhibit 1

Holding companies have insufficient liquidity sources to meet cash demands

US regulated utility holding companies' aggregate sources and uses of liquidity, as of most recent LTM available (\$ millions)

	HoldCo Totals
Credit Facility	106,258
Outstanding	26,621
Available	79,636
Cash	12,280
CFO	95,655
Organic sources	107,935
Total Sources	187,571
Capex	122,886
Dividends	29,593
Organic uses	152,480
Maturities (STD + CPLTD)	76,050
Total Uses	228,529
Sources - Uses	(40,958)

Aggregate figures for 40 holding companies

Sources: Company SEC filings and Moody's Investors Service

For most utility holding companies, high capital spending and dividend payout ratios that average 75% are outstripping cash flow generation and revolver availability. This is a credit weakness compared to other corporate sectors that produce free cash flow and generally have lower dividend requirements. As such, utilities' heavy reliance on market access is a risk at a time of financial market volatility.

However, the sector has continued to enjoy strong market access to date because it is often the sector that is most favored by investors in times of stress. In fact, utilities are typically the last to lose market access and are often the first to reopen markets. Exhibit 2 is a list of select utility and holding company bond issuances that have taken place as COVID-19 fears have escalated. The sector's favorable financing terms have been demonstrated by [Duke Energy Indiana LLC's](#) (A2, stable) recent 30-year \$550 million first mortgage bond issued at 2.75%. Despite spreads widening versus benchmark US Treasury yields, an all-in lower cost of capital is beneficial to credit ratios.

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Exhibit 2

Debt market transactions have remained active for utilities, despite wider spreads against benchmark Treasuries
Select US regulated utilities' debt market transactions since February

Issuer (rating, outlook)	Transaction completion date	Issuance type	Transaction value (\$M)	Maturity year	Interest rate	Spread to Treasury (bps)
Union Electric Company (Baa1, stable)	17-Mar-2020	First mortgage bonds	\$465	2030	2.95%	200
Consumers Energy Company (A3, stable)	17-Mar-2020	First mortgage bonds	\$575	2051	3.50%	200
Dominion Energy, Inc. (Baa2, stable)	17-Mar-2020	Senior unsecured	\$350	2027	3.60%	275
Dominion Energy, Inc. (Baa2, stable)	17-Mar-2020	Senior unsecured	\$400	2025	3.30%	265
Entergy Arkansas, LLC (Baa1, stable)	13-Mar-2020	First mortgage bonds	\$100	2028	4.00%	175
Ohio Power Company (A2, negative)	13-Mar-2020	Senior unsecured	\$350	2030	2.60%	170
Duke Energy Indiana (A2, stable)	10-Mar-2020	First mortgage bonds	\$550	2050	2.75%	165
Entergy Texas (Baa3, positive)	5-Mar-2020	First mortgage bonds	\$175	2049	3.55%	138
Southern California Edison (Baa2, stable)	4-Mar-2020	First mortgage bonds	\$400	2030	2.25%	125
American Electric Power (Baa1, negative)	3-Mar-2020	Senior unsecured	\$400	2050	3.25%	165
American Electric Power (Baa1, negative)	3-Mar-2020	Senior unsecured	\$400	2030	2.30%	130
Entergy Louisiana (Baa1, stable)	3-Mar-2020	First mortgage bonds	\$350	2051	2.90%	130
Commonwealth Edison (A3, stable)	18-Feb-2020	First mortgage bonds	\$650	2050	3.00%	100
Commonwealth Edison (A3, stable)	18-Feb-2020	First mortgage bonds	\$350	2030	2.20%	68
FirstEnergy Corp. (Baa3, stable)	18-Feb-2020	Senior unsecured	\$850	2050	3.40%	140
FirstEnergy Corp. (Baa3, stable)	18-Feb-2020	Senior unsecured	\$600	2030	2.65%	110
FirstEnergy Corp. (Baa3, stable)	18-Feb-2020	Senior unsecured	\$300	2025	2.05%	70
DTE Electric (A2, stable)	11-Feb-2020	First mortgage bonds	\$500	2050	2.95%	90
DTE Electric (A2, stable)	11-Feb-2020	First mortgage bonds	\$600	2030	2.25%	68

Sources: Moody's Investors Service and SPGMI

Moreover, management teams can take mitigating steps to improve their liquidity, such as increasing external credit facilities, trimming capital spending or reducing their large dividend payments. Of these defensive levers, we see the addition of liquidity facilities as the most likely to be used because utilities benefit from a flight to quality on the part of investors and these facilities can be a low-cost option that maintains equity investor-friendly financial policies of capital and dividend growth.

Trimming capital spending is likely the next best alternative for management because some capital can be scaled back and deferred to a later date without any risk to safety or service reliability. We estimate that cutting sector capital expenditures to maintenance levels would likely provide enough liquidity to support most utility's cash needs. This could be important if COVID-19 and recessionary pressures limit capacity of the financial markets to absorb corporate issuance needs.

And while dividend cuts have been exercised in the past, this is usually a last resort for management and often indicates that greater risks are on the horizon. In fact, holding companies in the sector increased dividends in both 2008 and 2009, at a compound annual growth rate (CAGR) of more than a 5%, despite the recession and the financial crisis.

Most direct risk is declining commercial and industrial demand

Sales to commercial and industrial (C&I) customers, which account for about 50% of electric revenue, are far more vulnerable to economic disruptions than residential demand. In addition, such customers may not always be included as part of decoupling mechanisms, or pay a high fixed-charge demand fee, and thus could be a source of potential volatility for utility sales.

From a distribution perspective, local gas distribution companies and large investor-owned water companies are least likely to be affected by declines in C&I demand because those classes represent around 19% for gas companies and less than 30% of revenue for both American Water and the water segment of [Essential Utilities Inc.](#) (Baa2 stable), formerly known as Aqua America Inc.

Interstate electric transmission assets and companies are perhaps the best positioned overall because their rates are set based on a formulaic, forward-looking rate-setting mechanism, with a monthly formula that adjusts for changes in network load that impacts demand. This should benefit primarily transmission companies like [New England Power Company](#) (A3 positive) and [Central Maine Power Company](#) (A2 stable), or even companies like [Public Service Electric and Gas Company](#) (A2 stable) and [NSTAR Electric Company](#) (A1 stable), which have rate bases that are comprised of about 45% interstate transmission assets.

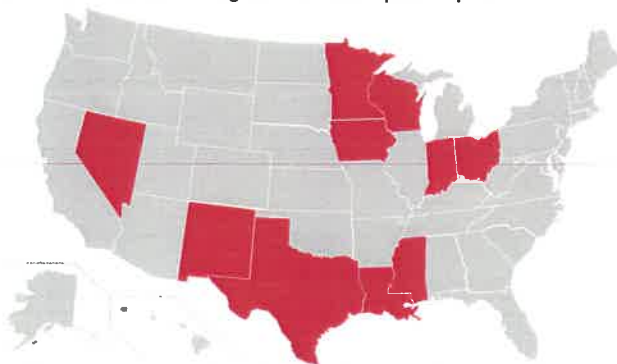
Among the utility sector's largest industrial customers are oil and gas companies, which are also suppliers of fuel to utilities. Upstream producers can even be a source of demand for water utility companies that deliver water for fracking. In the wake of the COVID-19 outbreak, which is reducing demand, oil producers are enduring plummeting share prices, a rising cost of debt and a sharp decline in oil and gas prices, which has been exacerbated by the supply shock that emerged out of the disagreement among the producing country members of OPEC in March 2020. If these pressures were to weaken credit quality in the energy sector, utility demand could be negatively affected.

Also, holding companies owning natural gas pipelines that have a supply-push orientation (i.e., shippers seeking to sell gas) will be more at risk for credit degradation than those with a utility demand-pull (i.e., shippers requiring gas to serve end-use customers) customer profile.

Exhibit 3

Utilities in South, Midwest rely most heavily on industrial customers

States where utilities with highest industrial exposure operate



Source: Moody's Investors Service, SPGM

Utility business model and financial profiles are resilient

During previous economic downturns, utilities have exhibited a strong track record of generating enough revenue to cover their costs and earn a profit. For example, during the 2008-09 financial crisis, the gross margin and cash flow for approximately 40 large electric and gas utility holding companies continued to increase year-over-year despite the economic recession and pressures on volume consumption of electricity and natural gas. Thanks to authorized recovery mechanisms, such as revenue decoupling and others, funds from operations increased by nearly 12% CAGR 2007-2009.

Along the same lines, Essential Utilities, a large investor-owned water utility holding company, steadily increased its revenue, net income and cash flow from operations year-over-year, with CAGRs of around 6%, 5% and 16%, respectively.

Maintaining financial cushion is best action to avoid negative credit implications associated with unforeseen events, such as a protracted downturn or counterparty weakness

If a failure to contain the COVID-19 outbreak leads to more severe economic repercussions, some utility companies would be more vulnerable than others. Those with weak financial metrics for their current credit profile, like [Sempra Energy](#) (Baa1 negative) and [Duke Energy Corporation](#) (Baa1 stable) will have little to no financial flexibility to withstand any form of financial challenges without taking mitigating measures.

For utility holding companies that own midstream assets, such as natural gas pipelines, significant revenue and volume exposure to financially weakened oil and gas producers or counterparties could drag on their respective consolidated credit profiles. If a protracted recession occurs, these sectors could experience significant financial stress. [CenterPoint Energy Inc.](#) (Baa2 stable) and [OGE Energy Corp.](#) ([P]Baa1 stable) are two holding companies with material exposure to the energy sector via shared ownership of [Enable Midstream Partners LP](#) (Baa3 stable), as is [DTE Energy Company](#) (Baa2 stable), given its recent acquisition of midstream gas gathering assets in Texas.

Exhibit 4

ALLETE and Superior are most exposed to industrial customers Top 10 utilities with highest proportion of industrial customers

Company	Rating, Outlook	State	% Industrial customers (by MWh volumes)
ALLETE, Inc.	Baa1, Stable	Minnesota, Wisconsin	74%
Superior Water, Light and Power Company	A3, Stable	Wisconsin	73%
Toledo Edison Company	Baa1, Stable	Ohio	57%
Southwestern Public Service Company	Baa2, Stable	New Mexico, Texas	55%
Northern Indiana Public Service Company	Baa1, Stable	Indiana	54%
MidAmerican Energy Company	A1, Stable	Iowa	52%
Entergy Louisiana, LLC	Baa1, Stable	Louisiana	52%
Mississippi Power Company	Baa2, Positive	Mississippi	50%
Indianapolis Power & Light Company	Baa1, Stable	Indiana	47%
Sierra Pacific Power Company	Baa1, Stable	Nevada	47%

Electric volumes as of year end 2018.

Companies that are in the midst of large, multiyear capital plans for investments like liquefied natural gas export terminals, natural gas pipelines and offshore wind, could also be exposed if supply-chain disruptions endure or if economic volatility changes the financial and commercial premises upon which the project was founded. This could affect utility holding companies, such as [Avangrid Inc.](#) (Baa1 stable), [Dominion Energy Inc.](#) (Baa2 stable) and Duke Energy.

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SECTOR COMMENT

6 April 2020

✓ Rate this Research

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Regulated Electric and Gas Utilities – US

Dividends a major source of cash if coronavirus downturn is prolonged

Shareholder dividends provide US regulated utilities with a significant source of internal cash that could help them offset the impact of a potentially prolonged coronavirus-related economic downturn. We expect US GDP to contract 2% in 2020, which will include a steep 4.3% contraction in the first half of the year, before recovering to 2.3% growth in 2021 (see "[Global Macro Outlook 2020-21 \[March 25, 2020 Update\]: The coronavirus will cause unprecedented shock to the global economy](#)"). As recessionary indicators build, some utilities will reassess their dividend policy.

In 2019, we estimate US utilities paid out \$28.1 billion in shareholder dividends, or almost 70% of aggregate net income. As a critical infrastructure sector, most investors view utilities as an attractive asset class during periods of market volatility. A predictable dividend policy, and effective constituency outreach programs with regulators help contribute to a 10-year average cumulative probability of default that is about four times lower than all non-financial corporates.

Dividends are authorized by a company's board of directors. The disclosure of dividend policies is one of the factors we consider when examining a company's corporate governance practices (see "[Non-financial companies – Global: Corporate governance assessments for publicly traded non-financial companies](#)"). We also look at the degree of consistency with which companies comply with its stated dividend policies. That said, the ability to adjust capital dividend payments in response to significant market shocks is a credit positive (see "[Utilities and power companies - Corporate governance assessments show generally credit-friendly characteristics](#)").

In a prolonged economic downturn, boards of directors are likely to review dividend plans as an option to conserve cash. We think utilities with high payout ratios are more likely to scale back dividend plans. [CenterPoint Energy Inc.](#) (Baa2 stable), which had a payout ratio of 86% in 2019 announced a 48% reduction in its dividend on 1 April 2020 driven primarily by a reduction in cash flow from its Enable Midstream Partners, LP (Baa3 stable) investment. The dividend reduction translates to approximately \$275 million in annual savings based on 2019 average shares outstanding. For fiscal year 2019, other utilities with high payout ratios include [Dominion Energy Inc.](#) (Baa2 stable), [PNM Resources Inc.](#) (Baa3 stable), [FirstEnergy Corp.](#) (Baa3 stable) and [NiSource Inc.](#) (Baa2 stable).

Exhibit 1

Utilities paid \$28.1 billion in shareholder dividends in 2019, roughly 69% of the \$40.9 billion net income
Ranked by 2019 dividend payout ratios (\$ millions)

Company	Rating	Outlook	2019 Common Dividend	2019 Net Income	2019 Payout Ratio	2018-2019 YOY Dividend Growth	Expected Growth Guidance for 2020 [1]
Dominion Energy, Inc. [2]	Baa2	Stable	\$2,983	\$1,341	222%	9.9%	2.5%
PNM Resources, Inc. [3]	Baa3	Stable	\$93	\$77	120%	8.5%	5.5%
FirstEnergy Corp.	Baa3	Stable	\$814	\$849	96%	5.6%	3.0%
NiSource Inc.	Baa2	Stable	\$299	\$328	91%	2.6%	6.0%
CenterPoint Energy, Inc.	Baa2	Stable	\$577	\$674	86%	3.6%	2.0%
Avangrid, Inc.	Baa1	Negative	\$545	\$700	78%	0.9%	N/A
Eversource Energy	Baa1	Stable	\$663	\$909	73%	5.9%	6.0%
Duke Energy Corporation	Baa1	Stable	\$2,668	\$3,707	72%	3.0%	2.0%
American Electric Power Company, Inc.	Baa1	Negative	\$1,350	\$1,921	70%	7.1%	3.0%
Evergy, Inc.	Baa2	Stable	\$463	\$670	69%	11.2%	N/A
OGE Energy Corp.	(P)Baa1	Stable	\$299	\$434	69%	7.9%	5.0%
Consolidated Edison, Inc.	Baa2	Stable	\$924	\$1,343	69%	3.5%	3.4%
PPL Corporation	Baa2	Stable	\$1,192	\$1,745	68%	0.6%	0.6%
Spire Inc.	Baa2	Stable	\$119	\$179	67%	5.3%	5.1%
WEC Energy Group, Inc.	Baa1	Stable	\$745	\$1,134	66%	6.8%	7.2%
ALLETE, Inc.	Baa1	Stable	\$121	\$186	65%	4.9%	6.0%
Otter Tail Corporation	Baa2	Stable	\$56	\$87	64%	4.5%	5.7%
CMS Energy Corporation	Baa1	Stable	\$436	\$680	64%	7.0%	7.0%
NextEra Energy, Inc.	(P)Baa1	Stable	\$2,408	\$3,769	64%	12.6%	12.0%
Edison International	Baa3	Stable	\$810	\$1,284	63%	2.0%	4.1%
Black Hills Corporation	Baa2	Stable	\$125	\$199	63%	6.2%	4.4%
Pinnacle West Capital Corporation	A3	Negative	\$330	\$538	61%	6.1%	6.0%
Alliant Energy Corporation	(P)Baa2	Stable	\$338	\$557	61%	5.9%	6.0%
DTE Energy Company	Baa2	Stable	\$692	\$1,167	59%	7.1%	7.0%
Xcel Energy Inc.	Baa1	Stable	\$791	\$1,372	58%	6.6%	6.2%
Entergy Corporation	Baa2	Stable	\$712	\$1,241	57%	2.2%	3.7%
Ameren Corporation	Baa1	Stable	\$472	\$828	57%	3.9%	2.5%
Northwestern Corporation	Baa2	Stable	\$115	\$202	57%	4.5%	4.3%
ONE Gas, Inc.	A2	Stable	\$105	\$187	56%	8.7%	7.0%
Public Service Enterprise Group Incorporated	Baa1	Stable	\$950	\$1,693	56%	4.4%	4.3%
IDACORP, Inc.	Baa1	Stable	\$130	\$233	56%	6.7%	5.0%
Southwest Gas Holdings, Inc.	Baa1	Negative	\$116	\$214	54%	4.8%	4.6%
Southern Company (The)	Baa2	Stable	\$2,570	\$4,739	54%	3.4%	N/A
Avista Corporation	(P)Baa2	Stable	\$103	\$197	52%	4.0%	4.5%
Unitil Corporation	Baa2	Stable	\$22	\$44	50%	1.4%	1.4%
Sempra Energy	Baa1	Negative	\$993	\$2,055	48%	8.1%	8.0%
Atmos Energy Corporation	A1	Stable	\$246	\$511	48%	8.2%	9.5%
Exelon Corporation	Baa2	Stable	\$1,408	\$2,936	48%	5.1%	5.0%
Average					69%	5.5%	5.0%
Median					63%	5.4%	5.0%

[1] Based DPS growth guidance or EPS growth guidance and payout ratio target announced before the deterioration in economic conditions

[2] In 2019, Dominion had \$1.3 billion in non-cash impairments in addition to roughly \$500 million of one-time merger related expenses that reduced net income

[3] Payout ratio elevated due to negative impact on earnings of non-cash impairment associated with the disallowance of certain coal plant upgrade capital

Sources: FactSet, company documents and Moody's Investors Service

From a credit perspective, companies with high payout ratios stand out because the incremental cash outflow for growing dividends requires more financing. Some utilities, such as Dominion and FirstEnergy, indicated a reduction in dividend growth rate before the pandemic, in part to manage their payout ratios down, and reduce their need for incremental debt. For now, most utilities are still holding onto their publicly announced dividend growth guidance. Before the coronavirus outbreak, we were estimating growth in dividends by about 5% in 2020, up to roughly \$30 billion from about \$28 billion in 2019.

If the coronavirus-fueled economic recession were to reduce the aggregate net income of US regulated utilities by 10% to \$36 billion, from about \$40 billion in 2019, the average dividend payout ratio would jump to about 80%.

Slower dividend growth helps future cash flow

We do not expect to see a widespread reduction in utility dividends, but the dividend growth rate could decline materially. Utilities with above-average payout ratios benefit from slower dividend growth, especially if cash flow declines. Of the utilities with high payout ratios, the ones most likely to scale back their dividend plans are those with significant debt balances and little flexibility to cope with cash flow deterioration.

Although the ratio of cash flow from operations before changes in working capital (CFO pre-WC) to debt is weighted most heavily in [our regulated electric and gas utilities methodology](#), the next most important ratio is CFO pre-WC less dividends to debt, commonly referred to as retained cash flow (RCF) to debt. The RCF-to-debt ratio provides insight into dividend policies and how management balances the interests of shareholders, fixed-income investors and other stakeholders.

Exhibit 2

Retained cash flow (CFO pre-WC less dividends) to debt ratios could pressure high dividend payers
Ranked by ratio of (CFO pre-WC) less dividends to debt (2019)

Company	2019 (CFO PreWC - Dividends)	2019 Adjusted Debt	2019 (CFO PreWC - Dividends)/Debt
Edison International	(\$1,359)	\$20,671	-6.6%
PPL Corporation	\$1,793	\$23,752	7.6%
FirstEnergy Corp.	\$1,867	\$24,062	7.8%
Dominion Energy, Inc.	\$3,276	\$40,732	8.0%
Eversource Energy	\$1,513	\$17,112	8.8%
CenterPoint Energy, Inc.	\$1,461	\$16,461	8.9%
Avangrid, Inc.	\$848	\$9,059	9.4%
Southern Company (The)	\$4,459	\$47,490	9.4%
Consolidated Edison, Inc.	\$2,260	\$23,902	9.5%
Spire Inc.	\$314	\$3,289	9.5%
Sempra Energy	\$2,651	\$27,455	9.7%
NorthWestern Corporation	\$235	\$2,400	9.8%
American Electric Power Company, Inc.	\$3,057	\$30,800	9.9%
Entergy Corporation	\$2,396	\$22,796	10.5%
Avista Corp.	\$252	\$2,372	10.6%
Duke Energy Corporation	\$6,606	\$62,105	10.6%
IDACORP, Inc.	\$257	\$2,349	10.9%
Alliant Energy Corporation	\$792	\$7,230	11.0%
WEC Energy Group, Inc.	\$1,450	\$12,935	11.2%
Black Hills Corporation	\$406	\$3,587	11.3%
NiSource Inc.	\$1,198	\$10,276	11.7%
Evergy, Inc.	\$1,319	\$11,167	11.8%
CMS Energy Corporation	\$1,343	\$11,351	11.8%
ALLETE, Inc.	\$214	\$1,806	11.9%
NextEra Energy, Inc.	\$5,103	\$42,303	12.1%
Public Service Enterprise Group Incorporated	\$2,102	\$17,416	12.1%
Unitil Corporation	\$73	\$604	12.1%
DTE Energy Company	\$2,235	\$18,285	12.2%
PNM Resources, Inc.	\$426	\$3,417	12.5%
OGE Energy Corp.	\$473	\$3,484	13.6%
Xcel Energy Inc.	\$2,679	\$19,632	13.6%
ONE Gas, Inc.	\$269	\$1,941	13.8%
Southwest Gas Holdings, Inc.	\$461	\$3,192	14.4%
Pinnacle West Capital Corporation	\$920	\$6,150	15.0%
Exelon Corporation	\$6,514	\$42,843	15.2%
Ameren Corporation	\$1,726	\$10,334	16.7%
Otter Tail Corporation	\$139	\$808	17.2%
Atmos Energy Corporation	\$825	\$4,242	19.4%

Source: Moody's Investors Service

Utilities view dividend reductions as a last resort

Dividend reductions are uncommon in the utilities sector and companies usually consider them only after taking other credit strengthening measures, such as curtailing discretionary capital expenditures and reducing O&M costs. Nevertheless, during times of market volatility, shifting macroeconomic fundamentals, or company-specific developments that stress liquidity, some utilities have turned to sharp reductions (or suspensions) of their dividend to conserve cash, as shown in Exhibit 5.

Exhibit 3

Historical dividend reductions have been used as a means to conserve cash when necessary US regulated utility dividend reductions and suspensions since 2008

Company	Year	Previous year payout ratio	% reduction in dividend	Year over year cash savings (\$mm) [1]	Primary driver
CenterPoint Energy, Inc.	2020	86%	48%	\$275	Underperforming midstream investment
SCANA Corporation	2018	-295%	80%	\$135	Abandonment of nuclear project
PG&E Corporation	2017	69%	100%	\$1,021	California wildfires
FirstEnergy Corp.	2014	176%	35%	\$316	Underperforming unregulated power business
Exelon Corporation	2013	148%	41%	\$467	Underperforming unregulated power business
Empire District Electric Company	2011	109%	100%	\$25	Service territory devastated by tornado
Ameren Corporation	2009	88%	39%	\$196	Unregulated power; challenging business and financial market conditions
Great Plains Energy, Inc.	2009	144%	50%	\$62	Economic and financial market uncertainty
Constellation Energy Group, Inc.	2009	-26%	50%	\$108	Unregulated power; challenging business and financial market conditions
PNM Resources, Inc.	2008	94%	46%	\$13	Underperforming unregulated electric retail business

[1] Represents the difference between total cash dividends paid in the year the dividend reduction took effect and the previous year; CenterPoint estimated based on difference in annualized dividends per share and 2019 average shares outstanding

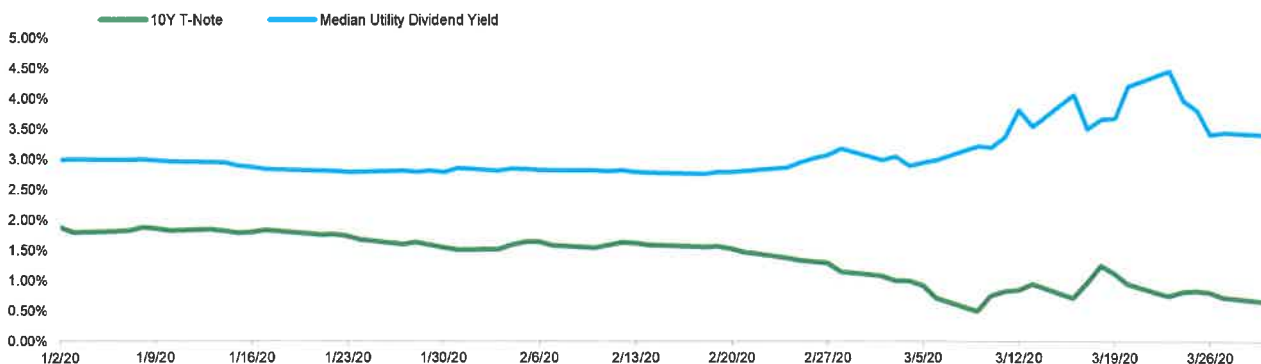
Sources: Company documents and Moody's Investors Service

The recent widening in the spread between 10-year US Treasury yields and the median utility dividend yield indicates a degree of investor uncertainty about the sustainability of dividends. For the companies included in this report, we saw the 2020 year-to-date median dividend yield peak in March at 4.5%, with the dividend yields of CenterPoint and [PPL Corporation](#) (Baa2 stable) far exceeding the median at 9.6% and 8.9%, respectively.

Exhibit 4

Widening spread points to investor uncertainty about dividend sustainability

Year-to-date median dividend yield of US utility holding companies and 10-year US Treasury yields as of 30 March 2020



Note: Median utility dividend yield based on the 38 electric and gas utility parent companies identified in this report

Source: FactSet

Appendix

Exhibit 5
Governance scores for publicly traded North American utilities and power companies

Issuer	IT Rating	CGA Assessment	Overall Score	Voting Rights and Ownership		Related Party Transactions		Compensation Disclosure		Compensation Design		Board Leadership & Independence		Director Qualifications, Experience & Refreshment		Financial Oversight & Capital Allocation 20%		Transparency of Financial Reporting		Audit Quality		Compliance Controls	
				Score	Strength Ind	Score	Strength Ind	Score	Strength Ind	Score	Strength Ind	Score	Strength Ind	Score	Strength Ind	Score	Strength Ind	Score	Strength Ind	Score	Strength Ind	Score	Strength Ind
AES Corporation, (The)	Ba1	GA-1	3.10	1	Highest	2	Highest	0	Highest	8	Moderate	5	Highest	1	Highest	6	High	0	Highest	0	Highest	3	Highest
ALLETE, Inc.	Baa1	GA-2	3.80	1	Highest	0	Highest	0	Highest	6	High	7	High	8	Moderate	7	Moderate	0	Highest	0	Highest	3	Highest
Alliant Energy Corporation	Baa2	GA-1	3.40	1	Highest	0	Highest	1	Highest	5	High	6	High	7	High	6	High	0	Highest	0	Highest	3	Highest
Ameren Corporation	Baa1	GA-1	3.10	1	Highest	0	Highest	0	Highest	10	Low	7	High	3	Highest	4	Highest	0	Highest	0	Highest	3	Highest
American Electric Power Company, Inc.	Baa1	GA-1	2.83	0	Highest	0	Highest	0	Highest	8	Moderate	3	Highest	2	Highest	7	Moderate	0	Highest	0	Highest	2	Highest
American Water Works Company, Inc.	Baa1	GA-1	3.43	1	Highest	2	Highest	0	Highest	7	Moderate	2	Highest	9	Moderate	6	High	0	Highest	0	Highest	2	Highest
Aqua America, Inc.	Baa2	GA-2	4.16	2	Highest	2	Highest	0	Highest	5	High	9	Moderate	3	Highest	9	Low	0	Highest	1	Highest	3	Highest
Atmos Energy Corporation	A1	GA-2	4.40	0	Highest	1	Highest	0	Highest	9	Moderate	8	Moderate	10	Moderate	7	Moderate	0	Highest	0	Highest	3	Highest
Avangrid, Inc.	Baa1	GA-3	4.70	4	High	1	Highest	0	Highest	5	High	15	Low	4	Highest	7	Moderate	1	Highest	2	High	3	Highest
Avista Corp.	Baa2	GA-1	3.40	1	Highest	0	Highest	1	Highest	6	High	5	Highest	5	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
Black Hills Corporation	Baa2	GA-2	4.10	1	Highest	2	Highest	0	Highest	9	Moderate	9	Moderate	4	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
CenterPoint Energy, Inc.	Baa2	GA-1	3.30	1	Highest	0	Highest	0	Highest	7	Moderate	7	High	2	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
CMS Energy Corporation	Baa1	GA-1	2.33	1	Highest	0	Highest	0	Highest	6	High	6	High	3	Highest	3	Highest	0	Highest	0	Highest	2	Highest
Consolidated Edison, Inc.	Baa2	GA-2	4.03	1	Highest	1	Highest	0	Highest	7	Moderate	6	High	10	Moderate	7	Moderate	0	Highest	0	Highest	2	Highest
Dominion Energy, Inc.	Baa2	GA-1	3.33	1	Highest	1	Highest	0	Highest	5	High	6	High	7	High	6	High	0	Highest	0	Highest	2	Highest
DTE Energy Company	Baa2	GA-2	3.63	1	Highest	2	Highest	0	Highest	8	Moderate	7	High	3	Highest	7	Moderate	0	Highest	0	Highest	2	Highest
Duke Energy Corporation	Baa1	GA-2	3.53	1	Highest	2	Highest	1	Highest	8	Moderate	6	High	2	Highest	7	Moderate	0	Highest	0	Highest	2	Highest
Edison International	Baa3	GA-1	2.90	0	Highest	1	Highest	0	Highest	7	Moderate	1	Highest	4	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
El Paso Electric Company	Baa2	GA-2	4.06	1	Highest	2	Highest	0	Highest	7	Moderate	4	Highest	10	Moderate	7	Moderate	0	Highest	1	Highest	3	Highest
Emera Inc.	Baa3	GA-1	3.00	1	Highest	2	Highest	0	Highest	6	High	1	Highest	4	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
Enbridge Inc.	Baa2	GA-1	3.30	1	Highest	1	Highest	0	Highest	5	High	9	Moderate	1	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
Entergy Corporation	Baa2	GA-2	3.70	1	Highest	0	Highest	0	Highest	9	Moderate	7	High	6	High	6	High	0	Highest	1	Highest	2	Highest
Eversource Energy	Baa1	GA-2	3.93	1	Highest	0	Highest	0	Highest	11	Low	6	High	4	Highest	7	Moderate	0	Highest	0	Highest	5	High
Exelon Corporation	Baa2	GA-1	2.23	0	Highest	0	Highest	1	Highest	7	Moderate	4	Highest	1	Highest	4	Highest	0	Highest	0	Highest	2	Highest
FirstEnergy Corp.	Baa3	GA-1	3.26	1	Highest	2	Highest	0	Highest	3	Highest	5	Highest	7	High	7	Moderate	0	Highest	0	Highest	1	Highest
Fortis Inc.	Baa3	GA-1	2.60	1	Highest	2	Highest	0	Highest	7	Moderate	3	Highest	1	Highest	5	High	0	Highest	0	Highest	3	Highest
IDACORP, Inc.	Baa1	GA-1	3.36	1	Highest	1	Highest	0	Highest	8	Moderate	5	Highest	4	Highest	7	Moderate	0	Highest	0	Highest	1	Highest
NextEra Energy, Inc.	Baa1	GA-1	3.50	0	Highest	1	Highest	0	Highest	5	High	7	High	6	High	7	Moderate	0	Highest	0	Highest	3	Highest
NiSource Inc.	Baa2	GA-2	3.76	1	Highest	0	Highest	0	Highest	8	Moderate	5	Highest	7	High	7	Moderate	0	Highest	1	Highest	3	Highest
NorthWestern Corporation	Baa2	GA-1	2.73	1	Highest	0	Highest	0	Highest	4	Highest	4	Highest	3	Highest	7	Moderate	0	Highest	0	Highest	2	Highest
NRG Energy, Inc.	Ba1	GA-2	3.60	1	Highest	2	Highest	0	Highest	8	Moderate	5	Highest	6	High	6	High	0	Highest	0	Highest	3	Highest
OGE Energy Corp.	(P)Baa1	GA-2	3.93	1	Highest	2	Highest	0	Highest	8	Moderate	9	Moderate	4	Highest	7	Moderate	0	Highest	0	Highest	2	Highest
ONE Gas, Inc.	A2	GA-2	3.76	1	Highest	2	Highest	0	Highest	7	Moderate	8	Moderate	3	Highest	7	Moderate	0	Highest	0	Highest	4	High
Otter Tail Corporation	Baa2	GA-1	3.46	2	Highest	0	Highest	0	Highest	6	High	6	High	6	High	6	High	0	Highest	0	Highest	4	High
Pattern Energy Group Inc.	Ba3	GA-1	3.26	0	Highest	1	Highest	0	Highest	6	High	5	Highest	4	Highest	7	Moderate	0	Highest	0	Highest	4	High
Pinnacle West Capital Corporation	A3	GA-1	3.36	1	Highest	0	Highest	0	Highest	5	High	7	High	4	Highest	7	Moderate	0	Highest	0	Highest	4	High
PNM Resources, Inc.	Baa3	GA-1	3.40	1	Highest	0	Highest	0	Highest	8	Moderate	5	Highest	4	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
Portland General Electric Company	A3	GA-1	3.23	0	Highest	2	Highest	0	Highest	4	Highest	4	Highest	7	High	7	Moderate	0	Highest	0	Highest	2	Highest
PPL Corporation	Baa2	GA-1	2.80	0	Highest	2	Highest	0	Highest	7	Moderate	6	High	5	Highest	3	Highest	0	Highest	0	Highest	0	Highest
Public Service Enterprise Group Incorporated	Baa1	GA-2	3.90	0	Highest	1	Highest	1	Highest	7	Moderate	4	Highest	8	Moderate	8	Moderate	0	Highest	0	Highest	3	Highest
Sempra Energy	Baa1	GA-2	3.60	1	Highest	0	Highest	0	Highest	10	Low	6	High	5	Highest	6	High	0	Highest	0	Highest	3	Highest
Southern Company (The)	Baa2	GA-2	3.80	1	Highest	1	Highest	0	Highest	6	High	8	Moderate	6	High	7	Moderate	0	Highest	1	Highest	2	Highest
Southwest Gas Holdings, Inc.	Baa1	GA-2	3.76	1	Highest	0	Highest	0	Highest	6	High	6	High	8	Moderate	7	Moderate	0	Highest	0	Highest	4	High
Spire Inc.	Baa2	GA-1	3.30	1	Highest	0	Highest	0	Highest	6	High	3	Highest	7	High	7	Moderate	0	Highest	0	Highest	3	Highest
TC Energy Corporation	Baa2	GA-2	3.56	1	Highest	4	Moderate	0	Highest	8	Moderate	3	Highest	1	Highest	8	Moderate	0	Highest	0	Highest	4	High
TransAlta Corporation	Ba1	GA-1	3.20	2	Highest	4	Moderate	0	Highest	6	High	4	Highest	2	Highest	6	High	0	Highest	0	Highest	3	Highest
Unitil Corporation	Baa2	GA-1	3.50	0	Highest	0	Highest	0	Highest	4	Highest	9	Moderate	8	Moderate	6	High	0	Highest	0	Highest	3	Highest
Vistra Energy Corp.	Ba1	GA-1	2.86	1	Highest	2	Highest	0	Highest	3	Highest	7	High	3	Highest	6	High	0	Highest	0	Highest	1	Highest
WEC Energy Group, Inc.	Baa1	GA-2	3.93	1	Highest	2	Highest	0	Highest	8	Moderate	5	Highest	8	Moderate	7	Moderate	0	Highest	0	Highest	2	Highest
Xcel Energy Inc.	Baa1	GA-2	3.70	0	Highest	0	Highest	0	Highest	7	Moderate	6	High	8	Moderate	7	Moderate	0	Highest	0	Highest	3	Highest

Source: Moody's Investors Service

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- » [Global Macro Outlook 2020-21 \(March 25, 2020 Update\): The coronavirus will cause unprecedented shock to the global economy, March 2020](#)
- » [Regulated electric and gas utilities – US: 2020 outlook moves to stable on supportive regulation, weaker but steady credit metrics, November 2019](#)

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Regulated Electric and Gas Utilities – US
Continued decline in ROEs to heighten pressure on financial metrics

- » **Lower 30-year Treasury yield to increase pressure on utilities' authorized return on equity.** The decline in the yield on 30-year US Treasury bonds will heighten pressure on the return on equity (ROE) that utilities are authorized to collect in customer rates. The 30-year yield averaged 2.89% in 2019 and finished the year at 2.39%, which is well below the 3.11% average in 2018. If the yield were to remain close to year end levels and the average, roughly 670 basis point spread with utility ROEs over the past 10 years were to be maintained, this would result in an average approved utility ROE of about 9% in 2020, down from 9.65% during 2019.
- » **Coronavirus-related drop in 30-year T-bill likely to stay the hand of regulators for now.** Regulators will be hesitant to reduce authorized returns given the current market uncertainty and while rate cases are being delayed. This may lead to the widest spread between the authorized ROE and the 30-year T-bill in at least the past two decades.
- » **Modest increases in equity capital support credit strength.** Increasing equity in the capital structure results in higher net income and lower debt in the capital structure, both of which benefit credit quality. In addition, the equity component of the capital structure generally experiences less variability when measured as a percentage change compared to ROE. Thus, the increase in average equity thickness to 50.6% in 2019 from about 49.3% during the previous two years is credit positive for utilities.
- » **Credit metrics are more sensitive to changes in ROE and equity capital after US tax reform.** Changes in ROE and equity capital affect financial metrics because utilities generate a significant portion of their cash flow from net income. While US tax reform has not had a direct impact on utility net income, it has reduced the overall level of cash flow by reducing deferred taxes and increasing net income and depreciation as percentages of utility cash flow. As a result, utility credit metrics are more sensitive to changes in authorized ROE and the level of equity capital than they were before tax reform.
- » **Outcomes will continue to vary among regulatory jurisdictions.** A variety of factors can influence the outcome of discussions among utilities, regulators and intervenors about authorized returns and equity capital. Utilities use many arguments to bolster their case for increasing shareholder returns that may offset the pressure created by declining Treasury yields. Common issues that are typically raised include the impact of tax reform, large capital programs, access to capital, fair return standards, pressure on utility bills and increasing sector risks.

Declining 30-year Treasury yield to increase pressure on authorized returns on equity

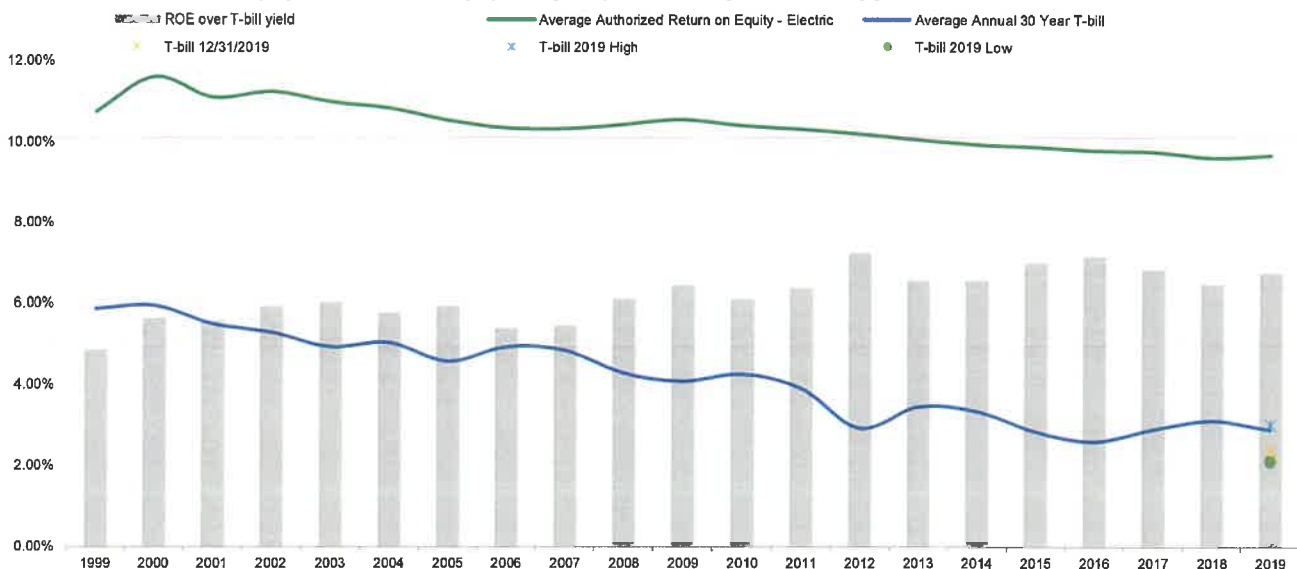
The renewed decline in the 30-year US Treasury yield during 2019 suggests that there will be heightened pressure on the ROE that utilities are authorized to collect in customer rates. During the past two decades, the average authorized ROE of US regulated utilities has fallen in the wake of the long-term decline in the 30-year T-bill. Utility ROEs have been "sticky" – that is, they have declined more slowly than the 30-year T-bill. As a result, the spread between the two has gradually expanded during this period.

The 30-year yield averaged 2.89% in 2019, down from 3.11% in 2018. However, as of 31 December 2019, the yield was 2.39% and the low for the year was 2.12%. If the yield were to remain close to year-end levels and the average 670 basis point spread with ROEs over the past 10 years were to be maintained, this would result in an average approved ROE of about 9% in 2020, down from the 9.65% in 2019. However, the stickiness of utility ROEs illustrated by higher average spreads historically suggests that the average ROE may not fall to 9% so quickly even if T-bills were to remain at year-end levels.

Exhibit 1

Spread between US utility ROEs and 30-year Treasury yield has widened over time

Average authorized return on equity for US electric utility operating companies and 30-year US Treasury yield



Sources: Moody's Analytics and S&P Global Market Intelligence

Over time, ROE declines are likely to continue to be more modest than declines in the 30-year Treasury yield. The equity component of the capital structure has increased modestly over the past 15 years, which may offset some of the pressure created by a lower ROE. These movements are important to credit quality because both ROE and the level of equity capital are key factors in utility net income, which makes up slightly less than half of utility cash flow.

Changes to ROE's can take some time to occur. In November, the Federal Energy Regulatory Commission (FERC) lowered the base ROE for Midcontinent Independent System Operator (MISO) transmission owners, which include vertically integrated utilities such as [ALLETE Inc.](#) (Baa1 stable), [Ameren Corporation](#) (Baa1 stable), [Cleco Power LLC](#) (A3 stable), [MidAmerican Energy Company](#) (A1 stable) and [Otter Tail Power Company](#) (A3 stable). The decision to lower the base ROE to 9.88% with a cap of 12.24%, including ROE incentive adders, was the culmination of a series of inquiries and rulings emanating from a complaint filed in 2013. In that complaint, a group of transmission customers alleged that MISO transmission owners were earning a base ROE that was unjust and unreasonable under section 206 of the Federal Power Act (see "[Regulated electric utilities – US: FERC order reducing MISO base ROE is](#)

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[credit negative for transmission owners](#)"). After many parties filed requests for rehearing, FERC published an order on 21 January 2020 granting these requests.

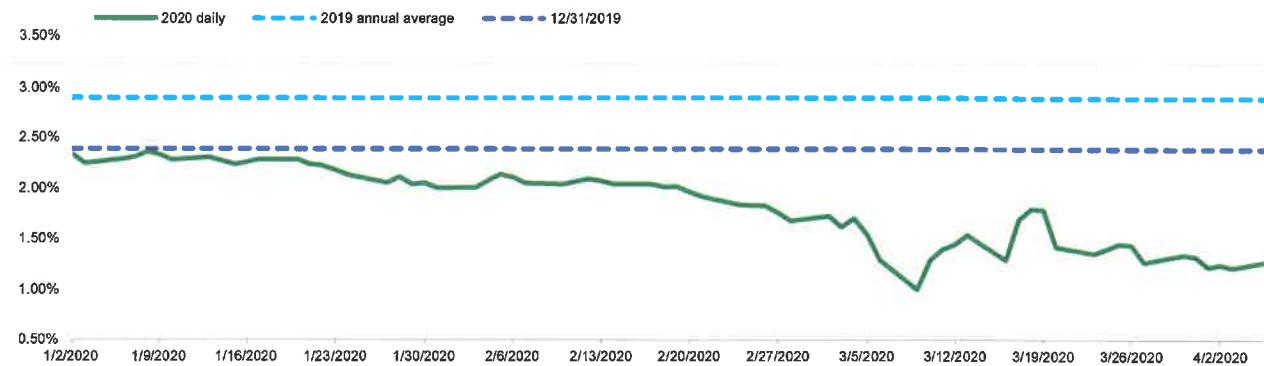
Coronavirus-related drop in 30-year T-bill likely to stay the hand of regulators for now

As a result of the economic fallout from the coronavirus outbreak, the rate on the 30-year T-bill has declined significantly, as shown in Exhibit 2. Assuming utilities continue to earn the average 670 bps spread over the 30-year T-bill, this would suggest that there will be a great deal of pressure on authorized returns. However, we think regulators will be hesitant to significantly reduce allowed returns given the uncertain market environment and the likely delays in adjudicating rate cases because of social distancing mandates and other issues associated with the coronavirus (see "[Regulated Electric, Gas and Water Utilities – US: Coronavirus outbreak delays rate cases, but regulatory support remains intact](#)"). This may lead to the widest spread between the authorized ROE and the 30-year T-bill in at least the past two decades. Utilities with a formula driven approach to setting ROEs may be hurt far more quickly as their ROE's are adjusted automatically. We expect some of these utilities to appeal to regulators to either suspend or alter this formula based approach, at least temporarily.

Exhibit 2

The 30-year T-bill has declined sharply amid coronavirus-related recessionary pressures

Yield on 30-year US Treasury bonds since the beginning of 2020



Source: Moody's Analytics

In contrast to the gradual, long-term decline in the 30-year T-bill illustrated in Exhibit 1, the year-to-date decline in the yield has been more abrupt, influenced by the plunge in economic activity at the end of the first quarter. We expect US GDP to undergo a sharp 4.5% contraction in the first half of the year, before finishing full-year 2020 down 2.0% and recovering in 2021 with 2.3% growth (see "[Global Macro Outlook 2020-21 \[March 25, 2020 Update\]: The coronavirus will cause unprecedented shock to the global economy](#)"). Given the continued uncertainty over efforts to contain the coronavirus outbreak, there is significant downside risk to our macroeconomic forecast. But if there were to be a material snapback in growth, we would expect interest rates to follow suit.

Modest increases in equity capital support credit strength

Increasing equity results in higher net income and lower debt in the capital structure, both of which benefit credit quality. In addition, the equity component of the capital structure generally experiences less variability from year to year when measured as a percentage change compared to ROE. Thus, the increase in the average equity thickness to 50.6% in 2019 from about 49.3% during the previous two years is credit positive for utilities.

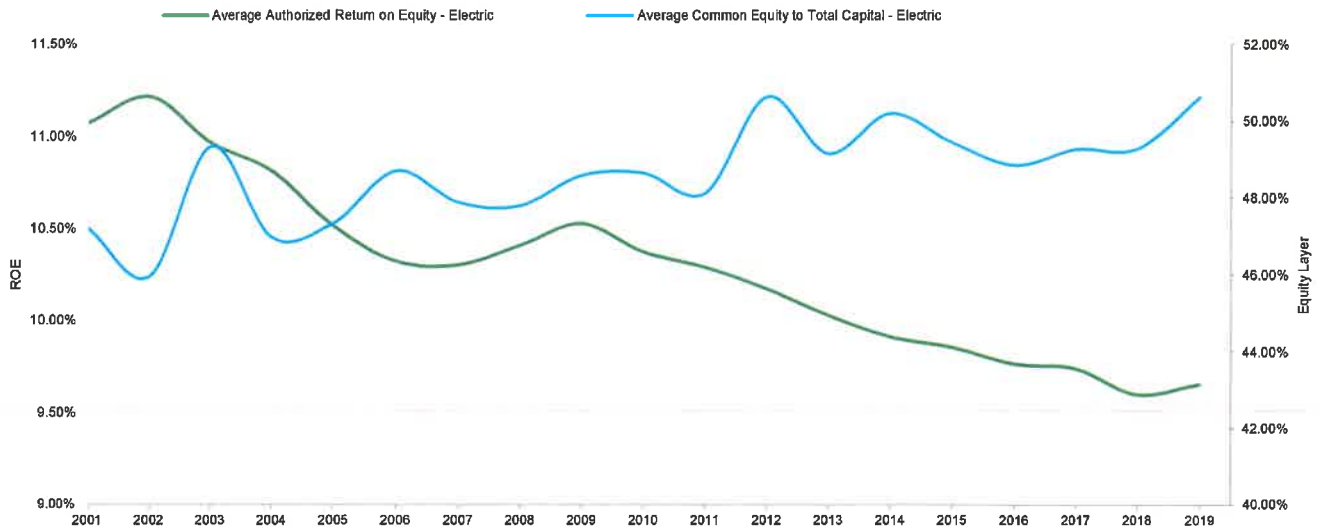
However, some jurisdictions are moving in a different direction. On 14 November, the Public Utility Commission of Texas (PUCT) issued a preliminary decision in [CenterPoint Energy Houston Electric LLC's \(CEHE, Baa1 stable\)](#) rate case, setting the utility's ROE at 9.25% and its equity ratio at 40%. Both were lower than the 9.42% ROE and 45% equity ratio recommended in September by administrative law judges at the Texas State Office of Administrative Hearings. Following the PUCT's preliminary decision, which also increases regulatory uncertainty for other regulated utilities in the state, we [placed CEHE's ratings on review](#) for downgrade and [revised our outlook on AEP Texas Inc.](#) (Baa1 negative) to negative from stable. On 21 January 2020 a CEHE filing indicated that a settlement had been reached that would set the ROE at 9.4% and the equity capital layer at 42.5%. The PUCT issued an order on 7 March 2020

based on the stipulation of settlement and incorporating the 9.4% ROE and 42.5% equity layer. CEHE's rating was lowered to Baa1 from A3, partly as a result of the lower ROE incorporated in the stipulation.

Exhibit 3

Equity capital is increasing as ROEs decline

US electric utilities' average authorized return on equity versus average common equity to total capital ratio



Source: S&P Global Market Intelligence

Credit metrics are more sensitive to changes in ROE and equity capital after US tax reform

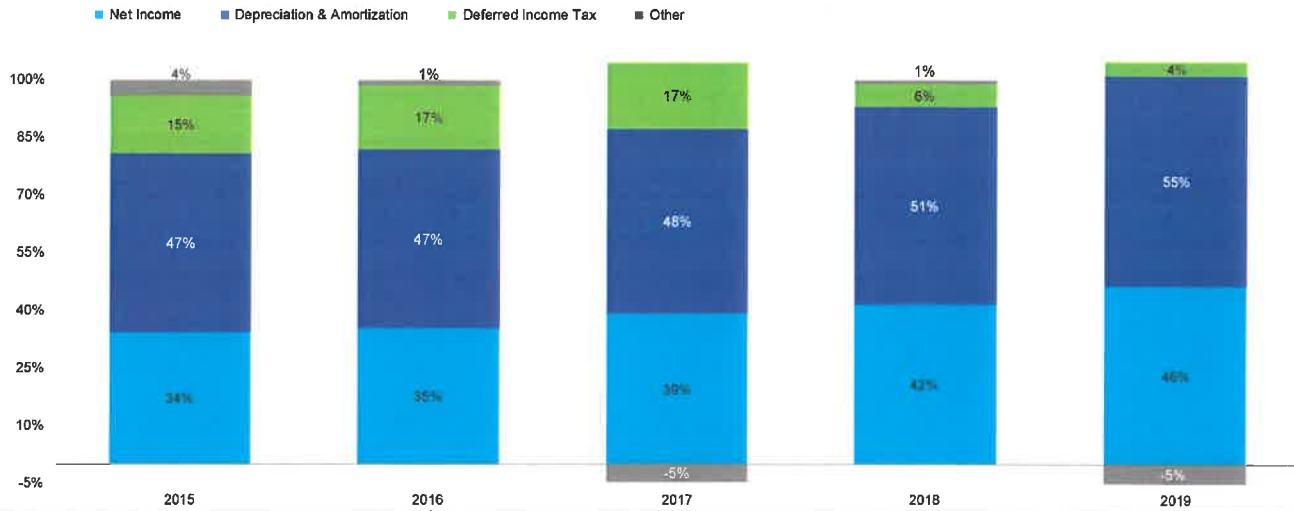
Changes in ROE and equity capital will affect financial metrics because utilities generate a significant portion of their cash flow from net income. As a simple proxy, net income is often a function of rate base times the level of equity capital multiplied by the authorized ROE. Rate base, which is the level of historical investment that utilities have made but have not yet recovered in rates, is roughly equal to net property plant and equipment with some adjustments. Investments included in rate base must be approved by the utility regulator.

While US tax reform has not had a direct impact on utility net income, it has reduced the overall level of cash flow by reducing deferred taxes. This has increased net income and depreciation as percentages of utility cash flow, as shown in Exhibit 4. As a result, utility credit metrics are now more sensitive to changes in authorized ROE and the level of equity capital than they were before tax reform.

Exhibit 4

US tax reform has changed the composition of utility cash flow

Components of utility cash flow for 109 rated vertically integrated and T&D operating companies



All numbers include Moody's standard adjustments.

Source: Moody's Investors Service

Key credit metrics are more sensitive to changes in the capital structure than they are to the authorized ROE. While ROE affects net income, changes in the capital structure affect both net income and the level of debt that cash flow has to service so, from a credit perspective, changes to the capital structure are more important to credit quality than ROE. This is clearly illustrated in Exhibit 5, which shows a simple model for estimating the impact of changes in these variables on the ratio of cash flow from operations (CFO) to debt, a key financial metric we use in analyzing a utility's financial strength. The exhibit assumes that all revenue and costs are pass-through items and assumes no impact from other potential variables, such as volume risk or taxes.

Under our base case of 50% equity capital, a 10% authorized ROE and a 4% depreciation rate, CFO/debt would be 18%. Under the alternative scenarios shown below, CFO/debt would decline to 17% if we were to assume a 9% ROE, all else being equal, and the ratio would fall to 15.5% if we were to assume 45% equity capital, all else being equal to our base case. The exhibit also shows that a one percentage point decline in ROE (to 9% from 10%) and a 1.9 percentage point reduction in equity capital (to 48.1% from 50%), all else being equal to our base case, would both result in CFO/debt of 17%.

Exhibit 5

Changes in ROE and equity capital both affect key financial metrics

Four scenarios illustrating how authorized return on equity and equity thickness affect CFO/debt ratio

	Base case (unchanged)	ROE reduced to 9%	Equity reduced to 45%	Equity reduced to 48.1%
Rate base	\$100	\$100	\$100	\$100
Allowed ROE	10.0%	9.0%	10.0%	10.0%
Equity thickness	50.0%	50.0%	45.0%	48.1%
Depreciation (years)	25	25	25	25
Depreciation rate (%)	4.0%	4.0%	4.0%	4.0%
Net income	\$5.0	\$4.5	\$4.5	\$4.8
Depreciation	\$4.0	\$4.0	\$4.0	\$4.0
CFO	\$9.0	\$8.5	\$8.5	\$8.8
CFO/debt	18.0%	17.0%	15.5%	17.0%

Source: Moody's Investors Service

Outcomes will continue to vary among regulatory jurisdictions

A variety of factors can influence the outcome of discussions among utilities, regulators and intervenors about authorized returns and equity capital. Outcomes may vary considerably among jurisdictions, with the credit implications for utilities ranging from modest to significant.

Utilities use many arguments to bolster their case for increasing shareholder returns. Common issues that are typically raised include the impact of tax reform, large capital programs, access to capital, fair return standards, higher returns at other utilities within the same corporate group, pressure on utility bills and increasing sector risks.

If capital programs have strong support for regulatory recovery, they may not ultimately pressure utility balance sheets and financial metrics, but they do still increase external capital needs. While we do not believe that utilities will experience difficulties in raising capital as required, as this is a fundamental strength of the sector, the cost of capital may vary considerably as recent market volatility has demonstrated.

Fair return standards that reference capital attraction, comparable returns and access to capital do not ensure that companies will have higher allowed returns because they are not prescriptive in terms of required return levels. Some Canadian jurisdictions, which often have similar fair return concepts, may have significantly different outcomes when it comes to shareholder returns.

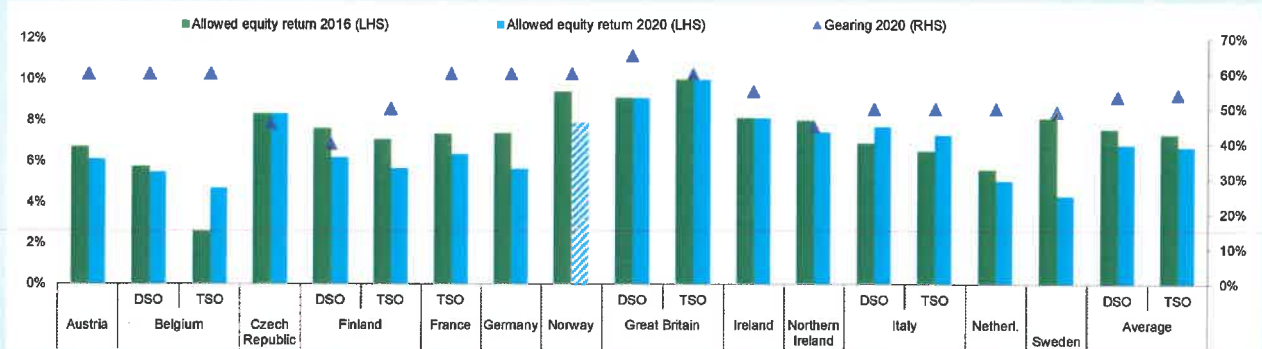
It is easier to increase net income (i.e., shareholder returns) if utility bills are low or otherwise declining. It may be significantly more difficult to increase ROE or equity capital in an environment where rates are politically sensitive or are otherwise under significant upward pressure.

ROE and equity capital are lower in Europe

Allowed returns and equity thickness are generally lower for European electricity distribution and transmission networks. The average gearing or debt to rate base is about 54%, while the average ROE is about 6.8%. As shown in Exhibit 6, allowed equity returns have been relatively stable over the 2016-2020 period, with some notable downward exceptions. But the downward trend is more pronounced when we look at European electricity transmission operators over the period 2016-2023, as shown in Exhibit 7. For more information, see "[Regulated electric and gas networks — EMEA: 2020 outlook stable, underpinned by transparent and predictable regulation](#)"

Exhibit 6

Allowed equity returns relatively stable for electricity network operators in recent years; only Finnish, German, Norwegian and Swedish operators have seen material cuts since 2016
All figures nominal post-tax

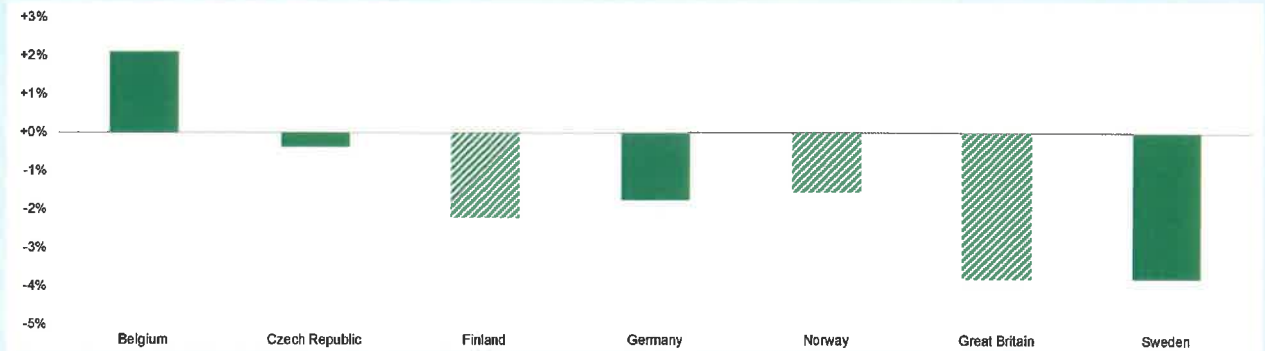


(1) Excludes measures that increase overall allowed return, for example: the 80 basis points higher equity return for new investments in Austria in the current regulatory period; 'aiming up' in Ireland; and 'F factor' in Italy; (2) Belgium Distribution System Operators (DSOs) refers to those in the Flanders region; (3) Where allowed equity returns have been set in real terms, these values have been converted to nominal terms using long-run inflation targets (that is 3% GB, NI; 2% Ireland and Italy) if not been specified by the regulator (Netherlands and Sweden specified); (4) Great Britain TSO figures for [National Grid Electricity Transmission plc](#) (A3 stable).

Source: Moody's Investors Service on regulatory data

Exhibit 7

Allowed equity returns for most electricity transmission operators will be materially lower in 2023 than they were in 2016
Change in allowed equity returns between 2016 and 2023, in nominal, post-tax terms. Shaded bar = projection based on draft determination/published methodology; solid bar = confirmed (final determination)



(1) Where allowed equity returns have been set in real terms, these values have been converted to nominal terms using a long-run inflation target (3% for RPI and 2% for CPIH in Great Britain, applicable for 2016 and 2023 respectively) if not specified by the regulator (Sweden specifies).

(2) Prevailing methodology applies to Finland, Great Britain and Norway.

Source: Moody's Investors Service on regulatory data

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- » [Regulated Electric and Gas Utilities - US: Renewable generation transition unlikely to create significant stranded asset risk](#), November 2018
- » [US Regulated Utilities: Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles](#), March 2015

Industry Outlook

- » [Global Macro Outlook 2020-21 \(March 25, 2020 Update\): The coronavirus will cause unprecedented shock to the global economy](#), March 2020
- » [Regulated electric and gas utilities – US: 2020 outlook moves to stable on supportive regulation, weaker but steady credit metrics](#), November 2019

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Regulated Electric and Gas Utilities – US
FAQ on credit implications of the coronavirus outbreak

What is the primary near-term credit issue for regulated investor-owned utilities arising from the coronavirus outbreak?

The maintenance of sufficient liquidity to weather a prolonged period of financial volatility and turbulent capital markets are the most important credit issue facing US regulated utilities. Liquidity encompasses a company's ability to generate cash from internal sources, as well as the availability of external sources to supplement these internal sources. Utilities are among the largest debt issuers in the corporate universe and typically require consistent access to the capital markets to assure adequate sources of funding and to maintain financial flexibility. During times of distress and when capital markets are exceedingly volatile and tight, liquidity becomes critically important because access to the capital markets may be difficult.

The severity of the coming economic recession will be determined in large part by the scope and duration of the coronavirus pandemic. As a result, utilities may encounter declines in volumes and revenue, as well as increases in bad debt expense if cash-strapped customers are unable to pay their bills. These factors will limit a utility's internal cash flow, which will require greater reliance on external sources of liquidity.

Do utilities currently have access to the capital markets?

Yes, thus far utilities have had relatively strong access. So far in March, utilities have had good access to the capital markets, raising over \$20 billion in US investment-grade debt. Tier 1 issuers commercial paper issuers, such as [Florida Power & Light Company](#) (A1 stable), [NSTAR Electric Company](#) (A1 stable) and [Northern Illinois Gas Company](#) (A2 stable), continue to have generally good access to the CP market, albeit at shorter tenors and sometimes on an overnight basis. The commercial paper (CP) market has tightened considerably for Tier 2 issuing companies, such as [Spire Inc.](#) (Baa2 stable), [The Southern Company](#) (Baa2 stable) and [Avangrid, Inc.](#) (Baa1 negative). In an effort to reduce their reliance on the volatile CP market, many companies have taken a variety of measures to bolster their liquidity. Some have entered the bond markets opportunistically to issue long-dated bonds in an effort to capitalize on low rates, while others have used uncommitted lines of credit and entered into short-term bank term loans (e.g., 364-day facilities) to shore up their liquidity position.

We do not view higher leverage related to pre-financing as credit negative because the higher debt load should be temporary. Instead, we view the removal of near-term maturity uncertainty amid capital markets volatility as positive for liquidity, much as we did during the 2007-09 recession.

Exhibit 1

P-1 issuers continue to have better access to the CP market compared to P-2 peers

Short-term ratings for US regulated utilities for the most recent 12 month period (mostly as of the end of 2019) versus their short-term ratings as of the end of 2007

Issuer	Current ST Rating	ST Debt Outstanding as of LTM	2007 ST Rating	ST Debt Outstanding as of FY 2007
Alabama Power Company	P-1	\$0	P-1	\$0
American Transmission Company LLC	P-1	\$263	P-1	\$105
Consumers Energy Company	P-1	\$90	WR	\$0
DTE Electric Company	P-1	\$451	P-2	\$683
Florida Power & Light Company	P-1	\$1,482	P-1	\$642
Gulf Power Company	P-1	\$155	WR	\$45
Madison Gas and Electric Company	P-1	\$55	P-1	\$61
MidAmerican Energy Company	P-1	\$0	P-1	\$86
Northern Illinois Gas Company	P-1	\$120	P-1	\$369
Northern States Power Company (Minnesota)	P-1	\$30	P-2	\$437
Northern States Power Company (Wisconsin)	P-1	\$65	NR	\$59
NSTAR Electric Company	P-1	\$77	P-1	\$257
ONE Gas, Inc	P-1	\$517	NR	-
PECO Energy Company	P-1	\$0	P-1	\$246
Peoples Gas Light and Coke Company	P-1	\$28	P-1	\$188
Public Service Electric and Gas Company	P-1	\$10	P-2	\$65
Southern California Gas Company	P-1	\$630	P-1	\$0
Virginia Electric and Power Company	P-1	\$350	P-2	\$371
Wisconsin Electric Power Company	P-1	\$37	P-1	\$354
Wisconsin Public Service Corporation	P-1	\$19	P-1	\$61
Alliant Energy Corporation	P-2	\$364	P-2	\$211
Ameren Corporation	P-2	\$440	P-2	\$1,472
Ameren Illinois Company	P-2	\$53	WR	-
American Electric Power Company, Inc.	P-2	\$2,838	P-2	\$1,167
Atlantic City Electric Company	P-2	\$70	P-2	\$52
Avangrid, Inc.	P-2	\$614	P-2	\$138
Baltimore Gas and Electric Company	P-2	\$76	P-2	\$0
Berkshire Hathaway Energy Company	P-2	\$3,214	NR	\$130
Black Hills Corporation	P-2	\$350	NR	\$37
CenterPoint Energy Resources Corp.	P-2	\$0	P-3	\$299
CenterPoint Energy, Inc.	P-2	\$868	NP	\$232
Commonwealth Edison Company	P-2	\$130	NP	\$370
Consolidated Edison Company of New York, Inc.	P-2	\$1,137	P-1	\$555
Consolidated Edison, Inc.	P-2	\$1,692	P-1	\$840
Delmarva Power & Light Company	P-2	\$56	P-2	\$286
Dominion Energy Gas Holdings, LLC	P-2	\$322	NR	-
Dominion Energy South Carolina, Inc.	P-2	\$565	P-2	\$464
Dominion Energy, Inc.	P-2	\$911	P-2	\$1,757
DTE Energy Company	P-2	\$828	P-2	\$1,084
DTE Gas Company	P-2	\$232	P-2	\$454
Duke Energy Corporation	P-2	\$3,135	P-2	\$1,080
Empire District Electric Company (The)	P-2	\$0	P-2	\$33
Entergy Corporation	P-2	\$1,947	NR	\$25
Energy Kansas Central, Inc.	P-2	\$382	WR	\$180
Energy Metro, Inc.	P-2	\$205	P-2	\$436

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Issuer	Current ST Rating	ST Debt Outstanding as of LTM	2007 ST Rating	ST Debt Outstanding as of FY 2007
Evergy Missouri West, Inc.	P-2	\$168	NR	\$25
Eversource Energy	P-2	\$1,260	WR	\$79
Exelon Corporation	P-2	\$1,370	P-2	\$616
Exelon Generation Company, LLC	P-2	\$320	P-2	\$0
Hydro One Inc.	P-2	\$881	P-1	\$12
IDACORP, Inc.	P-2	\$0	P-2	\$186
Idaho Power Company	P-2	\$0	P-2	\$137
Interstate Power and Light Company	P-2	\$108	P-2	\$130
ITC Holdings Corp.	P-2	\$0	NR	\$0
Kentucky Utilities Co.	P-2	\$150	WR	\$23
Louisville Gas & Electric Company	P-2	\$238	NR	\$78
New Jersey Natural Gas Company	P-2	\$50	P-1	\$186
NextEra Energy Capital Holdings, Inc.	P-2	-	NR	-
NiSource Inc.	P-2	\$1,773	NR	\$1,463
Northwest Natural Gas Company	P-2	\$46	P-1	\$143
NorthWestern Corporation	P-2	\$0	WR	\$0
OGE Energy Corp.	P-2	\$112	P-2	\$296
Oklahoma Gas & Electric Company	P-2	\$0	P-1	\$349
Oncor Electric Delivery Company LLC	P-2	\$46	SGL-2	\$1,280
Ontario Power Generation Inc.	P-2	\$91	NR	\$304
Orange and Rockland Utilities, Inc.	P-2	\$30	P-1	\$45
PacifiCorp	P-2	\$130	P-2	\$0
Pepco Holdings, LLC	P-2	\$220	P-3	\$289
Portland General Electric Company	P-2	\$0	P-2	\$0
Potomac Electric Power Company	P-2	\$82	P-2	\$180
PPL Electric Utilities Corporation	P-2	\$0	P-2	\$41
Public Service Company of Colorado	P-2	\$39	P-2	\$271
Public Service Enterprise Group Incorporated	P-2	\$2,480	P-2	\$65
Puget Sound Energy, Inc.	P-2	\$176	NR	\$260
Questar Gas Company	P-2	\$45	WR	\$73
San Diego Gas & Electric Company	P-2	\$80	P-1	\$0
South Jersey Gas Company	P-2	\$175	WR	\$76
Southern California Edison Company	P-2	\$0	P-2	\$704
Southern Company (The)	P-2	\$2,055	P-1	\$1,272
Southern Power Company	P-2	\$1,373	P-2	\$50
Southwestern Public Service Company	P-2	\$0	P-2	\$129
Spire Inc.	P-2	\$519	NR	\$211
Union Electric Company	P-2	\$234	P-2	\$82
WGL Holdings, Inc.	P-2	\$331	NP	\$184
Wisconsin Gas LLC	P-2	\$266	P-1	\$90
Wisconsin Power and Light Company	P-2	\$168	P-1	\$82
Xcel Energy Inc.	P-2	595	P-2	\$1,089

Note: LTM financial data is based on latest 12-month data available.
Source: Moody's Investors Service, SEC Filings

Which companies are most vulnerable to credit pressure as a result of the coronavirus?

The impact of the coronavirus outbreak on utility credit quality will largely depend on the length of the crisis and the severity of the economic recession that we expect will take hold during the first half of this year (see "[Global Macro Outlook 2020-21 \[March 25, 2020 Update\]: The coronavirus will cause unprecedented shock to the global economy](#)"). The economic downturn will pose a challenge for companies with already-weak financial profiles that are trending at or below their respective downgrade thresholds.

The financial cushion that a utility company maintains – often expressed as where the latest 12 month financial credit ratio compares to the published upgrade or downgrade trigger – is always of interest to investors. But our assessment of a utility's credit quality goes beyond a specific ratio as we consider a host of other factors, particularly the regulatory environment in which it operates. Some

utilities have financial ratios that reflect the impact of extraordinary developments. For example, [Edison International's](#) (Baa3 stable) historical ratios of cash flow from operations before changes in working capital (CFO pre-WC) to debt reflect its extraordinary costs associated with past California's wildfires.

Exhibit 2

Utility companies with weak financial profiles are most vulnerable to the impact of the coronavirus outbreak

Select list of US regulated utility holding companies at or below their downgrade threshold for ratios of CFO pre-WC to debt as of 31 December 2019

Issuer	Rating	Outlook	FY 2019 (CFO Pre-WC) / Debt	3-Year Average (CFO Pre-WC) / Debt	Downgrade Threshold	Cushion Between Downgrade Threshold and FY 2019
Edison International	Baa3	Stable	-2%	13%	13%	-15%
Eversource Energy	Baa1	Stable	13%	13%	15%	-2%
Sempra Energy [1]	Baa1	Negative	14%	15%	16%	-2%
CenterPoint Energy, Inc. [2]	Baa2	Stable	13%	16%	15%	-2%
Emera Inc.	Baa3	Stable	10%	10%	12%	-2%
Entergy Corporation	Baa2	Stable	14%	13%	15%	-1%
CMS Energy Corporation	Baa1	Stable	16%	17%	17%	-1%
American Electric Power Company, Inc.	Baa1	Negative	14%	17%	15%	-1%
Pinnacle West Capital Corporation	A3	Negative	20%	22%	21%	-1%
Duke Energy Corporation	Baa1	Stable	15%	14%	15%	0%
FirstEnergy Corp.	Baa3	Stable	11%	13%	11%	0%
NextEra Energy, Inc.	(P)Baa1	Stable	18%	20%	18%	0%
Consolidated Edison, Inc.	Baa2	Stable	13%	15%	13%	0%
Berkshire Hathaway Energy Company	A3	Stable	15%	16%	15%	0%
Public Service Enterprise Group Incorporated	Baa1	Stable	18%	20%	17%	1%
Fortis Inc.	Baa3	Stable	12%	11%	11%	1%
PPL Corporation	Baa2	Stable	13%	13%	12%	1%
Southern Company (The)	Baa2	Stable	15%	15%	14%	1%
DTE Energy Company	Baa2	Stable	16%	17%	15%	1%
Dominion Energy, Inc.	Baa2	Stable	15%	14%	14%	1%

[1] As noted in the 31 Dec 2019 credit opinion, assuming no changes to Sempra's business risk profile, a downgrade of Sempra could occur if the company fails to achieve a ratio of CFO pre-WC to debt well above 16% in 2020.

[2] As noted in the 27 Feb 2020 credit opinion, CNP's ratio of CFO pre-WC to debt downgrade threshold may be lowered to below 14% upon completion of the announced sale of its non-regulated business.

Source: Moody's Investors Service, Moody's Financial Metrics

Utilities that have a higher proportion of commercial and industrial (C&I) customers will be hard hit by declining volumes during a pandemic-triggered economic downturn. C&I demand accounts for about 50% of total regulated electric revenue and is far more vulnerable to economic disruptions than residential demand. Utilities with substantial sales to businesses in the tourism, travel and oil & gas sectors are also vulnerable (see "[Corporates - Global Heat map: Coronavirus hurts travel-driven sectors, disrupts supply chains, effects compounded with global spread](#)"). While we expect many of the most affected businesses to recover, we are also monitoring the small commercial business customer classes, where volume declines could be slower to recover.

Exhibit 3

ALLETE and Superior are most exposed to industrial customers
Top US regulated utility companies with the highest proportion of industrial customers

Issuer	Rating, Outlook	State	% Industrial customers (by MWh volumes)
ALLETE, Inc.	Baa1, Stable	Minnesota, Wisconsin	74%
Superior Water, Light and Power Company	A3, Stable	Wisconsin	73%
Toledo Edison Company	Baa1, Stable	Ohio	57%
Southwestern Public Service Company	Baa2, Stable	New Mexico, Texas	55%
Northern Indiana Public Service Company	Baa1, Stable	Indiana	54%
Entergy Louisiana, LLC	Baa1, Stable	Louisiana	52%
Mississippi Power Company	Baa2, Positive	Mississippi	50%
Indianapolis Power & Light Company	Baa1, Stable	Indiana	47%

Note: Electricity volumes as of year-end 2018.
Sources: S&P Global Market Intelligence, Moody's Investors Service

How do utilities absorb abrupt declines in volumes or revenues?

Regulatory support is important to recover costs associated with lost volumes, revenue or customers. Some utilities are already somewhat insulated from volume declines thanks to decoupling mechanisms. Revenue decoupling, which is widely used by local gas distribution companies (LDCs), is a ratemaking mechanism that is generally designed to eliminate or reduce the volatility of a utility's revenue on system throughput (i.e., electricity load or natural gas volumes). Decoupling helps insulate utility credit quality by safeguarding against the financial impact of a decline in electricity and natural gas consumption due to factors beyond the utility's control, such as energy efficiency, fluctuations in commodity fuel prices and weather. Because of the regulatory lag in recovering costs under these mechanisms, utilities also need to maintain sufficient liquidity until this recovery materializes.

Bad debt expense or the inability of customers to pay their bills will likely be addressed in several different ways. Many utilities already have a baseline level of bad debt expense, based on historical run-rates, which they already recover through customer rates. Some utilities, such as [Oncor Electric Delivery Company LLC](#) (A2 stable), have a bad debt expense rider/tracker that allows the utility to recover these costs in rates in a timely manner. Others may be able to defer the cost on their balance sheet as a regulatory asset and will need to address recovery in their next general rate case.

Appendix

Exhibit 5
Revenue decoupling insulates utilities' revenues due to volume volatility
US regulated utility companies with full or partial revenue decoupling

Issuer	Decoupling (Full/Partial)	Issuer	Decoupling (Full/Partial)
Ameren Illinois Company	Partial	North Shore Gas Company	Partial
Arizona Public Service Company	Partial	Northern Illinois Gas Company	Partial
Avista Corp.	Full/Partial	Northern Indiana Public Service Company	Partial
Baltimore Gas and Electric Company	Full	Northern States Power Company (Minnesota)	Partial
Berkshire Gas Company	Full	Northern Utilities, Inc.	Partial
Black Hills Corporation	Full	Northwest Natural Gas Company	Partial
Black Hills Power, Inc.	Partial	NSTAR Electric Company	Full
CenterPoint Energy Resources Corp.	Full/Partial	Ohio Power Company	Partial
Central Hudson Gas & Electric Corporation	Full	Oklahoma Gas & Electric Company	Partial
Central Maine Power Company	Full	Orange and Rockland Utilities, Inc.	Full
Cleco Power LLC	Partial	PacifiCorp	Partial
Connecticut Light and Power Company (The)	Full	Peoples Gas Light and Coke Company	Partial
Connecticut Natural Gas Corporation	Full	Piedmont Natural Gas Company, Inc.	Full/Partial
Consolidated Edison Company of New York, Inc.	Full	Portland General Electric Company	Partial
Consumers Energy Company	Partial	Potomac Electric Power Company	Full/Partial
Dayton Power & Light Company	Partial	Public Service Co. of North Carolina, Inc.	Full
Delmarva Power & Light Company	Full	Public Service Company of Colorado	Partial
Dominion Energy South Carolina, Inc.	Partial	Public Service Company of New Hampshire	Partial
DTE Gas Company	Partial	Public Service Company of Oklahoma	Partial
Duke Energy Indiana, LLC.	Partial	Public Service Electric and Gas Company	Partial
Duke Energy Kentucky, Inc.	Partial	Puget Sound Energy, Inc.	Partial
Duke Energy Ohio, Inc.	Partial	Qwestar Gas Company	Full/Partial
Elizabethtown Gas Company	Partial	Rochester Gas & Electric Corporation	Full
Entergy Arkansas, LLC	Partial	San Diego Gas & Electric Company	Full
Entergy Louisiana, LLC	Partial	Sierra Pacific Power Company	Partial
Entergy Mississippi, LLC	Partial	South Jersey Gas Company	Full
Entergy New Orleans, LLC	Partial	Southern California Edison Company	Full
Evergy Kansas Central, Inc.	Partial	Southern California Gas Company	Full
Evergy Metro, Inc.	Partial	Southern Connecticut Gas Company	Full
Evergy Missouri West, Inc.	Partial	Southern Indiana Gas & Electric Company	Full/Partial
Fitchburg Gas & Electric Light Company	Full	Southwest Gas Corporation	Full
Hawaiian Electric Company, Inc.	Full	Southwestern Electric Power Company	Partial
Indiana Gas Company, Inc.	Full	Spire Alabama Inc.	Partial
Indiana Michigan Power Company	Partial	Spire Missouri Inc.	Partial
Indianapolis Power & Light Company	Partial	Tucson Electric Power Company	Partial
Kentucky Power Company	Partial	Union Electric Company	Partial
Kentucky Utilities Co.	Partial	United Illuminating Company	Full
Louisville Gas & Electric Company	Partial	Unitil Energy Systems, Inc.	Partial
Mississippi Power Company	Partial	UNS Electric, Inc.	Partial
Nevada Power Company	Partial	UNS Gas, Inc.	Partial
New Jersey Natural Gas Company	Full	Washington Gas Light Company	Partial
New York State Electric and Gas Corporation	Full	Yankee Gas Services Company	Full

Source: Moody's Investors Service, S&P Global Market Intelligence

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Outlooks

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Regulated Electric and Gas Utilities – US Coronavirus recession will impact utility pension underfunding to varying degrees

US investor-owned utilities will likely face higher underfunded pension liabilities as a result of the market turmoil caused by the coronavirus outbreak. This could result in lower cash flow coverage metrics because underfunded pension liabilities are included as debt in our financial ratio calculations. The impact could be exacerbated if a company's gross pension liability is large compared to its balance sheet debt. We think the potentially most exposed utility – [Hawaiian Electric Company Inc.](#) (Baa2 positive) – could experience as much as a 155 basis point decline in its ratio of cash flow from operations before changes in working capital (CFO pre-WC) to debt if its pension assets drop 10% in value, all else being equal. Under similar hypothetical scenario analysis, other potentially exposed utilities include [Pinnacle West Capital Corporation](#) (A3 negative), [Ameren Corporation](#) (Baa1 stable), [Consolidated Edison](#) (Baa2 stable), and [Exelon Corporation](#) (Baa2 stable).

Given the impact of lockdowns and "shelter in place" mandates on economic activity, we expect US GDP to slip into a recession for full-year 2020. Treasury interest rates have already declined and could fall further during a recession. High-grade corporate bond yields have not fallen relative to the beginning of the year. But if they follow Treasury rates lower, the net present value of a pension obligation would rise.

We think the fall in the stock market will likely lower pension asset values. Most utilities' pension asset value fell by 22% to 33% in 2008, the first year of the great recession. However, the extent of the decline will depend on the composition of a pension fund's investment portfolio. For example, an investment portfolio comprised entirely of high-grade corporate bonds has no sensitivity to the stock market and, at the same time, may match well with pension liability fluctuations.

Moreover, after suffering large losses during the great recession, many utilities have since transitioned to Liability Driven Investment (LDI) strategies. Companies that have adopted LDI strategies include Hawaiian Electric Company, Pinnacle West Capital Corporation, and [DTE Energy](#) (Baa2 stable). LDI should reduce the potential for a large loss in a market downturn because it prioritizes meeting its pension obligation over maximizing return. So it may forgo some of the equity-driven upsides to reduce the potential of a shortfall in meeting its pension liabilities.

We view underfunded pension liabilities as debt. We calculate a utility's credit ratios by adding the underfunded liability on the balance sheet to debt as part of our [standard financial adjustments](#), which we make for all issuers. Pension costs, as with other prudent utility operating expenses, are a legitimate utility cost and are therefore recoverable in rates.

From an authorized cost recovery perspective, future costs that have not been explicitly allowed in rates, such as pension obligations, may still be subject to a prudence review by regulators. If the regulator deems the pension cost to be imprudent (e.g., the pension is viewed as excessively generous or the pension is mismanaged), it could still be disallowed. While we view pension costs as having low disallowance risk, future pension costs are riskier than regulatory assets that have already gone through a prudence review process.

Some jurisdictions, such as Hawaii, California, and Massachusetts, allow accrual pension expense (i.e., net period pension cost) to be tracked in a balancing account between rate cases, reducing the incentive to contribute less to the pension fund than the accrual expense. Illinois goes one step further. Investor-owned electric utilities in Illinois, including [Commonwealth Edison Company](#) (A3 stable) and [Ameren Illinois Company](#) (A3 stable), are allowed a debt return on the amount that they contribute in excess of the accrual expense.

To gauge how badly a market downturn will increase net pension liabilities, we looked at how a utility's sensitivity to market downturns would fare under two downside scenarios. In each scenario, we analyzed the potential impact of higher pension underfunding on a company's ratio of CFO pre-WC to debt. While the mix of fixed income and equity investments in a pension fund and overall pension management practices vary by company, a high-level scenario analysis provides a sense of the magnitude of the potential impact on credit quality. Each of the 15 utilities has a sensitivity of greater than 40 basis points on the CFO pre-WC to debt ratio if their pension asset value were to drop by 10% with no change in the value of their pension liabilities. The results of the two scenarios are summarized in Exhibit 1.

In the first stress scenario, we assume the projected benefit obligation (PBO) rises by 6% with no change in pension asset value. This scenario results in a CFO pre-WC to debt decline by a range of 28 to 122 basis points. We derived the 6% assumption from a sampling of the disclosure of 21 utilities, which showed that a 50 basis point fall in the discount rate translates into about a 5% to 7% rise in the net present value of their pension benefit obligation.

In the second scenario, we assume pension asset values fall by 10%, thus increasing the underfunding by the same dollar amount. In this case, CFO pre-WC to debt would fall by 43 to 155 basis points. This level of impact on credit metrics is unlikely to affect utilities' credit quality on its own but could be a contributing factor.

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Exhibit 1

Declines in CFO pre-WC to debt under two pension underfunding downside scenarios for select utilities and holding companies

For the companies below, our two downside scenarios show that the CFO pre-WC to debt ratio could drop on average by 52 basis points with a 6% increase in pension benefit obligation (PBO) and by 70 basis points with a 10% drop in pension asset value

Utility Name	2019 CFO pre-WC/debt	Stress 1: Decline in CFO/D based on 6% increase in pension liabilities	Stress 2: Decline in CFO/D based on 10% fall in fair value of pension assets
Hawaiian Electric Company, Inc.	21.4%	1.22%	1.55%
Pinnacle West Capital Corporation	20.3%	0.69%	1.04%
Ameren Corporation	21.3%	0.60%	0.90%
Consolidated Edison, Inc.	13.4%	0.54%	0.82%
Exelon Corporation	18.5%	0.57%	0.77%
Southern California Gas Company	23.6%	0.65%	0.74%
Exelon Corporation	18.5%	0.57%	0.77%
PPL Corporation	12.6%	0.39%	0.63%
Public Service Enterprise Group Incorporated	18.9%	0.44%	0.65%
Southwest Gas Holdings, Inc.	18.1%	0.44%	0.54%
Avangrid, Inc.	16.1%	0.38%	0.49%
Idaho Power Company	15.3%	0.43%	0.48%
Northwest Natural Gas Company	18.3%	0.47%	0.47%
Portland General Electric Company	19.7%	0.35%	0.44%
DTE Energy Company	16.4%	0.31%	0.44%
Southern Company	15.3%	0.28%	0.43%
Average	18.0%	0.52%	0.70%

Source: Company filings and Moody's Investors Service

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Regulated Electric and Gas Utilities – US

Utilities strengthen liquidity amid capital markets volatility

Given the recent turbulence in the capital markets environment, many US regulated utilities are looking to strengthen their liquidity resources. We view these actions as credit positive, even though they may result in a temporary increase in leverage. In this report, we summarize some of the capital market actions we've seen over the past few weeks for about 50 large utility holding companies.

During March, when the spread of coronavirus created unprecedented turbulence in the capital markets, utilities were very active, issuing more than \$31 billion in new debt. The issuances were a mix of long-term debt and new term loans. The companies were able to either refinance their upcoming maturing debt earlier or move their financing up to prefund upcoming needs. For example, [Consumers Energy Company](#) (Aa3 secured stable), a utility subsidiary of [CMS Energy Corporation](#) (Baa1 stable), issued \$575 million of first mortgage bonds to prefund its capital investment needs.

In 2020, we estimate about \$40 billion of long-term debt maturities. The top five utility families with the largest maturities in 2020 are [Exelon Corporation](#) (Baa2 stable) with \$4.9 billion, [Duke Energy Corporation](#) (Baa1 stable) with \$3.3 billion, [Dominion Energy Inc.](#) (Baa2 stable) at \$3.2 billion, [The Southern Company](#) (Baa2 stable) with \$3.2 billion and [Berkshire Hathaway Energy Company](#) (A3 stable) with \$2.5 billion. Beginning in early January, even before market uncertainty increased, several utilities took advantage of market conditions to address the expected long-term debt maturity. For example, [The Southern Company](#) (Southern, Baa2 stable) issued \$1 billion of junior subordinated notes. In addition, many utilities were able to take advantage of lower interest rates. For example, [Florida Power & Light Company](#) (FPL, A1 stable) issued \$1.1 billion of five-year first mortgage bonds at 2.85% on 24 March.

This report was republished on 7 April 2020 to correct a debt issuance figure for American Water Works Company in Exhibit 6

Exhibit 1

Utility holding companies face significant maturities in 2020 - over \$25 billion for top 10
Current portion of long-term debt at 31 December 2019 (in millions)

Company	LT rating and outlook	Current portion of long-term debt
Exelon Corporation	Baa2 stable	\$4,935
Duke Energy Corporation	Baa1 stable	\$3,349
Dominion Energy, Inc.	Baa2 stable	\$3,221
Southern Company (The)	Baa2 stable	\$3,218
Berkshire Hathaway Energy Company	A3 stable	\$2,539
NextEra Energy, Inc.	Baa1 stable	\$2,124
American Electric Power Company, Inc.	Baa1 negative	\$1,890
Sempra Energy / Sempra Global	Baa1 negative	\$1,578
Consolidated Edison, Inc.	Baa2 stable	\$1,511*
Public Service Enterprise Group Incorporated	Baa1 stable	\$1,398

Moody's adjusted current portion of long-term debt at 31 December 2019.

*ConEd's maturities include \$1.0 billion of non-recourse solar project debt associated with Pacific Gas & Electric contracts, \$150 million amortization of other non-recourse project debt and \$350 million of utility maturities.

Sources: Company filings and Moody's Investors Service

As a defensive asset class, utilities have alternative ways to strengthen liquidity

With wider spreads and less liquidity in the commercial paper market, utilities are staying nimble to strengthen their liquidity through other measures. We saw an increase in short-term bank term loan issuance during the month of March. During the three weeks ended 27 March, about \$9.4 billion in term loans were issued. Some utilities added credit facilities with the flexibility to draw down over a short-term period. For example, Duke added a \$1.5 billion 364-day term loan facility with an accordion feature to increase the size of the facility up to \$2 billion. The company will be able to manage the near-term commercial paper maturities with these proceeds. Overall, utilities had about 80% of their aggregated credit facilities available at the end of 2019 in general, providing a healthy liquidity base in the first quarter of 2020.

Exhibit 2

Short-term bank term loan issuance is up since early March
Over \$9 billion issuance during March 2020 (in millions)

Company	Long-term rating and outlook	Short-term rating	Short-term term loan issuance
Edison International	Baa3 stable	P-3	\$2,075*
Sempra Energy / Sempra Global	Baa1 negative	P-2	\$1,800
Duke Energy Corporation	Baa1 stable	P-2	\$1,500
American Electric Power Company, Inc.	Baa1 negative	P-2	\$1,000
American Water Works Company, Inc.	Baa1 stable	P-2**	\$750
Xcel Energy Inc.	Baa1 stable	P-2	\$700
ITC Holdings Corp.	Baa2 stable	P-2	\$400
PPL Corporation	Baa2 stable	P-2**	\$400
Oncor Electric Delivery Company LLC	A2 stable	P-2	\$350
WEC Energy Group, Inc.	Baa1 stable	P-2	\$340
Spire Inc.	Baa2 stable	P-2	\$150

*Includes \$800 million of credit facility capacity at Edison and Southern California Edison Company (Baa2 stable) added in March 2020 that matures in March 2021.

**Short-term ratings for guaranteed financing entities: American Water Capital Corp (Baa1 stable) and PPL Capital Funding Inc. (Baa2 stable).

Sources: Company filings and Moody's Investors Service

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Exhibit 3

Ample revolver availability provides healthy liquidity base as of 31 December 2019
US utility holding companies' consolidated credit facilities and available amounts (in millions)

Company	Long-term rating and outlook	Short-term rating	Revolver amount	Used amount	Revolver available
NextEra Energy, Inc.	Baa1 stable	P-2*	\$10,895	\$3,131	\$7,764
Berkshire Hathaway Energy Company	A3 stable	P-2	\$9,412	\$3,843	\$5,569
Exelon Corporation	Baa2 stable	P-2	\$9,000	\$1,648	\$7,352
Duke Energy Corporation	Baa1 stable	P-2	\$9,000	\$3,668	\$5,332
Sempra Energy / Sempra Global	Baa1 negative	P-2	\$8,565	\$3,508	\$5,057
Southern Company (The)	Baa2 stable	P-2	\$7,608	\$32	\$7,576
Dominion Energy, Inc.	Baa2 stable	P-2	\$6,000	\$925	\$5,075
Fortis Inc.	Baa3 stable	NR	\$5,590	\$1,266	\$4,324
Edison International	Baa3 stable	P-3	\$4,500	\$702	\$3,798
FirstEnergy Corp.	Baa3 stable	NR	\$3,500	\$4	\$3,496

NR = Not rated

Used amount includes commercial paper borrowing.

*Short-term rating for NextEra Energy's guaranteed financing entity, NextEra Energy Capital Holdings, Inc. (Baa1 stable).

Source: Moody's Investors Service

Utilities maintain other options to further improve liquidity if market volatility persists

Based on 2019 year-end financial results, utilities had about \$2 billion in aggregate funding needs. The aggregate sources of cash totaled around \$241 billion, while the aggregate uses of cash was estimated to be about \$243 billion. Additional sources of cash from the financing activities in March which resulted in about \$31 billion issuance alone more than offset this estimated funding needs.

Exhibit 4

Regulated utility sector improved its liquidity over the last three weeks
Aggregated liquidity sources and uses of 49 US regulated utility holding companies (in billions)

Total 2019 sources	Total 2019 uses	Funding (needs)/surplus
\$241	\$(243)	\$(2)

Sources = cash & cash equivalents + revolver available + FFO

Uses = short-term debt + current portion of long-term debt + capital expenditures + dividends

Source: Moody's Investors Service

Our observation is based on the utility holding companies' 2019 year-end funds from operations (FFO), as well as dividends and capital investments. If FFO were to decline due to lower power demand, utilities would still be able to mitigate their cash uses by reducing capital investments or operating expenses. Suspending or reducing dividends would also be an option as a last resort.

Using 2019 actual aggregated FFO as a starting point for the sources of cash, we estimate that funding needs will increase by about \$6 billion for every 5% reduction in FFO. Utilities are also able to moderate or defer their investments as well as operating expenses to offset the reduction in power demand. The outcome of these scenarios would change if we were also to assume a reduction in capital investment in 2020. For example, if we assume a 5% reduction in capital investment in addition to the 5% FFO reduction, the group would have approximately \$1 billion of funding needs rather than \$7 billion. With the additional issuance of \$31 billion in March alone, utilities will have the cushion to withstand a temporary reduction in power demand. Exhibit 5 summarizes the sensitivity scenarios and outcome.

Exhibit 5

Liquidity would improve further if cash uses were reduced to counter FFO reduction

US utility holding companies' liquidity sensitivity scenarios based on changes in funds from operations (FFO) (in billions)

Scenario	Total 2019 sources	Total 2019 uses	Funding (needs)	Change in funding (needs)/surplus versus 2019	Issuances in March 2020	Funding (needs)/surplus including March 2020 issuances
5% FFO reduction	\$ 236	\$ (243)	\$ (7)	\$ (5)	\$ 31	\$ 24
10% FFO reduction	\$ 230	\$ (243)	\$ (13)	\$ (11)	\$ 31	\$ 18
5% FFO and capex reduction	\$ 236	\$ (236)	\$ (1)	\$ 1	\$ 31	\$ 30
10% FFO and capex reduction	\$ 230	\$ (229)	\$ -	\$ 2	\$ 31	\$ 31

Sources = cash & cash equivalents + revolver available + FFO

Uses = short-term debt + current portion of long-term debt + capital expenditures + dividends

Issuances in March 2020 = long-term debt issued + short-term term loans issued

Source: Moody's Investors Service

Appendix

Exhibit 6

US utility holding companies' consolidated long-term debt issuance and short-term term loan issuance during March 2020

In millions

Company	Long-term rating and outlook	Short-term rating	Long-term debt issuance during March 2020	Short-term term loan issuance during March 2020
Berkshire Hathaway Energy Company	A3 stable	P-2	\$3,250	-
Exelon Corporation	Baa2 stable	P-2	\$2,000	-
Dominion Energy, Inc.	Baa2 stable	P-2	\$2,250	-
Edison International	Baa3 stable	P-3	\$2,100	\$2,075*
Consolidated Edison, Inc.	Baa2 stable	P-2	\$1,600	-
NextEra Energy, Inc.	Baa1 stable	P-2**	\$1,275	-
Ameren Corporation	Baa1 stable	P-2	\$1,265	-
American Electric Power Company, Inc.	Baa1 negative	P-2	\$1,675	\$1,000
Entergy Corporation	Baa2 stable	P-2	\$1,065	-
Oncor Electric Delivery Company LLC	A2 stable	P-2	\$800	\$350
Xcel Energy Inc.	Baa1 stable	P-2	\$600	\$700
DTE Energy Company	Baa2 stable	P-2	\$600	-
CMS Energy Corporation	Baa1 stable	NR	\$575	-
Duke Energy Corporation	Baa1 stable	P-2	\$550	\$1,500
Sempra Energy / Sempra Global	Baa1 negative	P-2	\$400	\$1,800
Eversource Energy	Baa1 stable	P-2	\$400	-
Alliant Energy Corporation	Baa2 stable	P-2	\$350	-
OGE Energy Corp.	Baa1 stable	P-2	\$300	-
IDACORP, Inc.	Baa1 stable	P-2	\$230	-
Portland General Electric Company	A3 stable	P-2	\$130	-
American Water Works Company, Inc.	Baa1 stable	P-2**	-	\$750
ITC Holdings Corp.	Baa2 stable	P-2	-	\$400
PPL Corporation	Baa2 stable	P-2**	-	\$400
WEC Energy Group, Inc.	Baa1 stable	P-2	-	\$340
Spire Inc.	Baa2 stable	P-2	-	\$150

NR = Not rated

*Includes \$800 million of credit facility capacity at Edison and Southern California Edison Company (Baa2 stable) added in March 2020 that matures in March 2021.

**Short-term ratings for guaranteed financing entities: NextEra Energy Capital Holdings, Inc. (Baa1 stable), American Water Capital Corp (Baa1 stable) and PPL Capital Funding Inc. (Baa2 stable).

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Regulated Electric Utilities – US

Sales mix, decoupling and O&M savings support credit quality amid lower volumes

- » **Decline in electricity demand to vary by customer mix.** Customer mix will be a key determinant of the impact of lower demand on a regulated utility's revenue and funds from operations (FFO). Many businesses closed or curtailed operations in the wake of the initial coronavirus outbreak, sparking a sharp decline in commercial and industrial electricity sales beginning in late March. By contrast, residential electric sales volumes have increased because of the large number of people who are working or studying from home and higher-than-normal summer temperatures.
- » **Growing demand from residential customers will help offset declines in total revenue.** Higher residential volumes will mitigate the loss of revenues and cash flow from commercial and industrial customers as residential sales generate a higher gross margin per kilowatt-hour. The combination of increased residential volume and higher earned margins will mitigate the financial impact of the 2% decline in total volume. Projected declines in revenue and cash flow will have a minor impact on FFO-to-debt ratios.
- » **Commercial customers will account for the steepest decline in electricity demand.** The drop in electricity demand from commercial customers will exceed declines for other customer classes in 2020, leading to a decline in total demand. Spurred by social distancing and other measures to protect public health and safety, power consumption has plunged for major commercial customer categories.
- » **Ratcheting demand charges limit revenue decline from falling industrial volume.** The loss of load among industrial customers is mitigated by a ratcheting demand charge on their electricity bills, which on average accounts for 55% of an electric utility's total industrial revenues, leaving 45% of revenues derived from actual energy consumed. These charges mitigate the revenue impact on lost volumes from industrial customers because they provide an annual fixed revenue stream.
- » **Decoupling mechanisms and formula rates will recover lost 2020 revenues.** Eleven US states and the District of Columbia have mechanisms that decouple authorized revenue from the volume of electricity sold through a true-up of collected revenues to authorized revenues, ensuring an adequate rate of return. In addition, many companies own electric transmission assets regulated by the Federal Energy Regulatory Commission (FERC) under which formula rates are used to calculate annually authorized revenue based on prudently incurred capital and operating costs and a return on rate base. Reductions in administrative and operating and maintenance (O&M) costs are also buffering the cash flow impact of lower electricity sales.

Decline in electricity demand to vary by customer mix

Declining electricity demand amid the coronavirus-fueled US recession has reduced total electricity sales volume. Customer mix will be a key determinant of the impact of lower demand on a regulated utility's revenue and funds from operations (FFO), given the sharp decline in electricity sales to commercial and industrial customers and higher demand from residential customers.

To assess the impact of declining electricity demand on the US regulated utility sector, we identified utilities that generate more than 80% of their revenue from electricity, resulting in a cohort of 59 utility operating companies (see Exhibit 13 in the appendix). Based on our projections of a 8% decline in commercial electricity demand, a 6% decline in industrial demand and a 5% increase in residential demand, total annual electricity demand in our cohort is on track for a 2% decline year-over-year in 2020. As shown in Exhibit 1, we expect the cohort to post an average decline in FFO-to-debt of about 37 basis points (bps) and an average decline in FFO-to-electric revenue of 24 bps.

Exhibit 1

Southern California Edison, NSTAR and PacifiCorp would be hit hardest

Top 25 US regulated electric utilities with the highest basis point declines in FFO-to-debt in 2020 based on our projections

Company	Rating	Outlook	2019 FFO	2020F FFO	2019 FFO / Electric Revenue	2020 FFO / Electric Revenue	Change (Bps)	2019 FFO / Debt	2020F FFO / Debt	Change (Bps)
Southern California Edison Company ^[1]	Baa2	Stable	3,171	3,012	27.3%	26.6%	(70.6)	18.3%	17.4%	(91.9)
NSTAR Electric Company*	A1	Stable	832	803	29.2%	28.7%	(47.9)	23.3%	22.5%	(80.1)
PacifiCorp	A3	Stable	1,454	1,399	32.1%	31.6%	(51.4)	18.2%	17.5%	(68.3)
Evergy Metro, Inc.	Baa1	Stable	583	562	35.6%	35.2%	(45.1)	16.9%	16.3%	(59.4)
Georgia Power Company	Baa1	Stable	2,834	2,752	37.4%	37.1%	(35.3)	20.5%	19.9%	(59.3)
Oklahoma Gas & Electric Company	A3	Stable	729	710	36.4%	36.0%	(34.0)	21.8%	21.2%	(59.1)
Potomac Electric Power Company*	Baa1	Stable	676	659	33.9%	33.6%	(32.2)	21.9%	21.4%	(53.5)
Virginia Electric and Power Company	A2	Stable	2,989	2,916	38.7%	38.4%	(28.4)	21.3%	20.8%	(51.9)
Entergy Louisiana, LLC	Baa1	Stable	1,548	1,504	43.4%	43.1%	(27.1)	19.4%	18.9%	(56.1)
Duke Energy Indiana, LLC.	A2	Stable	1,095	1,071	42.0%	41.8%	(21.9)	24.3%	23.8%	(52.7)
Union Electric Company	Baa1	Stable	1,040	1,017	33.5%	33.3%	(29.0)	22.1%	21.6%	(48.3)
Wisconsin Electric Power Company ^[3]	A2	Stable	609	580	21.4%	20.8%	(62.9)	10.5%	10.0%	(49.4)
Alabama Power Company	A1	Stable	2,167	2,126	40.7%	40.5%	(20.4)	24.5%	24.0%	(46.5)
Duke Energy Carolinas, LLC	A1	Stable	3,218	3,168	49.8%	49.7%	(7.5)	26.5%	26.1%	(41.5)
Evergy Kansas Central, Inc.	Baa1	Stable	831	810	43.6%	43.4%	(22.9)	17.5%	17.0%	(43.5)
DTE Electric Company	A2	Stable	1,824	1,793	37.4%	37.2%	(20.9)	21.5%	21.1%	(37.0)
Dominion Energy South Carolina, Inc. ^[2]	Baa2	Stable	914	898	40.5%	40.3%	(19.1)	21.6%	21.2%	(38.1)
Arizona Public Service Company	A2	Negative	1,424	1,405	41.4%	41.3%	(13.2)	25.5%	25.2%	(32.5)
Portland General Electric Company	A3	Stable	698	688	40.5%	40.3%	(15.2)	23.1%	22.8%	(32.5)
Tampa Electric Company	A3	Positive	754	745	38.4%	38.3%	(14.0)	22.6%	22.4%	(27.2)
Appalachian Power Company	Baa1	Stable	740	734	29.4%	29.3%	(10.7)	15.3%	15.1%	(11.9)
Florida Power & Light Company	A1	Stable	5,311	5,298	50.3%	50.3%	(1.0)	33.6%	33.5%	(8.0)
Duke Energy Florida, LLC.	A3	Stable	1,748	1,749	39.6%	39.6%	0.9	20.5%	20.5%	1.6
Commonwealth Edison Company*	A3	Stable	2,098	2,099	42.7%	42.7%	0.5	20.2%	20.2%	1.2
Connecticut Light and Power Company (The)*	A3	Stable	810	817	28.4%	28.5%	10.9	20.3%	20.5%	16.2
Weighted Average of 59 Companies**							(23.5)			(37.2)

[1] \$2.4 billion wildfire fund was incorporated in 2019 YE funds from operations

[2] \$633 mm of revenue was added back due to charges for refunds of amounts previously collected from retail electric customers for the NND Project, certain regulatory assets and utility plant for which DESC committed to forgo recovery, litigation and a voluntary retirement program.

[3] Artificially low credit metrics; these ratios do not reflect the adjustments related to the Power the Future (PTF) lease arrangements

*Fully decoupled

**Weighted average based on debt outstanding

Note the top 25 companies are based on the largest utilities by debt that are >80% electric revenue.

Sources: Moody's Investors Service and US Energy Information Administration

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How we calculated the potential credit impact of a decline in total electricity demand

Our projections in Exhibit 1 take into consideration our forecast for a 5.7% contraction in US GDP during 2020 and the US Energy Information Administration's (EIA) 9 September projection of a 2.4% decline in electricity volumes this year. The EIA forecast was comprised of an increase in residential volumes of 3.5%, a decline of 6.4% for commercial volumes and a decline of 6% in industrial volumes. Moreover, we incorporated the companies' volume expectations from recent earnings releases and conversations with management on volumes by customer class to arrive at our 2020 estimated year-over-year change in kilowatt-hour (kWh) electricity volumes.

Our revenue sensitivity analysis is based on those companies' 2018 Form 1 filings with FERC, which provide a breakdown of retail electric revenues and volumes by customer class. We calculated a 2018 rate per kWh by customer class and used EIA data to calculate the change in rates and volumes by customer class from 2018 to 2019 to estimate 2019 electric revenues and volumes. Our company sample consists of 59 companies where their retail electric revenues comprised 80% or more of total revenues. The Top 25 companies listed in the exhibits includes those with the highest level of debt outstanding within the company sample.

Our 2020 revenue projections are based on our projected change in kWh volume scenarios by customer class and adjusting 2019 rates based on EIA's projected percentage change in 2020 rates. Projected 2020 industrial revenues incorporate fixed demand charges, which accounted for an average of 55% of an industrial customer's annual bill. To calculate our FFO forecasts for 2020, we applied a 55% FFO-to-revenue margin to the change in revenues (2020P vs. 2019E). We believe this FFO margin, applied to the 2020 change in revenues, accounts for the lower fuel and power costs due to the decline in volumes and a cost structure that is largely fixed, but reflects reductions being achieved in selling, general and administrative (SG&A) and O&M costs. We believe this concurs with most companies' affirmation or manageable reduction of their 2020 earnings guidance. We also held debt flat at 2019 levels in our projections for 2020 FFO-to-debt to best isolate the impact of lower volumes.

Growing demand from residential customers will help offset declines in total revenue

Residential electricity sales volumes have increased this year because of the large number of people who are working or studying from home and unusually hot summer weather in some of the most populous regions of the country. Higher residential volumes will mitigate the loss of revenues and cash flow from commercial and industrial customers as residential sales generate a higher gross margin per kWh. The larger the proportion of residential customers, the greater the buffer a utility will have from revenue declines in other customer classes, thanks to rising demand and rates that are typically higher than for other customers. An unusually hot summer in many parts of the country resulted in even greater usage from residential customers and many continue to work from home and schooling from home.

Residential customers contribute more to gross margin than commercial and industrial customers on a per kWh basis, as shown in Exhibit 2. The exhibit shows the relative contribution of each customer class at an average gross margin of 65%.

Exhibit 2

Residential customers are more profitable than commercial or industrial customers

Average rate per kWh and gross margin contribution of each customer class served by US regulated utilities

	Residential	Commercial	Industrial
Avg 2020 rate per/ kWh	\$124	\$84	\$55
Demand Charges = 55% of revs			\$30
65% Gross Margin/KWh sold	\$81	\$55	\$46
Percent contribution to gross margin per Kwh	45%	30%	25%

Source: Moody's Investors Service

Regulators allow utilities to charge residential customers the highest rates per kWh of all customer classes to cover the cost of the infrastructure required to serve a large number of low-voltage electricity consumers, which results in significant operating leverage. The higher prices paid by residential customers result in a higher gross margin contribution per kWh. In addition, the daily load shape is changing, resulting in lower peak demand levels across all regional transmission organizations as commercial business is curtailed and

residential demand steadies at a higher level. This should result in lower overall power costs, further shielding utilities from the negative impact on gross margin due to declining demand from other customers.

For companies with the highest proportion of residential customers (50% or more), we expect total electric revenue to be relatively flat to down only about 1% at companies such as [Connecticut Light & Power](#) (A3 stable), (A3 stable) and [Florida Power & Light Company](#) (A1 stable). While companies in the Southwest, such as [Arizona Public Service Company](#) (A2 negative), experienced very high summer load due to weather, further mitigating overall lower demand.

Exhibit 3

Utilities with the highest proportion of residential customers will post the smallest declines in total revenue
Regulated US electric utilities that derive the highest percentage of revenue from residential customers

Company	Customer Mix (%)	2019 Residential Electric Revenue	2019 Total Electric Revenue	2020F Residential Electric Revenue	2020F Total Electric Revenue	2020F Residential Rev /Total Rev	2019 vs. 2020F Total Rev Change
Connecticut Light and Power Company (The)*	63%	\$ 1,810	\$ 2,857	\$ 1,907	\$ 2,868	66%	0.4%
Duke Energy Florida, LLC.	61%	\$ 2,683	\$ 4,411	\$ 2,828	\$ 4,414	64%	0.1%
Florida Power & Light Company	60%	\$ 6,337	\$ 10,554	\$ 6,680	\$ 10,531	63%	(0.2%)
Commonwealth Edison Company*	59%	\$ 2,911	\$ 4,918	\$ 3,068	\$ 4,920	62%	0.0%
Tampa Electric Company	54%	\$ 1,056	\$ 1,962	\$ 1,113	\$ 1,945	57%	(0.8%)
Arizona Public Service Company	54%	\$ 1,848	\$ 3,436	\$ 1,948	\$ 3,403	57%	(1.0%)
Appalachian Power Company	52%	\$ 1,314	\$ 2,516	\$ 1,385	\$ 2,505	55%	(0.4%)
Potomac Electric Power Company*	51%	\$ 1,019	\$ 1,993	\$ 1,074	\$ 1,963	55%	(1.5%)
Portland General Electric Company	51%	\$ 881	\$ 1,724	\$ 929	\$ 1,706	54%	(1.0%)
Union Electric Company	50%	\$ 1,544	\$ 3,100	\$ 1,628	\$ 3,059	53%	(1.3%)
DTE Electric Company	50%	\$ 2,427	\$ 4,882	\$ 2,558	\$ 4,825	53%	(1.2%)
NSTAR Electric Company*	48%	\$ 1,369	\$ 2,850	\$ 1,443	\$ 2,798	52%	(1.8%)
Virginia Electric and Power Company	48%	\$ 3,707	\$ 7,726	\$ 3,907	\$ 7,593	51%	(1.7%)
Dominion Energy South Carolina, Inc.	48%	\$ 1,078	\$ 2,255	\$ 1,136	\$ 2,226	51%	(1.3%)
Duke Energy Carolinas, LLC	47%	\$ 3,014	\$ 6,465	\$ 3,177	\$ 6,373	50%	(1.4%)
Oklahoma Gas & Electric Company	44%	\$ 892	\$ 2,006	\$ 940	\$ 1,970	48%	(1.8%)
Alabama Power Company	44%	\$ 2,362	\$ 5,328	\$ 2,489	\$ 5,254	47%	(1.4%)
Eversys Metro, Inc.	44%	\$ 712	\$ 1,635	\$ 751	\$ 1,598	47%	(2.3%)
Eversys Kansas Central, Inc.	42%	\$ 794	\$ 1,904	\$ 837	\$ 1,867	45%	(2.0%)
Georgia Power Company	43%	\$ 3,262	\$ 7,571	\$ 3,438	\$ 7,422	46%	(2.0%)
Southern California Edison Company*	43%	\$ 4,971	\$ 11,625	\$ 5,239	\$ 11,337	46%	(2.5%)
Wisconsin Electric Power Company	42%	\$ 1,208	\$ 2,842	\$ 1,273	\$ 2,790	46%	(1.8%)
Duke Energy Indiana, LLC.	42%	\$ 1,089	\$ 2,606	\$ 1,148	\$ 2,562	45%	(1.7%)
PacifiCorp	38%	\$ 1,725	\$ 4,532	\$ 1,818	\$ 4,433	41%	(2.2%)
Entergy Louisiana, LLC	34%	\$ 1,223	\$ 3,570	\$ 1,289	\$ 3,489	37%	(2.3%)

*Fully decoupled

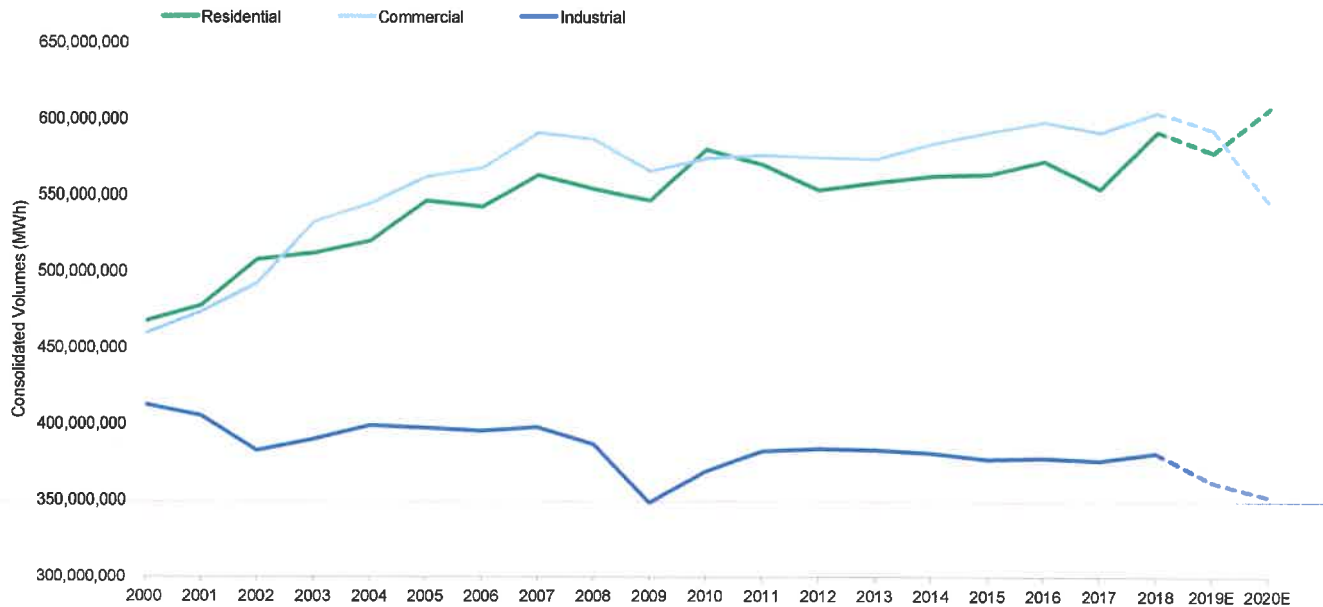
Sources: Moody's Investors Service and US Energy Information Administration

Commercial customers will account for the steepest decline in electricity demand

The drop in electricity demand from commercial customers will exceed declines for other customer classes in 2020, leading to a decline in total demand. Spurred by social distancing and other measures to protect public health and safety, power consumption has plunged for major commercial customer categories, including office buildings, large retailers, restaurants and movie theaters.

The decline in demand from commercial customers represents a sharp deviation from consumption trends over the past 20 years, as shown in Exhibit 4. During this period, commercial volumes drove growth in total demand, while industrial demand steadily declined and residential demand flattened during the past decade, largely because of improved energy efficiency.

Exhibit 4
Commercial customers had driven growth in total electricity demand
 Actual and estimated change in US electricity volumes by customer class



Sources: Moody's Investors Service, Federal Energy Regulatory Commission Form 1 data via S&P Global Market Intelligence and US Energy Information Administration

In Exhibit 5, we show the top 25 utilities with the highest proportion of commercial revenues. We expect revenue to decline 1.5% to 2.5% at companies that derive the highest proportion of their revenues from commercial customers, such as [Southern California Edison Company](#) (Baa2 stable), [Eversource Energy](#) (Baa1 stable) and [NSTAR Electric Company](#) (A1 stable). Southern California Edison, NSTAR and Potomac Electric Power have rate constructs that include full revenue decoupling and are expected to recover authorized revenues through relevant regulatory mechanisms in future filings. (See Exhibit 10 in the appendix for a list of companies with full decoupling mechanisms.)

Exhibit 5

The greater the reliance on commercial customers, the steeper the decline in total revenue
Regulated US electric utilities that derive the highest percentage of revenue from commercial customers

Company	Customer Mix (%)	2019 Commercial Electric Revenue	2019 Total Electric Revenue	2020F Commercial Electric Revenue	2020F Total Electric Revenue	2020F Commercial Rev / Total Rev	2019 vs. 2020F Total Rev Change
Southern California Edison Company*	51%	\$ 5,927	\$ 11,625	\$ 5,402	\$ 11,337	48%	(2.5%)
Energy Metro, Inc.	48%	\$ 786	\$ 1,635	\$ 716	\$ 1,598	45%	(2.3%)
NSTAR Electric Company*	48%	\$ 1,361	\$ 2,850	\$ 1,240	\$ 2,798	44%	(1.8%)
Potomac Electric Power Company*	47%	\$ 946	\$ 1,993	\$ 862	\$ 1,963	44%	(1.5%)
Virginia Electric and Power Company	45%	\$ 3,488	\$ 7,726	\$ 3,179	\$ 7,593	42%	(1.7%)
Arizona Public Service Company	41%	\$ 1,412	\$ 3,436	\$ 1,287	\$ 3,403	38%	(1.0%)
Union Electric Company	41%	\$ 1,262	\$ 3,100	\$ 1,150	\$ 3,059	38%	(1.3%)
Georgia Power Company	40%	\$ 3,041	\$ 7,571	\$ 2,771	\$ 7,422	37%	(2.0%)
Oklahoma Gas & Electric Company	39%	\$ 785	\$ 2,006	\$ 716	\$ 1,970	36%	(1.8%)
Tampa Electric Company	38%	\$ 754	\$ 1,962	\$ 687	\$ 1,945	35%	(0.8%)
Florida Power & Light Company	38%	\$ 4,030	\$ 10,554	\$ 3,673	\$ 10,531	35%	(0.2%)
DTE Electric Company	37%	\$ 1,796	\$ 4,882	\$ 1,636	\$ 4,825	34%	(1.2%)
Portland General Electric Company	37%	\$ 635	\$ 1,724	\$ 579	\$ 1,706	34%	(1.0%)
Energy Kansas Central, Inc.	37%	\$ 709	\$ 1,904	\$ 646	\$ 1,867	35%	(2.0%)
Wisconsin Electric Power Company	36%	\$ 1,019	\$ 2,842	\$ 929	\$ 2,790	33%	(1.8%)
Duke Energy Carolinas, LLC	36%	\$ 2,299	\$ 6,465	\$ 2,095	\$ 6,373	33%	(1.4%)
Dominion Energy South Carolina, Inc.	36%	\$ 801	\$ 2,255	\$ 730	\$ 2,226	33%	(1.3%)
PacifiCorp	34%	\$ 1,546	\$ 4,532	\$ 1,409	\$ 4,433	32%	(2.2%)
Duke Energy Florida, LLC.	34%	\$ 1,486	\$ 4,411	\$ 1,355	\$ 4,414	31%	0.1%
Connecticut Light and Power Company (The)*	31%	\$ 896	\$ 2,857	\$ 816	\$ 2,868	28%	0.4%
Commonwealth Edison Company*	30%	\$ 1,495	\$ 4,918	\$ 1,363	\$ 4,920	28%	0.0%
Duke Energy Indiana, LLC.	30%	\$ 789	\$ 2,606	\$ 719	\$ 2,562	28%	(1.7%)
Alabama Power Company	30%	\$ 1,604	\$ 5,328	\$ 1,462	\$ 5,254	28%	(1.4%)
Entergy Louisiana, LLC	28%	\$ 982	\$ 3,570	\$ 895	\$ 3,489	26%	(2.3%)
Appalachian Power Company	25%	\$ 639	\$ 2,516	\$ 583	\$ 2,505	23%	(0.4%)

*Fully decoupled

Sources: Moody's Investors Service and US Energy Information Administration

Ratcheting demand charges limit revenue decline from falling industrial volume

The loss of load among industrial customers is mitigated by a ratcheting demand charge on their electricity bills, which on average accounts for 55% of an electric utility's total industrial revenues, with only 45% of revenues derived from actual energy consumed. These charges offset lost volumes from industrial customers because they provide an annual fixed revenue stream to serve these large-volume customers. The demand charge is typically based on a kWh rate and the prior 12-month period's peak usage to ensure that a utility can recover the fixed costs to serve the peak demand of an industrial customer.

The volume portion of a demand charge is typically increased the month after an industrial customer reaches a new 12-month peak level of usage. But during periods when usage declines, the volume portion of a demand charge is generally not reduced until 12 months after a new lower peak level of usage has been set. The kWh rate portion of a demand charge is only reset in a rate proceeding; we expect a general [delay in finalizing rate cases](#) in the near term.

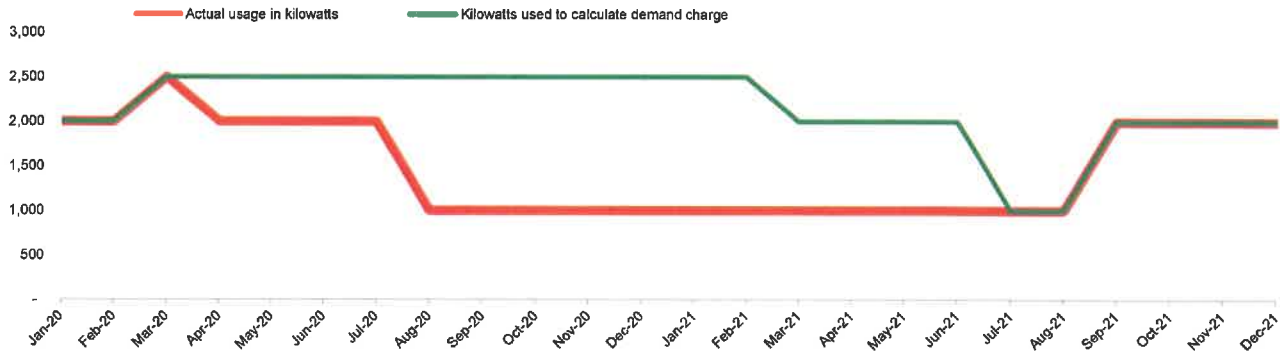
In Exhibit 6, we illustrate an example of an industrial customer's 24-month billing based on peak usage of 2,000 kilowatts, including a demand charge at \$9/kilowatt and an actual energy charge of three cents per kWh. The combination of demand charge revenue and actual energy consumption revenue for industrial customers results in the lowest rate per kWh of electricity among all customer

classes. Exhibit 6 illustrates that demand charges will increase the month a new peak level is set, but not decline until 12 months after a new lowered peak load is exhibited.

Exhibit 6

If an industrial customer's peak power usage falls, demand charges do not decline until 12 months later

Actual usage in kilowatt-hours versus kilowatts used to calculate volume portion of a US regulated utility's demand charge



Source: Moody's Investors Service

While this example shows volumes increasing and decreasing over a short period of time, industrial customers are sophisticated electricity consumers and avoid dramatic load changes and any new peak usage when possible. While industrial consumers are sophisticated, the ratcheting demand price structure typically ensures that a utility earns an appropriate return on the capital employed to serve these large-volume customers.

Industrial customers represent the lowest revenue contributor to overall electric utility revenue. Moreover, their power consumption among industrial customers has been declining due to improving energy efficiencies and the shrinking size of the US industrial base. However, the industrial class customer's contribution to a utility's gross margin remains comparable to that of a commercial customer thanks to the ratcheting charges. We expect revenue to decline 1% to 2% at companies with high industrial exposure, such as [Entergy Louisiana LLC](#) (Baa1 stable), [Duke Energy Indiana LCC](#) (A2 stable) and [PacifiCorp](#). (A3 stable).

Exhibit 7

Even as industrial consumption drops, demand charges keep revenue stable
Regulated US electric utilities that derive the highest percentage of revenue from industrial customers

Company	Customer Mix (%)	2019 Industrial Electric Revenue	2019 Total Electric Revenue	2020F Industrial Electric Revenue	2020F Total Electric Revenue	2020F Industrial Rev / Total Rev	2019 vs. 2020F Total Rev Change
Entergy Louisiana, LLC	38%	\$ 1,365	\$ 3,570	\$ 1,305	\$ 3,489	37%	(2.3%)
Duke Energy Indiana, LLC.	28%	\$ 727	\$ 2,606	\$ 695	\$ 2,562	27%	(1.7%)
PacifiCorp	28%	\$ 1,261	\$ 4,532	\$ 1,206	\$ 4,433	27%	(2.2%)
Alabama Power Company	26%	\$ 1,362	\$ 5,328	\$ 1,302	\$ 5,254	25%	(1.4%)
Appalachian Power Company	22%	\$ 562	\$ 2,516	\$ 537	\$ 2,505	21%	(0.4%)
Wisconsin Electric Power Company	22%	\$ 616	\$ 2,842	\$ 589	\$ 2,790	21%	(1.8%)
Evergy Kansas Central, Inc.	21%	\$ 401	\$ 1,904	\$ 384	\$ 1,867	21%	(2.0%)
Duke Energy Carolinas, LLC	18%	\$ 1,151	\$ 6,465	\$ 1,100	\$ 6,373	17%	(1.4%)
Georgia Power Company	17%	\$ 1,269	\$ 7,571	\$ 1,213	\$ 7,422	16%	(2.0%)
Dominion Energy South Carolina, Inc.	17%	\$ 376	\$ 2,255	\$ 359	\$ 2,226	16%	(1.3%)
Oklahoma Gas & Electric Company	16%	\$ 328	\$ 2,006	\$ 314	\$ 1,970	16%	(1.8%)
DTE Electric Company	14%	\$ 659	\$ 4,882	\$ 630	\$ 4,825	13%	(1.2%)
Portland General Electric Company	12%	\$ 207	\$ 1,724	\$ 198	\$ 1,706	12%	(1.0%)
Commonwealth Edison Company*	10%	\$ 512	\$ 4,918	\$ 489	\$ 4,920	10%	0.0%
Union Electric Company	9%	\$ 294	\$ 3,100	\$ 281	\$ 3,059	9%	(1.3%)
Evergy Metro, Inc.	8%	\$ 137	\$ 1,635	\$ 131	\$ 1,598	8%	(2.3%)
Tampa Electric Company	8%	\$ 151	\$ 1,962	\$ 145	\$ 1,945	7%	(0.8%)
Virginia Electric and Power Company	7%	\$ 531	\$ 7,726	\$ 508	\$ 7,593	7%	(1.7%)
Southern California Edison Company*	6%	\$ 728	\$ 11,625	\$ 696	\$ 11,337	6%	(2.5%)
Duke Energy Florida, LLC.	5%	\$ 242	\$ 4,411	\$ 231	\$ 4,414	5%	0.1%
Connecticut Light and Power Company (The)*	5%	\$ 151	\$ 2,857	\$ 145	\$ 2,868	5%	0.4%
Arizona Public Service Company	5%	\$ 176	\$ 3,436	\$ 168	\$ 3,403	5%	(1.0%)
NSTAR Electric Company*	4%	\$ 120	\$ 2,850	\$ 115	\$ 2,798	4%	(1.8%)
Florida Power & Light Company	2%	\$ 187	\$ 10,554	\$ 178	\$ 10,531	2%	(0.2%)
Potomac Electric Power Company*	1%	\$ 28	\$ 1,993	\$ 27	\$ 1,963	1%	(1.5%)

*Fully decoupled

Sources: Moody's Investors Service and US Energy Information Administration

The coronavirus pandemic's impact on industrial demand varies by sector. While the outbreak has reduced electricity demand in the tourism, aerospace, retail and energy industries, demand from the information technology, telecommunications, medical and packaged food sectors is stable or increasing.

Decoupling mechanisms and formula rates will recover lost 2020 revenues

Decoupling, formula rates and other cost-recovery mechanisms will enable some utilities to smooth the financial impact of the coronavirus-fueled drop in revenue.

Decoupling

Eleven US states – New York, California, Connecticut, Massachusetts, Maryland, Rhode Island, Hawaii, Maine, Ohio, Illinois, Idaho and the District of Columbia – have decoupling mechanisms that mitigate the financial impact of lower electricity volumes and revenues. Large commercial and industrial customers are sometimes excluded from the mechanism, limiting the extent to which decoupling can smooth out revenues.

Rate constructs in these states decouple authorized revenue from the volume of electricity sold through a true-up of collected revenues to authorized revenues, reducing the financial risk to a drop in demand. Truing up revenues over an extended period of time (usually two years or less) can also mitigate the impact on ratepayers. Through periodic filings with state regulators, the impact on a utility's net cash flow is typically spread out within the next two years.

California, for example, has a robust set of cost recovery mechanisms – including a decoupling mechanism, procurement cost pass-throughs and an adjustment mechanism for authorized return on equity (see “[Southern California Edison Company: Update following the passage of AB 1054](#)”). Any differences between the amounts collected and revenue authorized are either collected from customers or refunded to them. Thus, Southern California Edison and other investor-owned utilities in the state are not burdened by, nor would they benefit from, changes in electricity volumes sold.

In Maryland, [Exelon Corp.](#)'s (Baa2 stable) electric distribution companies, including Potomac Electric Power, [Delmarva Power & Light](#) (Baa1 stable) and [Baltimore Gas and Electric](#) (A3 stable) have a strong decoupling provision called a monthly rate adjustment (MRA). The MRA allows for monthly adjustments and eliminates the effect of abnormal weather and usage patterns on electric volumes. As a result, the Maryland electric distribution companies' revenues are not materially impacted by delivery volumes.

In Idaho, two regulatory mechanisms effectively decouple [Idaho Power Company's](#) (IPC, A3 stable) revenue and earnings from declines in volumes. IPC has a fixed-cost adjustment mechanism that allows the company to charge its residential and small commercial customers when it recovers less than the base level of fixed costs approved under its last rate case. IPC also has an earnings support mechanism through an accumulated deferred investment tax credit that the company can use if its earned return on equity (ROE) falls below 95% of its current allowed ROE. These mechanisms provide a high level of revenue, cash flow and earnings stability.

Formula rates

Companies that own electric transmission assets regulated by FERC use formula rates to calculate authorized revenue based on prudently incurred capital and operating costs and a return on net investment in transmission assets (i.e., its rate base). The transmission revenue requirement and thus retail rates are typically updated every December for the upcoming year based on costs and rate base and to true-up the actual revenues and costs of the prior projected period. Any over- or under-collection of the projected revenue requirement and actual revenues collected based on actual monthly peak load is trued up to refund or collect additional revenue within a two-year period. Companies with significant FERC rate base include [Virginia Electric and Power Company](#) (A2 stable), [Connecticut Light and Power Company](#) (A3 stable) and [Portland General Electric Company](#) (A3 stable).

Transmission and distribution companies in Illinois also operate under formula rates that are not based on volumes. The state adopted a formula rate construct in 2011 that will be in effect through at least 2022. Similar to FERC formula rates, we view Illinois' rate construct as credit positive for utilities in the state, such as [Commonwealth Edison](#) (A3 stable) and [Ameren Illinois Company](#) (A3 stable).

In addition, Arkansas, Louisiana and Mississippi where [Entergy Corporation](#) (Baa2 stable) has material operations, its electric companies benefit from similar rate structures with formula rate plans allowing annual adjustments to revenues in order for earnings to remain within a bandwidth of allowed returns.

The true-up of revenues for 2020 under decoupling mechanisms or formula rates will result in additional revenues collected in future periods, which will smooth out the negative financial impact of lower electricity demand being experienced in 2020.

Reducing SG&A and O&M costs and deferral of coronavirus-related expenses

Many utilities have also been able to lower cash expenses through reduced travel and noncritical maintenance activities. Over the last few years, the industry has been gradually reducing O&M costs, which has been an increasing focus of management teams. A general rule applied is that a \$1 reduction in SG&A and O&M costs can facilitate a \$7 to \$8 capital investment with minimal to no impact on customer rates. SG&A and O&M costs represent an average of 30% of revenue, on which utilities do not earn a return. Many companies recently affirmed their 2020 earnings guidance, helped by their ability to reduce O&M costs. As shown in Exhibit 8, Moody's adjusted SG&A and O&M costs declined by an average of .3% for the full sample of companies during the first half of 2020 from a year earlier.

Exhibit 8

Moody's adjusted administrative and operating costs (000s) fell by an average of .3%
Year-over-year change in SG&A and O&M costs in the first half of 2020 for the 59 sample US regulated utilities

Company	1H2020	1H2019	\$ change	% change
Alabama Power Company	883,254	1,000,397	(117,143)	(11.7%)
Appalachian Power Company	409,270	464,786	(55,516)	(11.9%)
Arizona Public Service Company	544,379	570,886	(26,507)	(4.6%)
Commonwealth Edison Company*	998,240	774,181	224,059	28.9%
Connecticut Light and Power Company (The)*	500,805	489,105	11,700	2.4%
Dominion Energy South Carolina, Inc.	413,882	479,510	(65,628)	(13.7%)
DTE Electric Company	820,136	840,533	(20,397)	(2.4%)
Duke Energy Carolinas, LLC	959,300	1,023,479	(64,179)	(6.3%)
Duke Energy Florida, LLC.	671,741	650,541	21,200	3.3%
Duke Energy Indiana, LLC.	392,834	409,857	(17,023)	(4.2%)
Entergy Louisiana, LLC	604,196	624,712	(20,516)	(3.3%)
Eversource Energy, Inc.	463,684	474,588	(10,904)	(2.3%)
Eversource Energy, Inc.	262,941	291,273	(28,332)	(9.7%)
Florida Power & Light Company	1,336,000	1,379,000	(43,000)	(3.1%)
Georgia Power Company**	1,093,149	1,073,645	19,504	1.8%
NSTAR Electric Company*	461,998	457,113	4,885	1.1%
Oklahoma Gas & Electric Company	286,290	283,743	2,548	0.9%
PacifiCorp	597,358	610,160	(12,802)	(2.1%)
Portland General Electric Company	361,955	377,191	(15,236)	(4.0%)
Potomac Electric Power Company*	405,544	407,665	(2,121)	(0.5%)
Southern California Edison Company*	1,968,544	1,625,168	343,375	21.1%
Tampa Electric Company	100,675	101,713	(1,038)	(1.0%)
Union Electric Company	603,000	638,000	(35,000)	(5.5%)
Virginia Electric and Power Company	954,991	1,009,350	(54,359)	(5.4%)
Wisconsin Electric Power Company	468,784	544,508	(75,723)	(13.9%)
Total of 59 Companies	21,750,483	21,792,048	(41,565)	(0.3%)

* Fully decoupled

** Includes \$92 million increase in O&M primarily due to amortization of storm damage recovery approved in their 2019 rate case.

Source: Moody's Investors Service

In addition, many companies have sought deferrals of coronavirus-related expenses. Many companies have provided for two times their typical annual bad debt expense as states extend moratoriums on cutting service to delinquent ratepayers. These expenses are still being incurred and deferred into a regulatory asset and may be recovered in future rates through a regulatory proceeding.

Appendix

Exhibit 9

A higher electric-to-total revenue ratio reflects greater vulnerability to FFO changes, all else being equal
Top 25 regulated US electric utilities with the highest proportion of electric revenues to total revenues and customer revenue mix

Company	Rating	Outlook	Residential	Commercial	Industrial	Electric Revenue / Total Revenue
Arizona Public Service Company	A2	Negative	54%	41%	5%	97%
Union Electric Company	Baa1	Stable	50%	41%	9%	96%
Virginia Electric and Power Company	A2	Stable	48%	45%	7%	95%
Southern California Edison Company*	Baa2	Stable	43%	51%	6%	94%
NSTAR Electric Company*	A1	Stable	48%	48%	4%	94%
DTE Electric Company	A2	Stable	50%	37%	14%	93%
Evergy Metro, Inc.	Baa1	Stable	44%	48%	8%	91%
Georgia Power Company	Baa1	Stable	43%	40%	17%	90%
Oklahoma Gas & Electric Company	A3	Stable	44%	39%	16%	90%
PacifiCorp	A3	Stable	38%	34%	28%	89%
Connecticut Light and Power Company (The)*	A3	Stable	63%	31%	5%	88%
Potomac Electric Power Company*	Baa1	Stable	51%	47%	1%	88%
Duke Energy Carolinas, LLC	A1	Stable	47%	36%	18%	87%
Alabama Power Company	A1	Stable	44%	30%	26%	87%
Duke Energy Indiana, LLC.	A2	Stable	42%	30%	28%	87%
Florida Power & Light Company	A1	Stable	60%	38%	2%	87%
Appalachian Power Company	Baa1	Stable	52%	25%	22%	86%
Commonwealth Edison Company*	A3	Stable	59%	30%	10%	86%
Duke Energy Florida, LLC.	A3	Stable	61%	34%	5%	84%
Entergy Louisiana, LLC	Baa1	Stable	34%	28%	38%	83%
Dominion Energy South Carolina, Inc.**	Baa2	Stable	48%	36%	17%	82%
Tampa Electric Company	A3	Positive	54%	38%	8%	82%
Wisconsin Electric Power Company	A2	Stable	42%	36%	22%	81%
Portland General Electric Company	A3	Stable	51%	37%	12%	81%
Evergy Kansas Central, Inc.	Baa1	Stable	42%	37%	21%	76%

Note: Customer mix based on 2019E revenue

*Fully decoupled

** Lower than historical due to a \$1.0 billion charge to electric revenue for refunds of amounts previously collected from retail electric customers for new nuclear development

Sources: Moody's Investors Service and US Energy Information Administration

Exhibit 10

Regulated US electric utilities in states with decoupling mechanisms

Company	State	Rating	Outlook
Southern California Edison Company	CA	Baa2	Stable
Connecticut Light and Power Company (The)	CT	A3	Stable
United Illuminating Company	CT	Baa1	Stable
Potomac Electric Power Company	DC	Baa1	Stable
Delmarva Power & Light Company	DE	Baa1	Stable
Idaho Power Company	ID	A3	Stable
Commonwealth Edison Company	IL	A3	Stable
Ameren Illinois	IL	A3	Stable
NSTAR Electric Company	MA	A1	Stable
Baltimore Gas and Electric Company	MD	A3	Stable
Unitil Energy Systems, Inc.	NH	Baa1	Stable
Central Hudson Gas & Electric Corporation	NY	A3	Stable

Source: Moody's Investors Service

Exhibit 11

Regulated US electric utilities' rates by customer class

Company	2018 Residential	2018 Commercial	2018 Industrial	2019F Residential	2019F Commercial	2019F Industrial	2020F Residential	2020F Commercial	2020F Industrial
\$ per MWh % Change per EIA				1.3%	-0.1%	-1.3%	0.4%	-0.9%	-1.8%
Alabama Power Company	\$ 128.1	\$ 116.5	\$ 63.1	\$ 129.8	\$ 116.4	\$ 62.3	\$ 130.3	\$ 115.3	\$ 61.2
Alaska Electric Light and Power Company(AELP)	\$ 128.7	\$ 108.2	\$ 117.8	\$ 130.4	\$ 108.1	\$ 116.3	\$ 130.9	\$ 105.1	\$ 114.3
Appalachian Power Company	\$ 111.8	\$ 87.7	\$ 62.6	\$ 113.3	\$ 87.6	\$ 61.8	\$ 113.7	\$ 86.8	\$ 60.7
Arizona Public Service Company	\$ 141.6	\$ 115.1	\$ 84.2	\$ 143.4	\$ 115.0	\$ 83.1	\$ 144.0	\$ 113.9	\$ 81.6
Atlantic City Electric Company	\$ 157.9	\$ 76.4	\$ 42.0	\$ 160.0	\$ 76.3	\$ 41.4	\$ 160.6	\$ 75.6	\$ 40.7
Central Hudson Gas & Electric Corporation	\$ 176.4	\$ 82.5	\$ 20.4	\$ 178.7	\$ 82.4	\$ 20.2	\$ 179.4	\$ 81.7	\$ 19.8
Cleveland Electric Illuminating Company (The)	\$ 85.0	\$ 67.7	\$ 17.7	\$ 86.1	\$ 67.6	\$ 17.5	\$ 86.4	\$ 67.0	\$ 17.2
Commonwealth Edison Company	\$ 104.3	\$ 46.9	\$ 19.4	\$ 105.7	\$ 46.9	\$ 19.1	\$ 106.1	\$ 46.4	\$ 18.8
Connecticut Light and Power Company (The)	\$ 179.7	\$ 101.4	\$ 76.6	\$ 182.0	\$ 101.3	\$ 75.6	\$ 182.7	\$ 100.4	\$ 74.2
Dayton Power & Light Company	\$ 81.5	\$ 38.2	\$ 15.4	\$ 82.5	\$ 38.2	\$ 15.2	\$ 82.9	\$ 35.8	\$ 14.9
Dominion Energy South Carolina, Inc	\$ 130.2	\$ 101.8	\$ 64.0	\$ 131.9	\$ 101.7	\$ 63.2	\$ 132.4	\$ 100.7	\$ 62.1
DTE Electric Company	\$ 156.3	\$ 93.4	\$ 57.4	\$ 161.1	\$ 105.9	\$ 67.1	\$ 161.7	\$ 104.9	\$ 65.9
Duke Energy Carolinas, LLC	\$ 103.0	\$ 78.7	\$ 56.7	\$ 104.4	\$ 78.6	\$ 56.0	\$ 104.8	\$ 77.9	\$ 55.0
Duke Energy Florida, LLC.	\$ 131.4	\$ 98.5	\$ 83.0	\$ 133.1	\$ 98.5	\$ 81.9	\$ 133.6	\$ 97.5	\$ 80.5
Duke Energy Indiana, LLC	\$ 115.3	\$ 95.1	\$ 73.0	\$ 116.8	\$ 95.0	\$ 72.1	\$ 117.2	\$ 94.1	\$ 70.8
Duquesne Light Company	\$ 133.9	\$ 43.5	\$ 17.2	\$ 135.7	\$ 43.4	\$ 17.0	\$ 136.2	\$ 43.0	\$ 16.7
El Paso Electric Company	\$ 120.1	\$ 92.6	\$ 50.4	\$ 121.7	\$ 92.5	\$ 49.7	\$ 122.1	\$ 91.7	\$ 48.9
Empire District Electric Company (The)	\$ 137.5	\$ 117.1	\$ 85.9	\$ 139.3	\$ 117.0	\$ 84.8	\$ 139.8	\$ 115.9	\$ 83.3
Entergy Louisiana, LLC	\$ 85.2	\$ 80.9	\$ 49.7	\$ 86.3	\$ 80.8	\$ 49.1	\$ 86.7	\$ 80.0	\$ 48.2
Entergy Mississippi, LLC	\$ 99.3	\$ 95.3	\$ 68.4	\$ 100.6	\$ 95.3	\$ 67.5	\$ 100.9	\$ 94.4	\$ 66.3
Entergy New Orleans, LLC.	\$ 108.1	\$ 92.2	\$ 75.8	\$ 107.5	\$ 92.1	\$ 74.8	\$ 107.9	\$ 91.2	\$ 73.5
Entergy Texas, Inc.	\$ 102.9	\$ 76.0	\$ 49.3	\$ 104.3	\$ 76.0	\$ 48.7	\$ 104.7	\$ 75.2	\$ 47.8
Eversource Energy, Inc.	\$ 133.5	\$ 100.9	\$ 75.0	\$ 122.9	\$ 95.8	\$ 71.4	\$ 123.4	\$ 94.9	\$ 70.1
Eversource Energy, Inc.	\$ 135.7	\$ 107.4	\$ 83.1	\$ 131.3	\$ 103.1	\$ 79.9	\$ 131.8	\$ 102.1	\$ 78.5
Eversource Energy, Inc.	\$ 111.6	\$ 89.4	\$ 67.2	\$ 113.1	\$ 89.3	\$ 66.3	\$ 113.5	\$ 88.5	\$ 65.1
Florida Power & Light Company	\$ 108.3	\$ 86.0	\$ 66.0	\$ 109.8	\$ 85.9	\$ 65.2	\$ 110.2	\$ 85.1	\$ 64.0
Georgia Power Company	\$ 116.3	\$ 93.1	\$ 57.2	\$ 117.9	\$ 93.0	\$ 56.4	\$ 118.3	\$ 92.2	\$ 55.4
Idaho Power Company	\$ 103.8	\$ 76.0	\$ 65.4	\$ 105.2	\$ 75.9	\$ 64.5	\$ 105.6	\$ 75.2	\$ 63.4
Indianapolis Power & Light Company	\$ 110.3	\$ 116.8	\$ 86.7	\$ 111.8	\$ 116.7	\$ 85.6	\$ 112.2	\$ 115.6	\$ 84.1
Jersey Central Power & Light Company	\$ 116.9	\$ 59.1	\$ 33.1	\$ 118.4	\$ 59.0	\$ 32.7	\$ 118.9	\$ 58.5	\$ 32.1
Kentucky Power Company	\$ 121.0	\$ 123.7	\$ 66.7	\$ 122.6	\$ 123.6	\$ 65.8	\$ 123.1	\$ 122.4	\$ 64.6
Kentucky Utilities Co.	\$ 97.3	\$ 93.4	\$ 59.2	\$ 98.6	\$ 93.3	\$ 58.5	\$ 99.0	\$ 92.4	\$ 57.4
Metropolitan Edison Company	\$ 109.3	\$ 46.6	\$ 11.3	\$ 110.8	\$ 46.6	\$ 11.1	\$ 111.2	\$ 46.2	\$ 10.9
Nevada Power Company	\$ 120.9	\$ 64.0	\$ 77.8	\$ 122.5	\$ 63.9	\$ 76.8	\$ 123.0	\$ 63.3	\$ 75.4
NSTAR Electric Company	\$ 169.1	\$ 98.3	\$ 75.8	\$ 171.3	\$ 98.3	\$ 74.8	\$ 172.0	\$ 97.3	\$ 73.5
Ohio Edison Company	\$ 85.1	\$ 60.4	\$ 19.2	\$ 86.2	\$ 60.4	\$ 19.0	\$ 86.5	\$ 59.8	\$ 18.7
Ohio Power Company	\$ 106.3	\$ 56.8	\$ 25.8	\$ 107.7	\$ 56.7	\$ 25.5	\$ 108.1	\$ 56.2	\$ 25.0
Oklahoma Gas & Electric Company	\$ 92.6	\$ 71.6	\$ 49.0	\$ 93.8	\$ 71.5	\$ 48.4	\$ 94.2	\$ 70.8	\$ 47.5
Otter Tail Power Company	\$ 96.5	\$ 81.2	\$ 56.2	\$ 97.8	\$ 81.1	\$ 55.5	\$ 98.2	\$ 80.4	\$ 54.5
PacifiCorp	\$ 107.4	\$ 85.5	\$ 64.8	\$ 108.8	\$ 85.4	\$ 63.9	\$ 109.2	\$ 84.6	\$ 62.8
Pennsylvania Electric Company	\$ 132.8	\$ 53.9	\$ 15.8	\$ 134.5	\$ 53.9	\$ 15.6	\$ 135.0	\$ 53.4	\$ 15.3
Pennsylvania Power Company	\$ 112.5	\$ 39.0	\$ 4.7	\$ 114.0	\$ 39.0	\$ 4.6	\$ 114.5	\$ 38.6	\$ 4.5
Portland General Electric Company	\$ 120.1	\$ 88.0	\$ 50.0	\$ 121.7	\$ 87.9	\$ 49.3	\$ 122.1	\$ 87.1	\$ 48.5
Potomac Edison Company (The)	\$ 102.0	\$ 63.0	\$ 38.4	\$ 103.4	\$ 63.0	\$ 37.9	\$ 103.8	\$ 62.4	\$ 37.2
Potomac Electric Power Company	\$ 122.1	\$ 59.3	\$ 57.5	\$ 123.7	\$ 59.2	\$ 56.8	\$ 124.2	\$ 58.7	\$ 55.8
Public Service Company of New Hampshire	\$ 171.2	\$ 95.7	\$ 58.8	\$ 173.5	\$ 95.6	\$ 58.1	\$ 174.1	\$ 94.7	\$ 57.0
Public Service Company of New Mexico	\$ 133.2	\$ 106.0	\$ 56.8	\$ 135.0	\$ 105.9	\$ 56.1	\$ 135.5	\$ 104.9	\$ 55.1
Public Service Company of Oklahoma	\$ 103.6	\$ 77.1	\$ 50.1	\$ 105.0	\$ 77.0	\$ 49.5	\$ 105.4	\$ 76.3	\$ 48.6
Southern California Edison Company	\$ 160.9	\$ 128.4	\$ 91.1	\$ 163.0	\$ 128.3	\$ 89.9	\$ 163.7	\$ 127.1	\$ 88.3
Southwestern Electric Power Company	\$ 102.1	\$ 84.6	\$ 66.5	\$ 103.4	\$ 84.5	\$ 65.6	\$ 103.8	\$ 83.8	\$ 64.4
Tampa Electric Company	\$ 113.3	\$ 93.9	\$ 80.0	\$ 114.8	\$ 93.8	\$ 79.0	\$ 115.3	\$ 92.9	\$ 77.6
Toledo Edison Company	\$ 91.2	\$ 68.6	\$ 12.5	\$ 92.4	\$ 68.6	\$ 12.3	\$ 92.8	\$ 67.9	\$ 12.1
Union Electric Company	\$ 109.0	\$ 86.6	\$ 69.6	\$ 110.5	\$ 86.5	\$ 68.7	\$ 110.9	\$ 85.7	\$ 67.5
United Illuminating Company	\$ 219.4	\$ 110.9	\$ 97.7	\$ 222.3	\$ 110.8	\$ 96.5	\$ 223.1	\$ 109.7	\$ 94.8
Unitil Energy Systems, Inc.	\$ 170.0	\$ 129.0	\$ 65.7	\$ 172.2	\$ 128.8	\$ 64.8	\$ 172.9	\$ 127.6	\$ 63.7
UNS Electric, Inc.	\$ 100.4	\$ 99.7	\$ 70.6	\$ 101.7	\$ 99.6	\$ 69.7	\$ 102.1	\$ 98.7	\$ 68.5
Virginia Electric and Power Company	\$ 116.5	\$ 80.4	\$ 64.6	\$ 118.1	\$ 80.3	\$ 63.8	\$ 118.5	\$ 79.6	\$ 62.7
West Penn Power Company	\$ 96.2	\$ 40.0	\$ 9.8	\$ 97.5	\$ 40.0	\$ 9.6	\$ 97.9	\$ 39.6	\$ 9.5
Wisconsin Electric Power Company	\$ 152.0	\$ 114.8	\$ 77.6	\$ 154.0	\$ 114.7	\$ 76.6	\$ 154.6	\$ 113.6	\$ 75.2

Source: US Energy Information Administration

Exhibit 12

A high percentage of revenue from industrial customers is fixed
Illustration of demand ratchet rate structure for a hypothetical industrial customer of a regulated US electric utility

Year 1	New Peak Demand			Return to Normal with New Peak			Cut Production by 50%					
	January	February	March	April	May	June	July	August	September	October	November	December
Actual KW	2,000	2,000	2,500	2,000	2,000	2,000	2,000	1,000	1,000	1,000	1,000	1,000
Billing KW	2,000	2,000	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Demand Charge (\$9 per KW)	\$ 18,000	\$ 18,000	\$ 22,500	\$ 22,500	\$ 22,500	\$ 22,500	\$ 22,500	\$ 22,500	\$ 22,500	\$ 22,500	\$ 22,500	\$ 22,500
% of Revenue	56%	56%	56%	61%	61%	61%	61%	76%	76%	76%	76%	76%
Actual Energy Kwh	480,000	480,000	600,000	480,000	480,000	480,000	480,000	240,000	240,000	240,000	240,000	240,000
Energy Charge (\$0.03 per kwh)	\$ 14,400	\$ 14,400	\$ 18,000	\$ 14,400	\$ 14,400	\$ 14,400	\$ 14,400	\$ 7,200	\$ 7,200	\$ 7,200	\$ 7,200	\$ 7,200
% of Revenue	44%	44%	44%	39%	39%	39%	39%	24%	24%	24%	24%	24%
Total Bill	\$ 32,400	\$ 32,400	\$ 40,500	\$ 36,900	\$ 36,900	\$ 36,900	\$ 36,900	\$ 29,700	\$ 29,700	\$ 29,700	\$ 29,700	\$ 29,700

Year 2	Returned to Normal Peak Billing			Production Cut Reflected Fully in Rates				Returned to Normal Peak Actual/Billing				
	January	February	March	April	May	June	July	August	September	October	November	December
Actual KW	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	2,000	2,000	2,000	2,000
Billing KW	2,500	2,500	2,000	2,000	2,000	2,000	1,000	1,000	2,000	2,000	2,000	2,000
Demand Charge (\$9 per KW)	\$ 22,500	\$ 22,500	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000	\$ 9,000	\$ 9,000	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000
% of Revenue	76%	76%	71%	71%	71%	71%	56%	56%	56%	56%	56%	56%
Actual Energy Kwh	240,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	480,000	480,000	480,000	480,000
Energy Charge (\$0.03 per kwh)	\$ 7,200	\$ 7,200	\$ 7,200	\$ 7,200	\$ 7,200	\$ 7,200	\$ 7,200	\$ 7,200	\$ 14,400	\$ 14,400	\$ 14,400	\$ 14,400
% of Revenue	24%	24%	29%	29%	29%	29%	44%	44%	44%	44%	44%	44%
Total Bill	\$ 29,700	\$ 29,700	\$ 25,200	\$ 25,200	\$ 25,200	\$ 25,200	\$ 16,200	\$ 16,200	\$ 32,400	\$ 32,400	\$ 32,400	\$ 32,400

Source: Moody's Investors Service

Exhibit 13

Our cohort of 59 utility operating companies

Credit metrics for US regulated utility operating companies that generate more than 80% of their total revenue from electricity

Company	Rating	Outlook	2019 FFO	2020 FFO	2019 FFO/ Electric Revenue	2020 FFO/ Electric Revenue	Change (Bps)	2019 FFO / Debt	2020 FFO / Debt	Change (Bps)
Alabama Power Company	A1	Stable	2,167	2,126	40.7%	40.5%	(20.4)	24.5%	24.0%	(46.5)
Appalachian Power Company	Baa1	Stable	740	734	29.4%	29.3%	(10.7)	15.3%	15.1%	(11.9)
Arizona Public Service Company	A2	Negative	1,424	1,405	41.4%	41.3%	(13.2)	25.5%	25.2%	(32.5)
Atlantic City Electric Company	Baa1	Stable	283	287	28.4%	28.6%	16.5	19.4%	19.6%	23.5
Central Hudson Gas & Electric Corporation	A3	Negative	147	150	26.4%	26.7%	27.1	19.3%	19.7%	38.5
Cleveland Electric Illuminating Company (The)	Baa2	Stable	243	234	23.9%	23.3%	(53.4)	15.7%	15.1%	(61.2)
Commonwealth Edison Company	A3	Stable	2,098	2,099	42.7%	42.7%	0.5	20.2%	20.2%	1.2
Connecticut Light and Power Company (The)	A3	Stable	810	817	28.4%	28.5%	10.9	20.3%	20.5%	16.2
Dayton Power & Light Company	Baa2	Negative	187	190	27.4%	27.6%	23.1	27.0%	27.4%	45.7
Dominion Energy South Carolina, Inc.	Baa2	Stable	914	898	40.5%	40.3%	(19.1)	21.6%	21.2%	(38.1)
DTE Electric Company	(P)A2	Stable	1,824	1,793	37.4%	37.2%	(20.9)	21.5%	21.1%	(37.0)
Duke Energy Carolinas, LLC	A1	Stable	3,218	3,168	49.8%	49.7%	(7.5)	26.5%	26.1%	(41.5)
Duke Energy Florida, LLC	A3	Stable	1,748	1,749	39.6%	39.6%	0.9	20.5%	20.5%	1.6
Duke Energy Indiana, LLC	A2	Stable	1,095	1,071	42.0%	41.8%	(21.9)	24.3%	23.8%	(52.7)
Duquesne Light Company	A3	Stable	353	356	40.4%	40.5%	8.2	26.8%	27.0%	20.7
El Paso Electric Company	Baa2	Stable	262	254	34.2%	33.8%	(41.8)	16.4%	15.8%	(51.8)
Empire District Electric Company (The)	Baa1	Stable	206	202	36.4%	36.1%	(23.8)	22.9%	22.4%	(43.6)
Entergy Louisiana, LLC	Baa1	Stable	1,548	1,504	43.4%	43.1%	(27.1)	19.4%	18.9%	(56.1)
Entergy Mississippi, LLC	Baa1	Stable	326	315	26.5%	26.0%	(47.5)	18.4%	17.8%	(62.8)
Entergy New Orleans, LLC	Ba1	Stable	127	120	22.7%	22.0%	(72.1)	19.3%	18.2%	(101.9)
Entergy Texas, Inc.	Baa3	Positive	323	314	23.5%	23.1%	(36.8)	15.4%	15.0%	(41.6)
Eversource Energy, Inc.	Baa1	Stable	831	810	43.6%	43.4%	(22.9)	17.5%	17.0%	(43.5)
Eversource Energy, Inc. (P)	(P)Baa1	Stable	583	562	35.6%	35.2%	(45.1)	16.9%	16.3%	(59.4)
Eversource Energy, Inc. (Missouri)	Baa2	Stable	314	310	39.8%	39.7%	(13.9)	25.3%	25.0%	(31.6)
Florida Power & Light Company	A1	Stable	5,311	5,298	50.3%	50.3%	(1.0)	33.6%	33.5%	(8.0)
Georgia Power Company	Baa1	Stable	2,834	2,752	37.4%	37.1%	(35.3)	20.5%	19.9%	(59.3)
Gulf Power Company	A2	Stable	480	479	40.3%	40.3%	(1.8)	20.9%	20.9%	(3.6)
Idaho Power Company	A3	Stable	368	361	31.7%	31.5%	(26.4)	15.7%	15.4%	(30.5)
Indianapolis Power & Light Company	Baa1	Stable	410	403	30.8%	30.4%	(21.8)	22.2%	21.8%	(35.4)
Jersey Central Power & Light Company	A3	Stable	457	463	26.6%	26.8%	18.5	23.1%	23.5%	31.3
Kentucky Power Company	Baa3	Stable	115	111	20.3%	19.9%	(40.4)	11.1%	10.7%	(34.5)
Kentucky Utilities Co.	A3	Stable	665	649	43.0%	42.7%	(22.9)	23.5%	22.9%	(56.2)
Metropolitan Edison Company	A3	Stable	269	279	32.9%	33.4%	49.6	23.8%	24.7%	91.1
Nevada Power Company	Baa1	Stable	608	611	29.4%	29.4%	6.1	21.3%	21.4%	9.6
NSTAR Electric Company	A1	Stable	832	803	29.2%	28.7%	(47.9)	23.3%	22.5%	(80.1)
Ohio Edison Company	A3	Stable	442	443	32.6%	32.6%	3.5	36.2%	36.3%	9.7
Ohio Power Company	A3	Stable	564	562	20.5%	20.5%	(4.7)	21.1%	21.0%	(7.7)
Oklahoma Gas & Electric Company	A3	Stable	729	710	36.4%	36.0%	(34.0)	21.8%	21.2%	(59.1)
Otter Tail Power Company	A3	Stable	125	118	32.2%	31.4%	(84.9)	18.3%	17.1%	(112.0)
PacifiCorp	A3	Stable	1,454	1,399	32.1%	31.6%	(51.4)	18.2%	17.5%	(68.3)
Pennsylvania Electric Company	Baa1	Stable	293	298	34.0%	34.3%	25.4	20.9%	21.3%	41.4
Portland General Electric Company	A3	Stable	698	688	40.5%	40.3%	(15.2)	23.1%	22.8%	(32.5)
Potomac Edison Company (The)	Baa2	Stable	105	110	13.0%	13.4%	43.1	16.7%	17.5%	73.5
Potomac Electric Power Company	Baa3	Stable	676	659	33.9%	33.6%	(32.2)	21.9%	21.4%	(53.5)
Public Service Company of New Hampshire	A3	Stable	295	294	31.5%	31.5%	(2.5)	17.2%	17.2%	(3.1)
Public Service Company of New Mexico	Baa2	Stable	210	200	22.5%	21.9%	(63.2)	10.5%	10.0%	(48.8)
Public Service Company of Oklahoma	Baa1	Stable	283	272	19.8%	19.3%	(49.1)	18.3%	17.6%	(69.8)
Sierra Pacific Power Company	Baa1	Stable	259	250	36.7%	36.2%	(41.9)	21.6%	20.9%	(72.4)
Southern California Edison Company	Baa2	Stable	3,171	3,012	27.3%	26.6%	(70.6)	18.3%	17.4%	(91.9)
Southwestern Electric Power Company	Baa2	Stable	401	388	26.3%	26.3%	(44.9)	13.4%	13.0%	(43.2)
Tampa Electric Company	A3	Positive	754	745	38.4%	38.3%	(14.0)	22.6%	22.4%	(27.2)
Toledo Edison Company	Baa1	Stable	116	115	26.7%	26.5%	(13.7)	25.6%	25.4%	(25.4)
Union Electric Company	(P)Baa1	Stable	1,040	1,017	33.5%	33.3%	(29.0)	22.1%	21.6%	(48.3)
United Illuminating Company	Baa1	Stable	282	282	35.5%	35.5%	(0.7)	25.2%	25.1%	(1.5)
Unitil Energy Systems, Inc.	Baa1	Stable	26	26	17.0%	16.9%	(9.6)	20.0%	19.8%	(16.3)
UNS Electric, Inc.	A3	Stable	47	46	28.8%	28.6%	(20.5)	21.4%	21.1%	(31.7)
Virginia Electric and Power Company	A2	Stable	2,989	2,916	38.7%	38.4%	(28.4)	21.3%	20.8%	(51.9)
West Penn Power Company	A3	Stable	276	287	28.9%	29.4%	50.0	27.2%	28.3%	101.3
Wisconsin Electric Power Company	A2	Stable	609	580	21.4%	20.8%	(62.9)	10.5%	10.0%	(49.4)
Weighted Average of 59 Companies*							(23.5)			(37.2)

*Weighted average based on debt outstanding
Source: Moody's Investors Service

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SECTOR COMMENT

6 April 2020

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Regulated Electric, Gas and Water Utilities – US

Coronavirus outbreak delays rate cases, but regulatory support remains intact

The coronavirus (COVID-19) pandemic is creating logistical and social challenges for US regulated utility rate case proceedings. Electric, gas and water utilities will likely see the schedules associated with 2020 rate case proceedings postponed or delayed. In addition, we will likely see the schedules of other regulatory proceedings, open meetings, investigations or other open dockets pushed back. For many utilities, the timely conclusion of a rate case is important for earnings and cash flow, which helps fund operations, capital investing and dividends to shareholders.

When considering the short-term credit implications of coronavirus-related regulatory delays, we will view any modest weakening in financial metrics as temporary and not detrimental to long-term credit quality, unless it is accompanied by a more contentious regulatory or political environment. We will continue to expect utilities to make proactive financial policy adjustments if the dip is material, or appears likely to remain for an extended period of time. For now, we expect state regulatory commissions to continue to provide a broad suite of timely cost recovery mechanisms and to address current challenges like lost revenue and incremental expenses. As a result, we think the overall relationship with the sector remains supportive.

Still, the prospects for political intervention in the rate-making process will rise and will likely be credit positive for the sector. We think state legislatures and governors will look to provide regulators with additional flexibility to reduce their docket backlog. Utility rate proceedings are complex, time-consuming and require public hearings, making them difficult to process in a remote environment. So changes need to be codified. There is also the possibility that broader political intervention becomes credit negative, since social risks will rise as high unemployment levels make rate increases less politically palatable. (See the National Association of Regulatory Utility Commissioners' [State Response Tracker](#).)

The New York Public Service Commission has already approved multiple revenue deferral orders, allowing [Niagara Mohawk Power Corporation](#) (A3 stable) to delay about \$110 million in electric and gas revenue increases by three months to 1 July 2020 and [American Water Works Company Inc.](#) (AWK, Baa1 stable) subsidiary New York American Water Company to defer a roughly \$4 million revenue increase by five months to 1 September 2020. (AWK [expects to complete](#) the planned sale of its New York subsidiary to Algonquin Power & Utilities Corp. subsidiary Liberty Utilities in the second half of this year.)

Along similar lines, [Avangrid Inc.](#) (Baa1 negative) subsidiaries [New York State Electric & Gas Corporation](#) (A3 stable) and [Rochester Gas & Electric Corporation](#) (A3 stable) are seeking suspension of their electric and gas cases through 13 September 2020. We note that all of these filings were proposed by the utilities, as they try to do their part in reducing any near-term financial burdens on customers during the critical months of the COVID-19 pandemic. Furthermore, [National Grid Plc](#) (Baa1 stable) subsidiaries [KeySpan Gas East Corporation](#) (A3 negative) and [The Brooklyn Union Gas Company](#) (A3 negative) had their rate cases extended to 1 August 2020 in January, following the fourth one-month extension being granted (we now expect the order to come in July). Several other companies across the US have made similar requests of their respective regulators.

Rate case delays that help stakeholders are not new for the sector. We see these regulatory delays as a social benefit and view the actions as prudent corporate governance. Over the long-term, these actions often enhance financial strategy, risk management and customer relations.

We will generally try to see through one- or two-year drags on financial metrics due to these delays. We assume that the pandemic will be contained by then, that economic activity will recover and that the rate increases will eventually be approved, including some of the lost revenues associated with the delay. However, if the US economic downturn were to be protracted, it could have negative credit implications for certain utilities, such as those that have been operating with leverage that we had already considered high before the outbreak.

Exhibit 1

Utilities with rate cases that were expected to be completed in 2020 or the first quarter of 2021
Rate filing data as of 31 March 2020 and (CFO pre-WC)/debt as of year-end 2019 or available LTM

State	Company	Rating	Outlook	Expected Decision Date	Original Revenue Request (\$M)	Revenue Requested / Total Rev of Utility	Revenue Requested / Total Rev of Parent	Utility CFO Pre-WC / Debt	Utility Downgrade Trigger
MI	DTE Gas Company	A3	Stable	Sep-20	\$ 203.8	13.7%	1.6%	15.7%	15%
NJ	South Jersey Gas Company	A3	Negative	Dec-20	\$ 75.3	13.2%	4.6%	11.1%	15%
IN	Duke Energy Indiana, LLC.	A2	Stable	Apr-20	\$ 394.6	13.1%	1.6%	23.1%	22%
CA	Southern California Edison Company	Baa2	Stable	Dec-20	\$ 1,319.4	10.7%	10.7%	(2.1%)	15%
NJ	Jersey Central Power & Light Company	Baa1	Rating(s) Under Review	Nov-20	\$ 186.9	10.2%	1.7%	23.2%	17%
NY	New York State Electric and Gas Corporation	A3	Stable	Jul-20	\$ 162.7	10.2%	2.6%	19.9%	18%
NC	Duke Energy Progress, LLC	A2	Stable	May-20	\$ 586.0	9.8%	2.3%	22.4%	20%
OR	Northwest Natural Gas Company	Baa1	Stable	Oct-20	\$ 71.4	9.7%	9.7%	18.3%	14%
KY	Duke Energy Kentucky, Inc.	Baa1	Stable	Apr-20	\$ 45.6	9.5%	0.2%	17.2%	15%
NY	Brooklyn Union Gas Company, The	A3	Negative	May-20	\$ 179.8	9.4%	1.4%	8.6%	17%
LA	Cleco Power LLC	A3	Stable	N/A	\$ 109.6	9.4%	6.7%	20.3%	20%
AZ	Tucson Electric Power Company	A3	Stable	May-20	\$ 114.9	8.1%	1.7%	22.6%	22%
TX	Southwestern Public Service Company	Baa2	Stable	Sep-20	\$ 136.5	7.5%	1.2%	18.1%	18%
PA	UGI Utilities, Inc.	A2	Stable	Oct-20	\$ 74.6	7.1%		20.8%	20%
DC	Potomac Electric Power Company	Baa1	Stable	Oct-20	\$ 157.9	7.0%	0.5%	18.8%	14%
AZ	Southwest Gas Corporation	A3	Negative	May-20	\$ 93.3	6.8%	3.0%	14.6%	17%
MI	DTE Electric Company	A2	Stable	May-20	\$ 343.2	6.6%	2.7%	21.1%	20%
NH	Public Service Company of New Hampshire	A3	Stable	May-20	\$ 69.3	6.5%	0.8%	14.5%	18%
NC	Duke Energy Carolinas, LLC	A1	Stable	Apr-20	\$ 464.7	6.3%	1.9%	25.9%	25%
MN	ALLETE, Inc.	Baa1	Stable	Dec-20	\$ 65.9	5.3%	5.3%	18.6%	19%
NY	Rochester Gas & Electric Corporation	A3	Stable	Jul-20	\$ 38.7	4.2%	0.6%	18.2%	17%
WA	Puget Sound Energy, Inc.	Baa1	Stable	May-20	\$ 138.4	4.1%	4.1%	15.1%	20%
IL	Ameren Illinois Company	A3	Stable	Jan-21	\$ 102.0	4.0%	1.7%	25.3%	19%

Revenue requests represent the original filing and do not reflect settlement amounts or revised filing requests, which we expect to occur on a case-by-case basis.

Sources: Standard & Poor's Global Market Intelligence and Moody's Investors Service

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody.com for the most updated credit rating action information and rating history.

Exhibit 2

Utilities with rate cases that were expected to be completed in 2020 or the first quarter of 2021

Rate filing data as of 31 March 2020 and (CFO pre-WC)/debt as of year-end 2019 or available LTM

State	Company	Rating	Outlook	Expected Decision Date	Original Revenue Request (\$M)	Revenue Requested / Total Rev of Utility	Revenue Requested / Total Rev of Parent	Utility CFO Pre-WC / Debt	Utility Downgrade Trigger
ME	Northern Utilities, Inc.	Baa1	Stable	Mar-20	\$ 7.1	4.0%	1.6%	23.0%	17%
MO	Empire District Electric Company (The)	Baa1	Stable	Jun-20	\$ 26.5	4.0%		25.2%	17%
MI	Consumers Energy Company	Aa3	Stable	Oct-20	\$ 244.7	3.8%	3.6%	20.1%	20%
MI	Consumers Energy Company	Aa3	Stable	Dec-20	\$ 244.4	3.8%	3.6%	20.1%	20%
CO	Public Service Company of Colorado	A3	Stable	Sep-20	\$ 144.5	3.4%	1.3%	22.1%	20%
NY	KeySpan Gas East Corporation	A3	Negative	May-20	\$ 38.8	3.1%	0.3%	16.1%	17%
HI	Hawaiian Electric Company, Inc.	Baa2	Positive	N/A	\$ 77.6	3.0%	2.7%	21.4%	15%
DC	Washington Gas Light Company	A3	Stable	Dec-20	\$ 35.2	2.6%	1.4%	15.4%	18%
NV	Southwest Gas Corporation	A3	Negative	Aug-20	\$ 35.2	2.6%	1.1%	14.6%	17%
NM	Southwestern Public Service Company	Baa2	Stable	Apr-20	\$ 46.6	2.6%	0.4%	18.1%	18%
MA	Fitchburg Gas & Electric Light Company	Baa1	Stable	Oct-20	\$ 2.7	2.5%	0.6%	23.1%	17%
AZ	Arizona Public Service Company	A2	Negative	Dec-20	\$ 68.6	2.0%	2.0%	23.4%	22%
WA	Puget Sound Energy, Inc.	Baa1	Stable	May-20	\$ 65.5	1.9%	1.9%	15.1%	20%
DE	Delmarva Power & Light Company	Baa1	Stable	Oct-20	\$ 24.3	1.9%	0.1%	17.2%	15%
OR	PacifiCorp	A3	Stable	Dec-20	\$ 78.0	1.5%	0.4%	18.4%	20%
MD	Delmarva Power & Light Company	Baa1	Stable	Jul-20	\$ 17.3	1.3%	0.1%	17.2%	15%
DE	Delmarva Power & Light Company	Baa1	Stable	Sep-20	\$ 14.6	1.1%	0.0%	17.2%	15%
MN	CenterPoint Energy Resources Corp.	Baa1	Positive	Nov-20	\$ 62.0	0.9%	0.5%	18.7%	17%
VA	Kentucky Utilities Co.	A3	Stable	Apr-20	\$ 12.7	0.7%	0.2%	23.1%	20%
OR	Avista Corp.	Baa2	Stable	Dec-20	\$ 6.8	0.5%	0.5%	15.0%	14%
CA	Southwest Gas Corporation	A3	Negative	Feb-21	\$ 6.8	0.5%	0.2%	14.6%	17%
WY	Questar Gas Company	A3	Stable	Sep-20	\$ 3.5	0.4%	0.0%	22.1%	16%
CA	Southwest Gas Corporation	A3	Negative	Feb-21	\$ 4.5	0.3%	0.1%	14.6%	17%
NY	New York State Electric and Gas Corporation	A3	Stable	Jul-20	\$ 4.1	0.3%	0.1%	19.9%	19%
NV	Southwest Gas Corporation	A3	Negative	Aug-20	\$ 3.1	0.2%	0.1%	14.6%	17%
WY	PacifiCorp	A3	Stable	Jan-21	\$ 7.1	0.1%	0.0%	18.4%	20%
CA	Southwest Gas Corporation	A3	Negative	Feb-21	\$ 1.5	0.1%	0.0%	14.6%	17%
WA	PacifiCorp	A3	Stable	Nov-20	\$ 3.1	0.1%	0.0%	18.4%	20%
OK	CenterPoint Energy Resources Corp.	Baa1	Positive	Jun-20	\$ 2.0	0.0%	0.0%	18.7%	17%
NY	Rochester Gas & Electric Corporation	A3	Stable	Jul-20	\$ (1.8)	(0.2%)	(0.0%)	18.2%	19%

Revenue requests represent the original filing and do not reflect settlement amounts or revised filing requests, which we expect to occur on a case-by-case basis.

Source: Standard & Poor's Global Market Intelligence and Moody's Investors Service

Moody's related publications

Sector Comments

- » [Regulated Electric and Gas Utilities – US: FAQ on credit implications of the coronavirus outbreak, March 2020](#)
- » [Regulated Electric, Gas and Water Utilities - US: Utilities demonstrate credit resilience in the face of coronavirus disruptions, March 2020](#)
- » [Credit Conditions – Global: Coronavirus and oil price shocks: managing ratings in turbulent times, March 2020](#)
- » [Regulated electric utilities – North America: Bill proposing fines for power shutoffs is credit negative for California utilities, January 2020](#)
- » [Regulated electric and gas utilities – US: California's wildfire fund is sufficiently capitalized to pay out claims, November 2019](#)
- » [Regulated electric and gas utilities – New York: Threat to revoke National Grid's operating license is credit negative for utilities, November 2019](#)

Sector In-Depth

- » [Regulated electric and gas utilities – US: Grid hardening, regulatory support key to credit quality as climate hazards worsen, March 2020](#)
- » [Regulated electric utilities – US: Intensifying climate hazards to heighten focus on infrastructure investments, January 2020](#)
- » [Regulated electric and gas utilities – New York: Threat to revoke National Grid's operating license is credit negative for utilities, November 2019](#)
- » [Electric utilities and power producers – US: Power companies on pace to reduce CO2 emissions, September 2019](#)
- » [Utilities and power companies – North America: Corporate governance assessments show generally credit-friendly characteristics, September 2019](#)
- » [Regulated electric and gas utilities – US: Recent regulatory, legislative developments have been largely credit positive, September 2019](#)
- » [Regulated electric and gas utilities - North America: Free cash flow and capital allocation: external capital needs to decline in 2019, August 2019](#)
- » [Regulated electric utilities – US: Proposed California wildfire risk legislation is credit positive but questions remain, July 2019](#)
- » [Electric and gas – US: Pipeline cybersecurity standards help plug security loophole in utility supply chain, July 2019](#)
- » [Regulated water utilities - US: M&A expands to cross-sector deals, with mixed credit implications for acquirers, March 2019](#)
- » [Regulated Utilities and Power - US: PG&E bankruptcy highlights environmental, social and governance risks in California, February 2019](#)

Outlooks

- » [Global Macro Outlook 2020-21 \(March 25, 2020 Update\): The coronavirus will cause unprecedented shock to the global economy, March 2020](#)
- » [Regulated electric and gas utilities – US: 2020 outlook moves to stable on supportive regulation, weaker but steady credit metrics, November 2019](#)

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REPORT NUMBER 1221219

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 35

Responding Witness: Daniel K. Arbough

Q-1-35. Please provide the most recent senior secured, unsecured and corporate credit ratings and outlook of KU assigned by S&P, Moody's and Fitch. Also, please provide their S&P business and financial risk profiles.

A-1-35. See the response to AG-KIUC 1-104.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 36

Responding Witness: Daniel K. Arbough

- Q-1-36. Please provide all copies of all correspondence, presentations and all other materials that KU provided to credit and equity analysts over the last two years.
- A-1-36. See attached for copies of the 2019 presentations to rating agencies. There were no presentations made in 2020. Portions of the rating agencies presentations that are nonresponsive to the request have been redacted. A presentation made to bond investors as part of the 2020 first mortgage bond offering is attached. See the link below for presentations to investors.

Presentations to Investors

<https://pplweb.investorroom.com/events>



Moody's Investors Service

July 16, 2019

Case No. 2020-00349
Attachment 1 to Response to DOD-1 Question No. 36
Page 1 of 30
Arbough



PPL Investment Proposition

7 High-Performing
Utilities in Premium
Regulatory Jurisdictions

\$27 billion
Rate Base ⁽¹⁾

\$21 billion
Market Capitalization ⁽²⁾

5-6% EPS CAGR
2018-2020 ⁽³⁾

5-7% Rate Base
CAGR
2018-2020

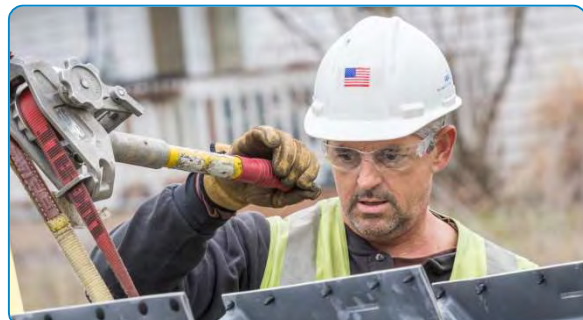
293 Consecutive
Quarterly
Dividends Paid

10-12% Annual Total Return ⁽⁴⁾

- (1) Actual as of December 31, 2018. Represents Regulatory Asset Value (RAV) for the U.K. and utility capitalization for Kentucky. U.K. based on exchange rate of \$1.35/£.
- (2) As of May 31, 2019. Does not reflect \$1.2 billion of equity to be issued under the previously announced equity forward agreement entered into May 2018.
- (3) EPS growth rate based on the midpoint of the original 2018 ongoing earnings guidance range of \$2.20 - \$2.40 per share.
- (4) Annual total return is the combination of projected annual EPS growth and dividend yield as of May 31, 2019.

Premium Regulatory Jurisdictions

Pennsylvania



PPL Electric Utilities

- FERC Formula Transmission Rates for ~50% of rate base
 - 11.68% allowed ROE
- Constructive Distribution Regulatory Mechanisms
 - Smart Meter Rider, Storm Cost Recovery, DSIC⁽¹⁾
- Forward Test Year for Distribution rate cases
- Alternative Ratemaking⁽²⁾

Kentucky



Louisville Gas & Electric (LG&E) and Kentucky Utilities (KU)

- 9.725% allowed ROE
- Environmental Cost Recovery (ECR) Mechanism⁽³⁾
- Forward Test Year for base rate cases
- Fuel Adjustment Clause
- Gas Line Tracker

United Kingdom



WPD East and West Midlands, South West and South Wales

- Pre-approved plan with base revenues set for 8 years; through March 2023⁽⁴⁾
- Real-time recovery of capex
- Incentive revenues available for strong performance and innovation
- Mechanism to retain 70% of cost efficiencies

(1) DSIC - Distribution System Improvement Charge: automatic adjustment charge that enables PPL to recover certain infrastructure improvement costs between base rate cases.
 (2) In June 2018, Pennsylvania passed Act 58, which allows for alternative ratemaking in the state.
 (3) Kentucky ECR provides near real-time recovery for approved environmental projects on the coal fleet.
 (4) RIIO-ED1 Price Control extends through March 31, 2023.



We're Investing in the Future

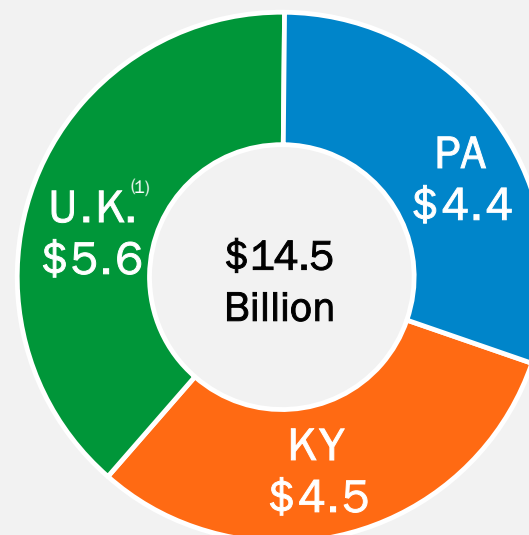
~\$3 billion annually

Investing capital to modernize and strengthen grid resilience

- Making the grid smarter and more resilient
- Strengthening physical and cyber security
- Connecting renewables
- Expanding solar
- Piloting new technology
- Optimizing KY generation fleet

Robust 5-Year Capital Plan (2019-2023)

(\$ in billions)



(1) U.K. capital plan is based on assumed exchange rates of \$1.35/£ for 2019 and \$1.40/£ for 2020-2023.

Prudent Investments, Timely Recovery Drive 5-6% EPS Growth Through 2020



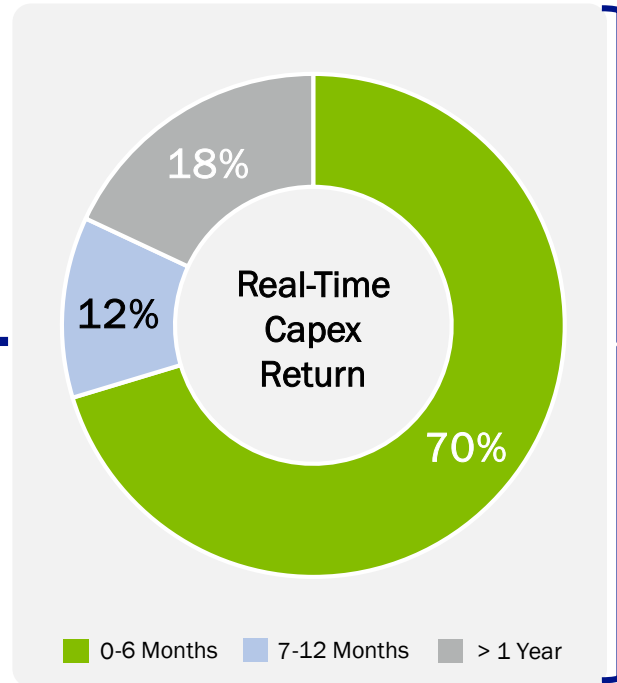
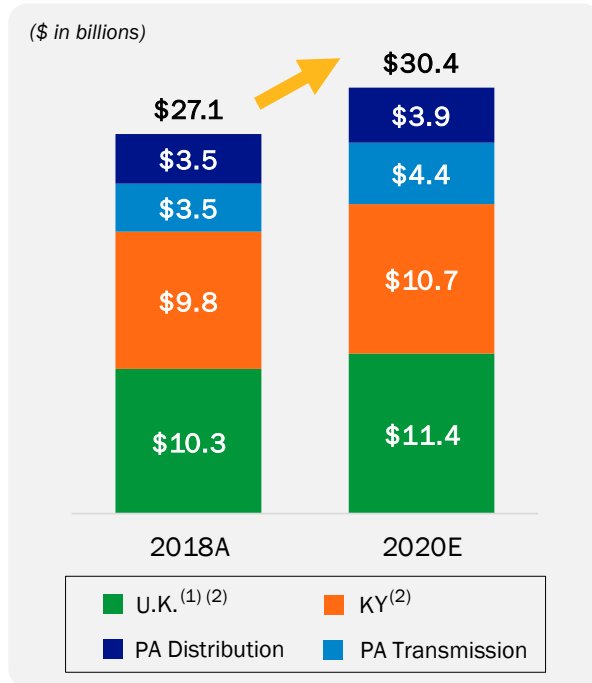
Strong Rate Base Growth

Supported by constructive regulatory recovery mechanisms

5-7% CAGR
Rate Base CAGR 2018-2020

~80% Capex
Earns Return within 1 year

EPS Growth
2018-2020

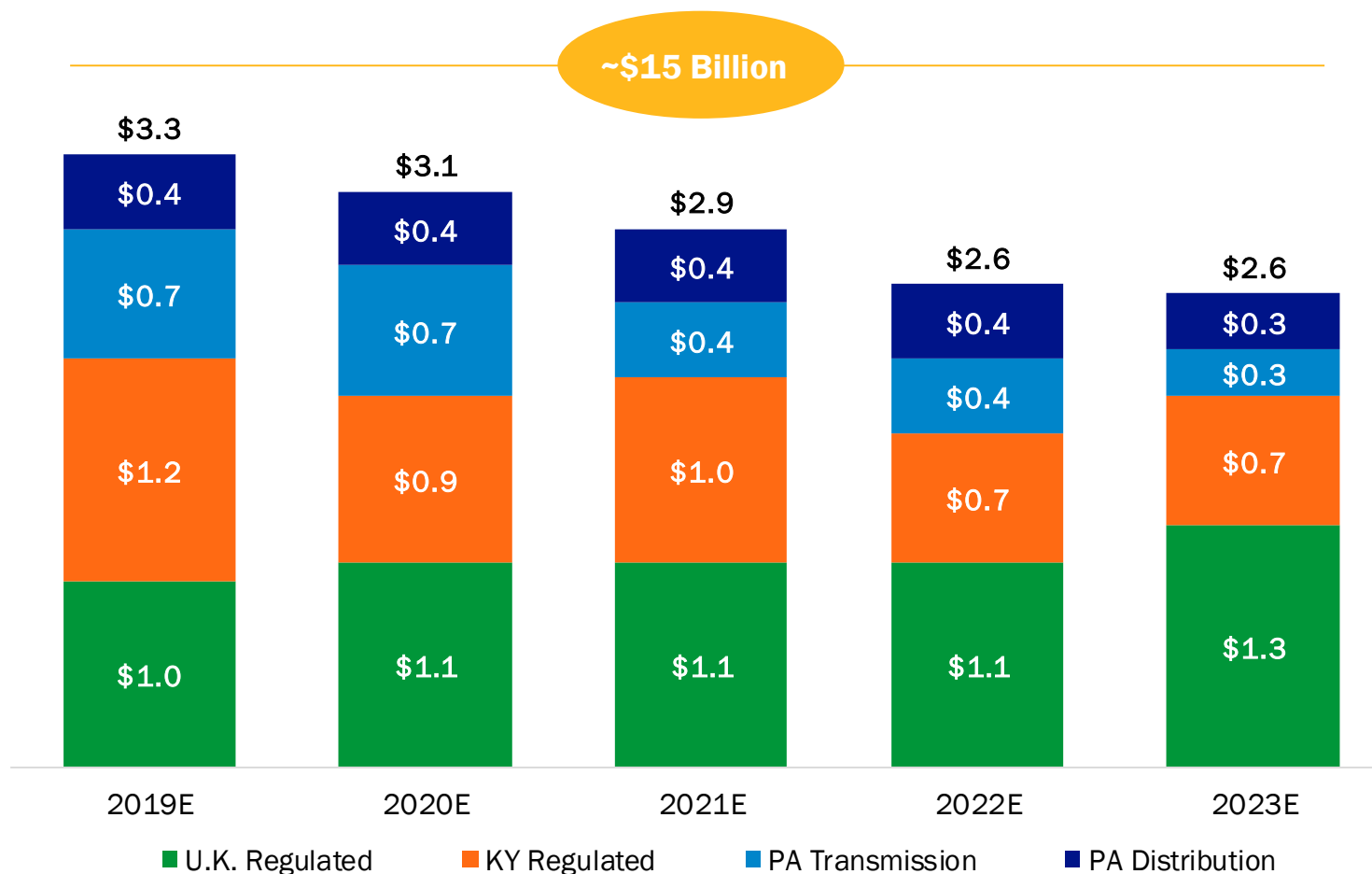


(1) Based on exchange rate of \$1.35/£ in all years for comparability purposes.
 (2) Represents Regulatory Asset Value (RAV) for U.K. Represents utility capitalization for KY.



Capital Expenditure Plan

(\$ in billions)

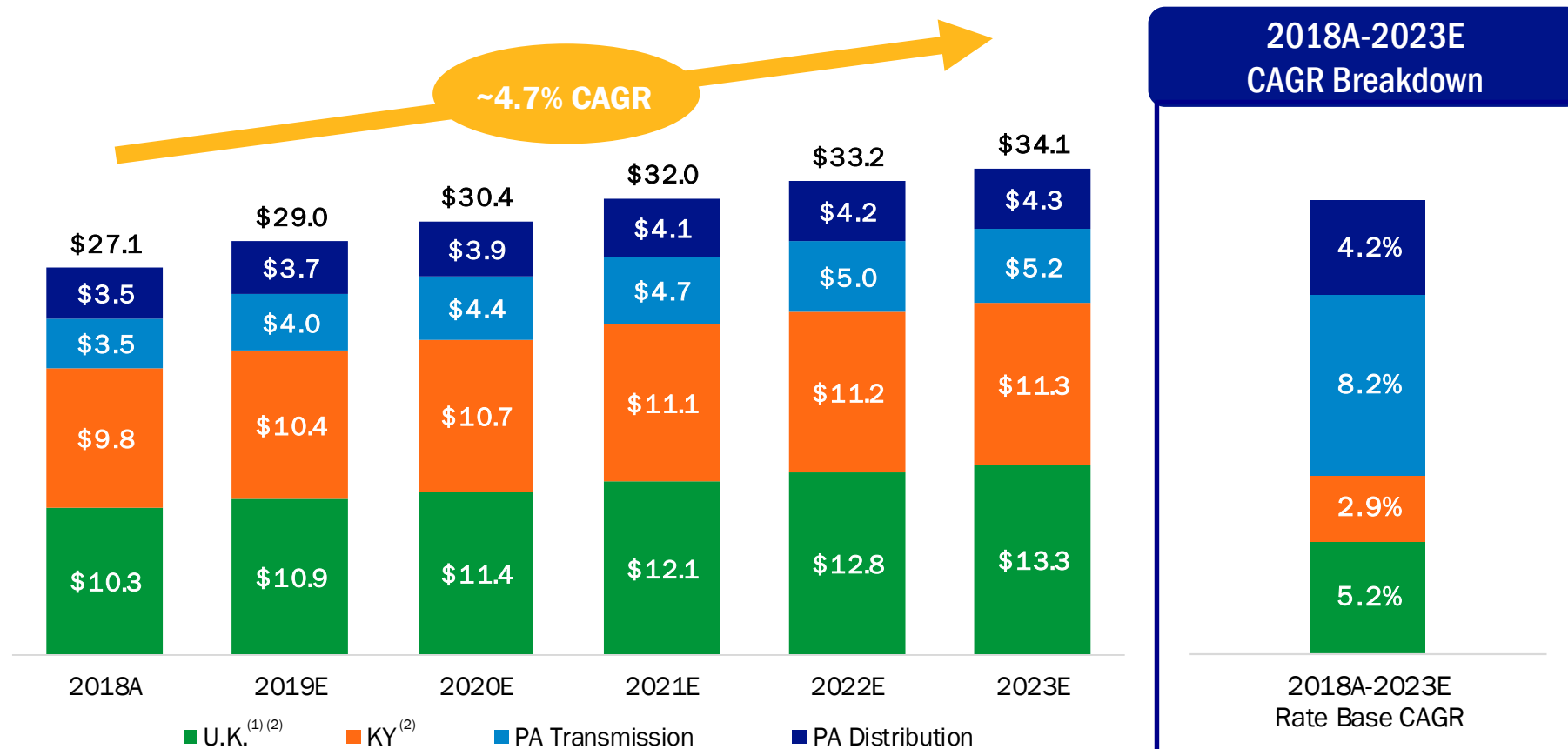


Note: U.K. capital plan is based on assumed exchange rates of \$1.35/£ for 2019 and \$1.40/£ for 2020-2023.



Projected Rate Base Growth

(\$ in billions)



(1) Based on assumed exchange rate of \$1.35/£ in all years for comparability purposes.
 (2) Represents Regulatory Asset Value (RAV) for U.K. and utility capitalization for KY.



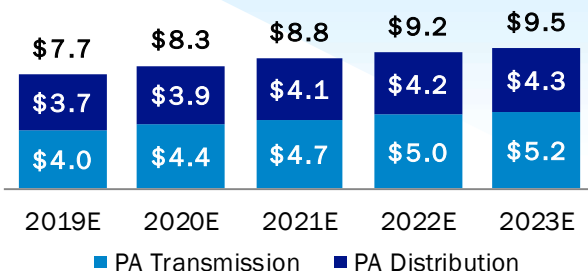
Pennsylvania Regulated Overview

\$7 billion

Rate Base ⁽¹⁾

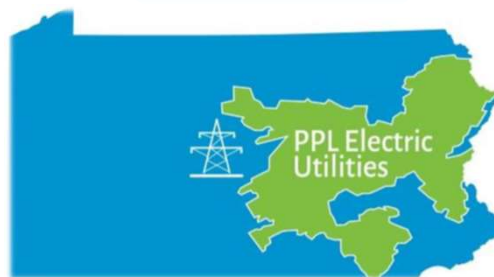
(\$ in billions)

6.3% CAGR
2018A-2023E



1.4 million

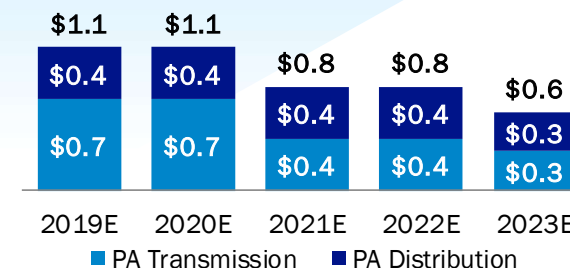
Customers



\$4.4 billion

Capex Plan

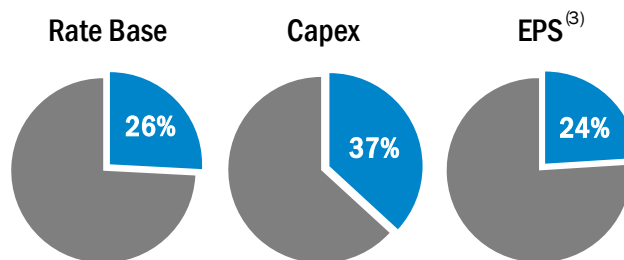
(\$ in billions)



PA Segment Highlights ⁽¹⁾

- Services provided:
 - Electric Distribution, Electric Transmission
- Service area: 10,000 square miles
- Electricity delivered: 37,497 GWh
- Operating revenues: \$2.3 billion
- Net income: \$431 million

PA Segment Proportion of PPL ⁽²⁾



Regulatory Attributes

- FERC Formula Rates
- DSIC Mechanism ⁽⁴⁾
- Smart Meter Rider
- Storm Cost Recovery
- Forward Test Year for Distribution rate cases
- Alternative Ratemaking
- Strong regulatory track record with PA PUC

(1) Actual as of December 31, 2018.

(2) Proportions based on 2018 year end actuals.

(3) Represents Earnings from Ongoing Operations, includes allocation from Corporate and Other for comparative purposes.

(4) DSIC - Distribution System Improvement Charge: automatic adjustment charge that enables PPL to recover certain infrastructure improvement costs between base rate cases.

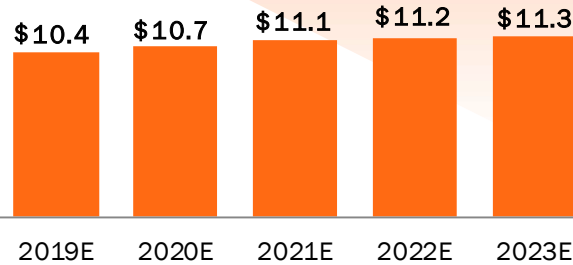
Kentucky Regulated Overview

\$9.8 billion

Rate Base ⁽¹⁾

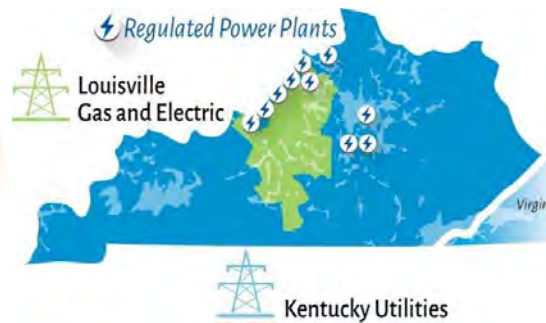
(\$ in billions)

2.9% CAGR
2018A-2023E



1.3 million

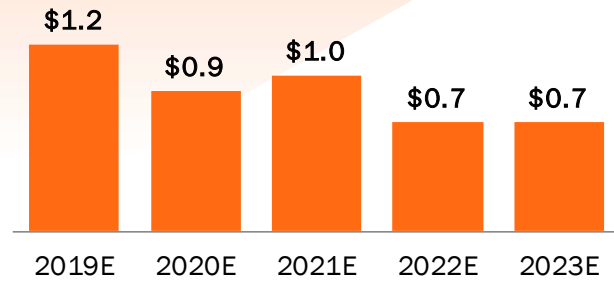
Customers



\$4.5 billion

Capex Plan

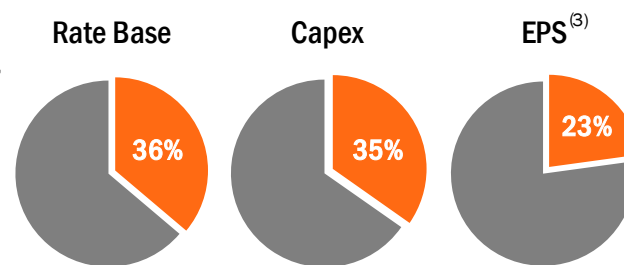
(\$ in billions)



KY Segment Highlights ⁽¹⁾

- Services provided:
 - Electric Distribution, Electric Transmission, Gas Distribution, Regulated Generation
- Service area: 9,400 square miles
- Electricity delivered: 33,650 GWh
- Operating revenues: \$3.2 billion
- Net income: \$411 million
- Operate approx. 8,000 MW of generation

KY Segment Proportion of PPL ⁽²⁾



Regulatory Attributes

- Environmental Cost Recovery (ECR) Mechanism ⁽⁴⁾
- Fuel Adjustment Clause
- Gas Line Tracker
- Forward Test Year for base rate cases
- Very competitive retail rates
- Strong regulatory track record with KPSC

(1) Actual as of December 31, 2018. Represents utility capitalization for Kentucky.

(2) Proportions based on 2018 year end actuals.

(3) Represents Earnings from Ongoing Operations, includes allocation from Corporate and Other for comparative purposes.

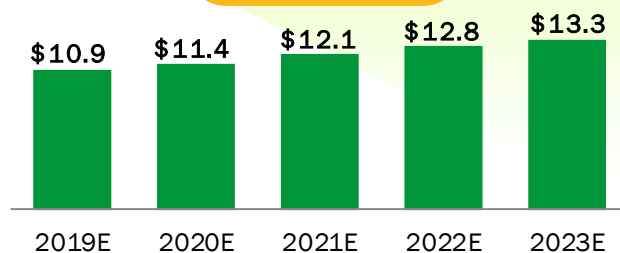
(4) Kentucky ECR provides near real-time recovery for approved environmental projects on the coal fleet.

U.K. Regulated Overview

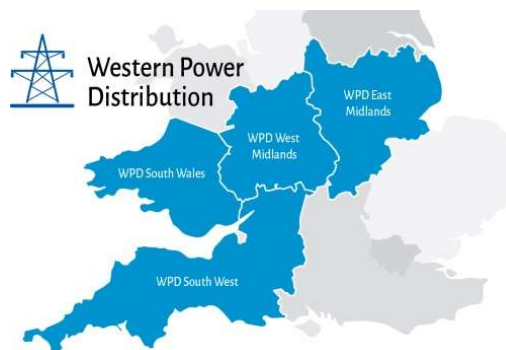
\$10.3 billion⁽¹⁾
Rate Base⁽²⁾

(\$ in billions)

5.2% CAGR
2018A-2023E

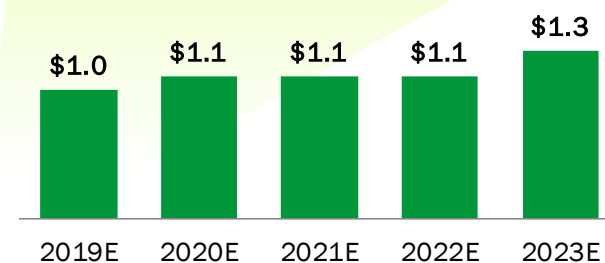


7.9 million
Customers



\$5.6 billion
Capex Plan⁽⁵⁾

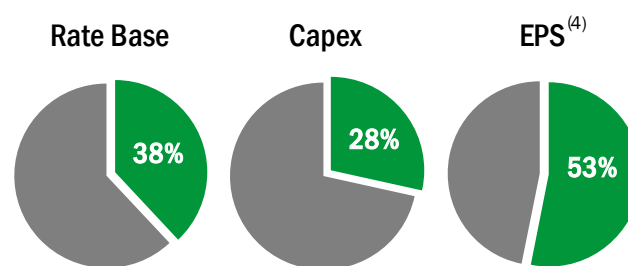
(\$ in billions)



U.K. Segment Highlights⁽¹⁾

- Services provided:
 - Electric Distribution
- Service area: 21,600 square miles
- Electricity delivered: 74,181 GWh
- Operating revenues: \$2.3 billion
- Net income: \$1,114 million
- U.K.'s largest distribution network operator

U.K. Segment Proportion of PPL⁽³⁾



Regulatory Attributes

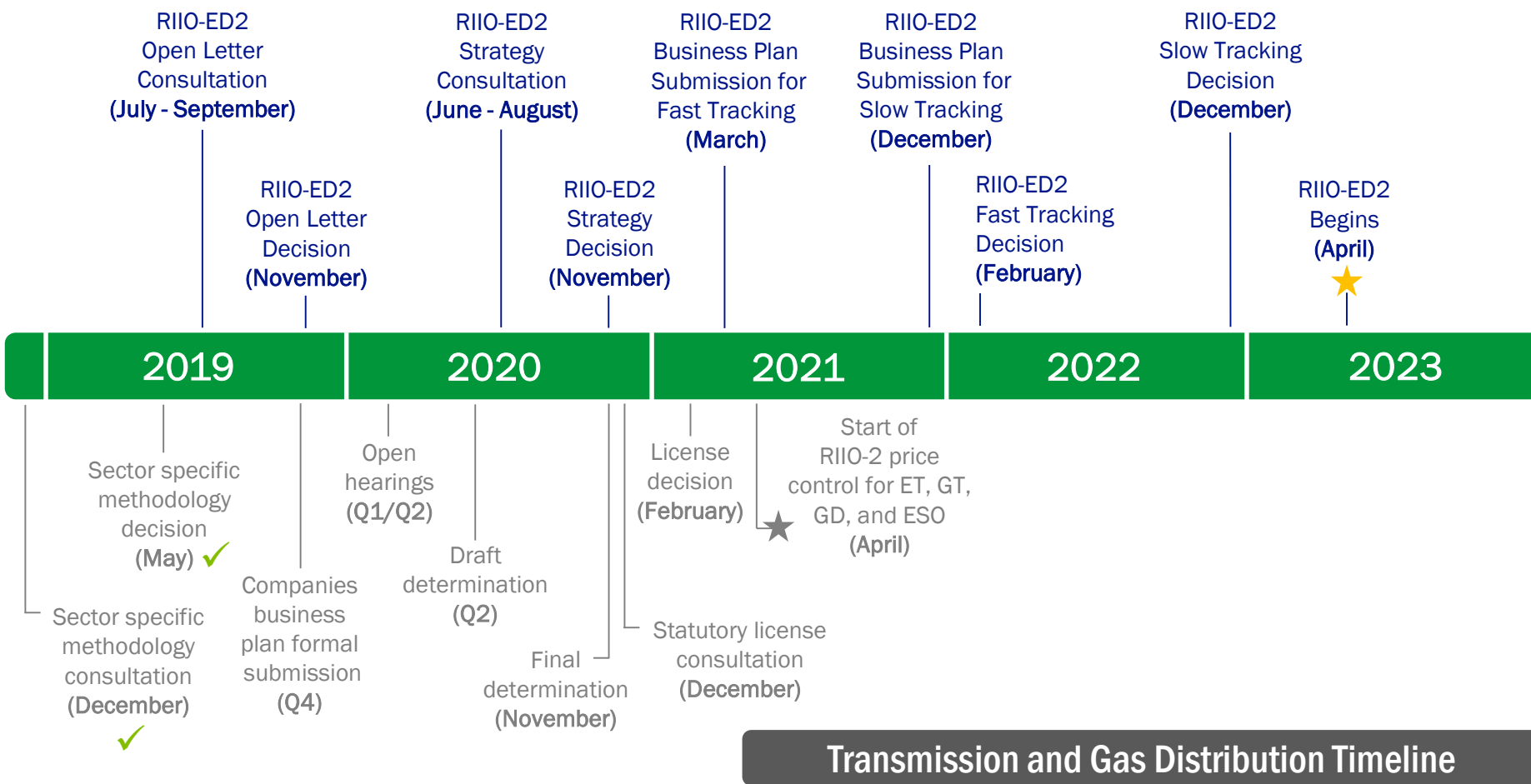
- Pre-approved plan with base revenues set for 8 years; through March 2023
- Accelerated recovery of RAV
- Inflation indexed revenue model
- Real-time recovery of capex
- Performance incentives drive improvement
- 70% of cost efficiencies retained by company
- Strong regulatory track record with Ofgem

(1) Actual as of December 31, 2018.
 (2) Represents Regulatory Asset Value (RAV) for the U.K. For comparability reflects exchange rate of \$1.35/£ for all years.
 (3) Proportions based on 2018 year end actuals.
 (4) Represents Earnings from Ongoing Operations, includes allocation from Corporate and Other for comparative purposes.
 (5) Capital plan is based on assumed exchange rate of \$1.35/£ for 2019 and \$1.40/£ for 2020-2023.

U.K. Regulated: RIIO-2 Projected Timelines



Electricity Distribution Timeline⁽¹⁾



Transmission and Gas Distribution Timeline

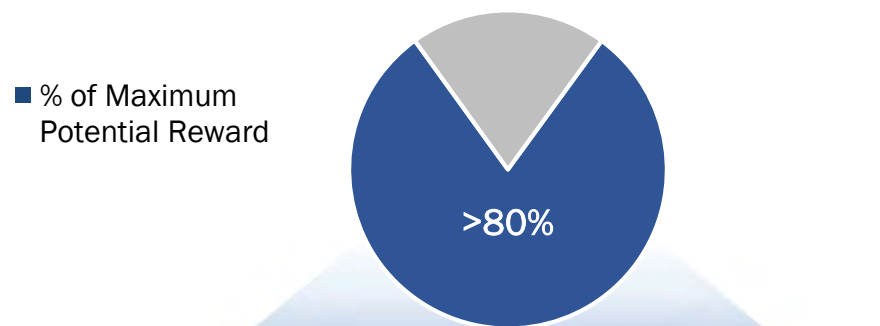
(1) Ofgem will consult on the need for Fast Tracking in RIIO-ED2 as part of the strategy consultation in June 2020. The electricity distribution timeline shown here represents the events following an Ofgem decision that allows Fast Tracking.



U.K. Regulated Incentive Revenues

WPD continues to demonstrate how premier network operators deliver value for customers and shareowners

2018/19 Earned Incentive Revenue Summary⁽¹⁾



Incentive	Reward
-----------	--------

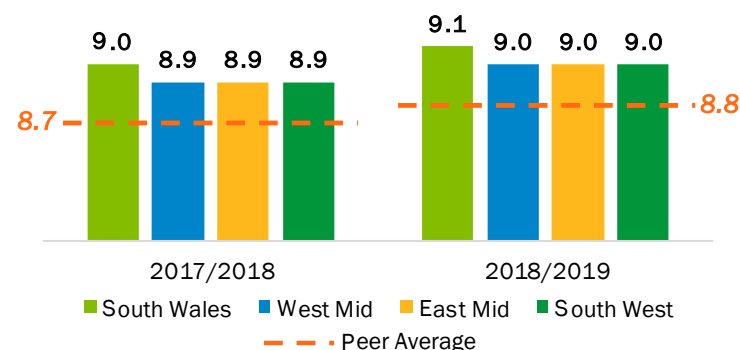
(\$ in millions)

Customer Interruptions/CML	\$76
Customer Satisfaction	28
Time to Connect	8

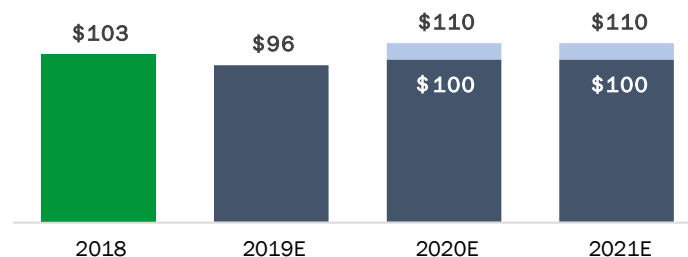
Total 2018/19 Incentive Revenue	\$112
--	--------------

Excellent Customer Satisfaction Ratings

Customer Service Rating (10 point scale)



Incentive Revenues⁽²⁾



(1) Based on exchange rate of \$1.35/£. Rewards earned in 2018/19 are received in the 2020/21 regulatory year. Values are estimates and are expected to be finalized in the Ofgem annual report, which is expected to be released in Q4 2019.

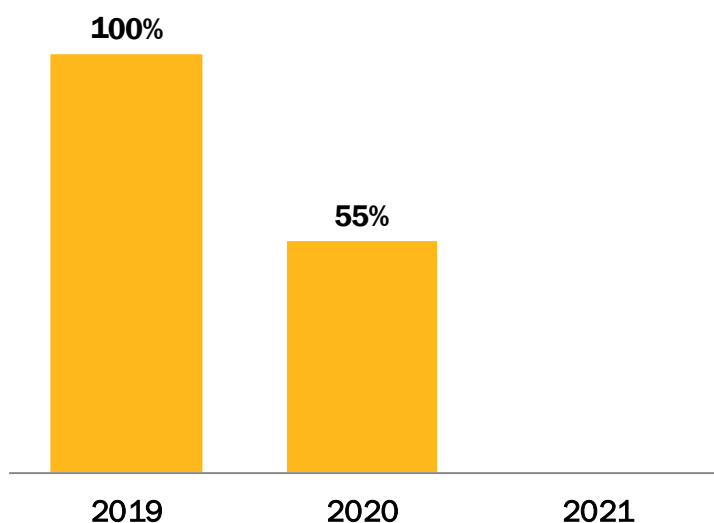
(2) Based on calendar year revenues on an exchange rate of \$1.35/£ in all years for comparability purposes. The annual incentives are reflected in customer rates on a two-year lag from the time they are earned.



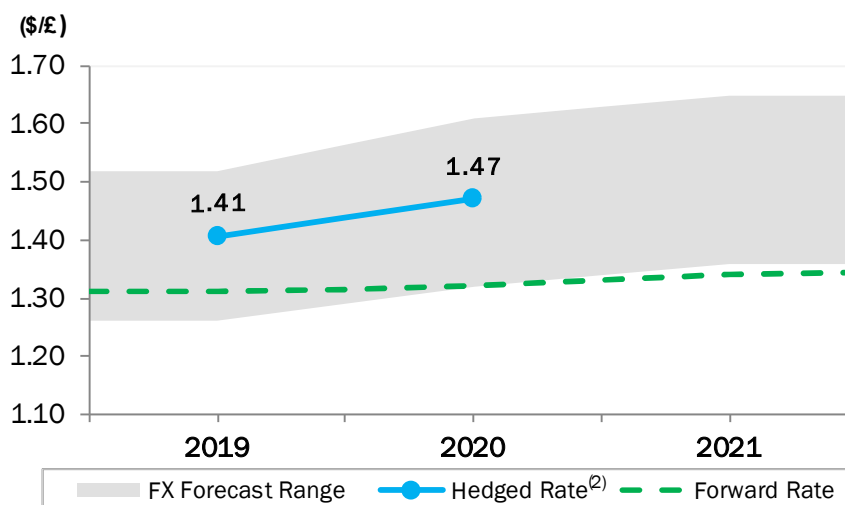
Foreign Currency Update

PPL uses a disciplined approach to hedging foreign currency risk

Foreign Currency Hedge Status ⁽¹⁾



Forward Foreign Currency Rates



Note: Forward FX rates sourced from Bloomberg as of April 29, 2019. Forecast range reflects views from up to 14 financial institutions and does not represent PPL's internal forecast. Not all institutions provide forecasts for all periods.

(1) PPL's foreign currency hedge status as of April 29, 2019.

(2) Hedge rates reflect a combination of average-rate forwards and options. Average hedge rates based on the average forward rate and the average floor in the options.



Debt Maturities

(\$ in Millions)	2019	2020	2021	2022	2023	2024 and Beyond	Total
PPL Capital Funding	\$0	\$0	\$0	\$800	\$600	\$3,130	\$4,530
PPL Electric Utilities ⁽¹⁾	0	100	400	474	90	2,675	3,739
LG&E and KU Energy	0	475	250	0	0	0	725
Louisville Gas & Electric ⁽¹⁾⁽²⁾	106	0	226	0	0	1,493	1,824
Kentucky Utilities ⁽¹⁾⁽³⁾	96	500	0	0	13	1,733	2,342
WPD plc	0	0	500	0	663	666	1,829
WPD Operating Companies ⁽⁴⁾	0	199	0	0	928	4,858	5,986
Total	\$202	\$1,274	\$1,376	\$1,274	\$2,294	\$14,555	\$20,975

Note: As of March 31, 2019.

(1) Amounts reflect the timing of any put option on municipal bonds that may be put by the holders before the bonds' final maturities.

(2) In April 2019, \$128 million of Pollution Control Revenue Bonds issued on behalf of LG&E with a put date of April 1, 2019 were remarketed and now carry a mandatory put date of April 1, 2021. LG&E also issued \$400 million of First Mortgage bonds due 2049 and repaid its \$200 million term loan due 2019.

(3) In April 2019, KU issued an additional \$300 million of its existing First Mortgage Bonds due 2045.

(4) Includes WPD (East Midlands) plc, WPD (West Midlands) plc, WPD (South Wales) plc and WPD (South West) plc.



Liquidity Profile

Entity	Facility	Expiration Date	Capacity (Millions)	Borrowed (Millions)	Letters of Credit & Commercial Paper Issued (Millions)	Unused Capacity (Millions)
PPL Capital Funding	Syndicated Credit Facility	Jan-2024	\$1,450	\$0	\$968	\$482
	Bilateral Credit Facility	Mar-2020	100	0	15	85
			\$1,550	\$0	\$983	\$567
PPL Electric Utilities	Syndicated Credit Facility	Jan-2024	\$650	\$0	\$61	\$589
Louisville Gas & Electric	Syndicated Credit Facility ⁽¹⁾	Jan-2024	\$500	\$0	\$269	\$231
	Term Loan Facility ⁽¹⁾	Oct-2019	200	200	0	0
			\$700	\$200	\$269	\$231
Kentucky Utilities	Syndicated Credit Facility ⁽²⁾	Jan-2024	\$400	\$0	\$233	\$167
	Letter of Credit Facility	Oct-2020	198	0	198	0
			\$598	\$0	\$431	\$167
WPD	WPD plc Syndicated Credit Facility ⁽³⁾	Jan-2023	£210	£151	£0	£57
	WPD (South West) Syndicated Credit Facility	Jul-2021	245	0	0	245
	WPD (East Midlands) Syndicated Credit Facility	Jul-2021	300	99	0	201
	WPD (West Midlands) Syndicated Credit Facility	Jul-2021	300	0	0	300
	Uncommitted Credit Facilities		100	0	4	96
			£1,155	£250	£4	£899

Note: As of March 31, 2019.

- (1) In April 2019, LG&E issued \$400 million of First Mortgage Bonds due 2049. The proceeds from this issuance were used to repay \$200 million of commercial paper under its syndicated credit facility and to fully repay its term loan facility.
- (2) In April 2019, KU issued \$300 million of First Mortgage Bonds due 2045. A portion of the proceeds from this issuance were used to fully repay commercial paper under its syndicated credit facility.
- (3) The unused capacity reflects the amount borrowed in GBP of £153 million as of the date borrowed.



PPL Investment Summary

- Pure-play regulated business operating in premium jurisdictions
- Strong operational performance and history of prudent investments support constructive regulatory relationships
- Competitive projected earnings growth of 5-6% through 2020⁽¹⁾
- Solid, secure dividend with commitment to future growth and an attractive 5.5% dividend yield⁽²⁾
- Proven track record of delivering commitments to shareowners and customers

(1) EPS growth rate based on the midpoint of the original 2018 ongoing earnings guidance range of \$2.20 - \$2.40 per share.

(2) Based on dividend yield as of May 31, 2019.



Sustainability Highlights



PPL's Sustainability Commitments

Energy and Environment



Advance a cleaner energy future

Encourage responsible stewardship in partnership with our customers and stakeholders to have a sustainable environmental impact

Build tomorrow's energy infrastructure



Invest in tomorrow's energy infrastructure by developing a more reliable, resilient and efficient grid that enables continued progress and a cleaner energy future

Social Responsibility



Exceed customer expectations

Provide energy safely, reliably and in an environmentally responsible manner at the lowest reasonable cost

Foster an exceptional workplace



Cultivate success by energizing an inclusive, respectful and diverse workplace that rewards performance, fosters professional development, encourages employee engagement and enables employees to achieve their full potential



Strengthen communities

Empower the success of future generations by helping to build strong communities today

Governance and Management



Create extraordinary shareowner value

Create long-term value for shareowners through fiscal discipline, continuous improvement, environmental stewardship and enduring strategic investments

Drive best-in-sector operational performance



Excel in safety, reliability, customer responsiveness and energy efficiency while maintaining a culture that fosters innovation

70%

Goal to cut the company's carbon dioxide emissions from 2010 levels by 2050

900 MW

Approximate megawatts of coal capacity retired in Kentucky 2010 - 2018

547M kWh

Amount of electricity saved from energy efficiency programs across PPL's utilities

700

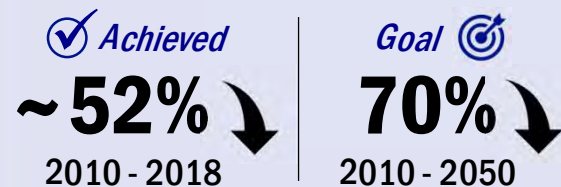
Number of electric vehicle users who participated in Electric Nation, a two-year trial of home charging in the U.K.

Delivering on our Sustainability Commitments

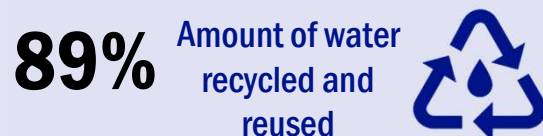


Energy and Environment

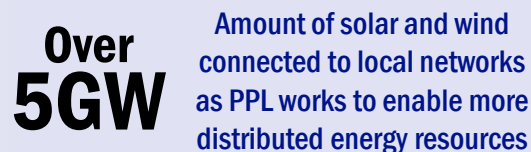
Carbon Reduction Commitment



Water Conservation



Sustainable Investments



Continuous Performance Review

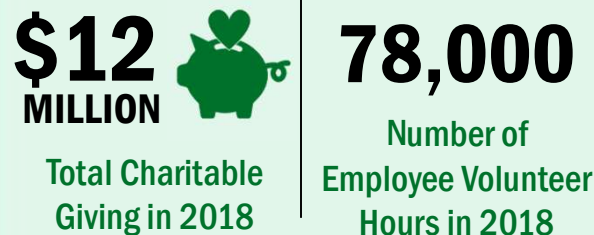
- Dedicated Board Committee
- Sustainability Report
- Climate Assessment Report
- EEI ESG Report
- CDP Survey

Social Responsibility

Workplace Equality



Giving Back to our Communities



Supplier Diversity

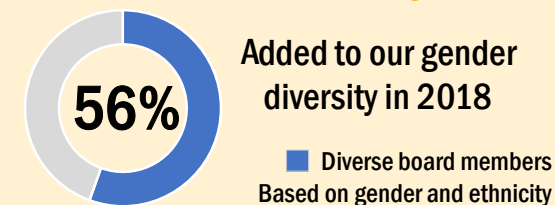


Governance and Management

2018 Awards for Excellence

- **Best Places to Work by Forbes Magazine**
- **Safety** - PPL Electric recognized for exceptionally low injury rates
- **Reliability** - PPL Electric ranked top 10 nationally by IEEE; WPD attained Customer Service Excellence Award for 26th consecutive year
- **Customer Service** - Ranked highest for residential customer satisfaction in both PA and KY in respective regions; WPD ranked highest in in Ofgem's BMCS for 7th year in a row

Board Diversity



Ensuring Cyber and Physical Security

PPL continues to make significant investments to strengthen defensive capabilities and enhance grid reliability and resiliency



PA Sustainability Highlights

Policies Driving Sustainable Investments

Alternative Ratemaking

- Recently approved legislation supported by PPL Electric grants PA utilities the option to propose different ratemaking structures, such as decoupling and performance-based rates, as we adapt our grid to new technologies and new customer expectations

Integration of Distribution Energy Resources

- PPL continues to advocate for funding levels that allow federal agencies to fund additional research and development grants and effectively administer current projects like PPL Electric's Keystone Solar Future Project

PPL Electric's ESG Commitments in Action



A support engineer dons virtual reality headgear as part of a pilot program simulating substation construction and troubleshooting

PPL Electric has converted 30% of its bucket trucks to electric lift bucket trucks, which reduces idling and diesel fuel usage

The company's goal is to equip all 277 bucket trucks with the technology by the end of 2025



Notable Achievements

**5.5
MILLION
MINUTES**

Customer minutes saved by installing ~114 motor-operated switches on higher-voltage transmission grid, which prevent sustained interruptions



98%

Percentage of transformer oil recycled by PPL Electric



**Avian
Protection
Plan**

Adopted a comprehensive plan to protect birds from coming in contact with electrical equipment & power lines



Investing in a Smarter, More Resilient Grid

Advancing Meter Technology

- PPL Electric reached a major milestone by installing more than 1.3 million new meters that enable better management of power usage, more accurate outage reporting, and new functionality that improves customer service

Ensuring Safety For All

- Deployed a system called ArcSense, which accurately detects the fault from a downed power line. ArcSense automatically trips protective relays, cutting power to the downed line. PPL expects about 1,500 locations across the service territory will have ArcSense by end of 2019

KY Sustainability Highlights

PPL Generation in Kentucky

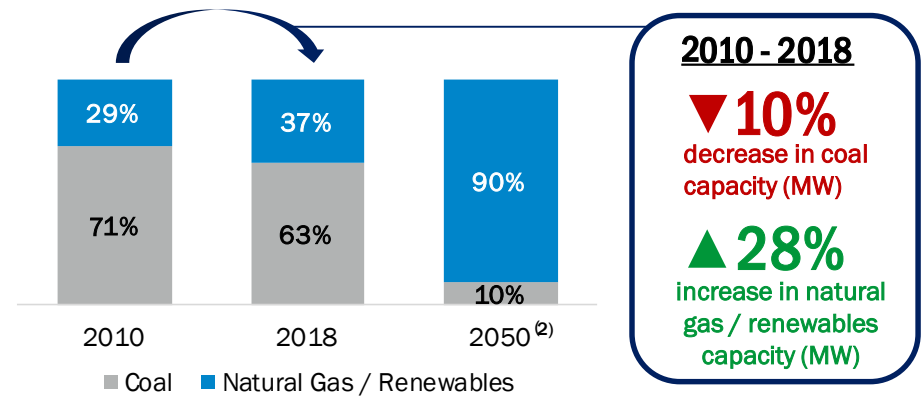
State Regulatory Environment

- Affordable, reliable coal generation remains a significant contributor to state's economy; leads to supportive state policies
- Gradual, economic retirement of coal generation planned in line with "least cost" standard
- No statewide renewable portfolio standard; customer demand and demonstration projects driving renewable development

Adapting Our Fleet

- KY retired 900MW of coal between 2010-2018 and ~300MW in Q1 2019
- Expect CO₂ emissions will meet objectives of 2°C scenario as outlined in PPL's 2017 Climate Assessment Report⁽¹⁾

Our Changing Generation Composition



Notable Achievements

**29%
DECREASE**

Reduction in interruptions of electric service for LG&E and KU customers since 2011



49%

Percentage of gypsum byproduct that is beneficially reused by LG&E and KU



**since
1995**

LG&E and KU have been a corporate sponsor of the Ohio River Sweep, where employee volunteers remove litter and debris from the banks of the Ohio River



Advancing a Cleaner Energy Future

Advancing Solar in Kentucky

- The first 500kW section of LG&E and KU's new Solar Share facility is expected to become operational this summer

Green Energy Tariff

- Promotes renewable energy growth and economic development in Kentucky by providing customers with more options to support development of renewable energy resources

Technology and Innovation – Energy Storage

- Collaboration with the Electric Power Research Institute (EPRI), allows LG&E and KU to develop, test and evaluate the potential benefits of energy storage and battery technologies resources

(1) Scenario focused on limiting global warming to below 2° Celsius.

(2) Represents potential generation mix based on a 55-year operating life under all 3 scenarios analyzed in PPL's 2017 Climate Assessment Report.

U.K. Sustainability Highlights

U.K. Initiatives Driving Sustainable Investments

U.K. Climate Change Targets

- To “reduce emissions by at least 80% of 1990 levels by 2050” ⁽¹⁾

Decarbonizing Heat

- The U.K. plans to “introduce a Future Homes standard, mandating the end of fossil fuel heating systems in all new homes from 2025” ⁽²⁾

Move Away from Combustion Engine Vehicles

- Includes ending the sale of new conventional gasoline and diesel automobiles in the U.K. by 2040 ⁽³⁾

WPD’s ESG Commitments in Action



As part of a community energy project that could be the shape of things to come, WPD has carried out a new connection to Europe’s largest community battery

A WPD lineworker completes a demonstration during a public safety event



Notable Achievements

88%

Percent of WPD customers who have their power restored within one hour of a high-voltage fault



68%

Percentage of total waste that is recycled by WPD



13%

Reduction in WPD’s business carbon footprint compared to 2012/13



Advancing a Cleaner Energy Future

Distribution System Operator - Flexibility

- Enhanced focus on building a smarter, more secure grid that has the flexibility to accommodate distributed energy resources and support new capacity via non-network solutions, such as energy storage and microgrids
- WPD has connected 186,000 sites providing over 9.3GW of distributed generation

Expanding Electric Vehicle Infrastructure

- WPD estimates it will have 1.3 million EVs on its network by 2028 requiring more than £0.5 billion of additional reinforcement

Heat Pump Forecasts

- WPD estimates 210,000 HPs to be installed on WPD’s network by 2028, adding 320MW of peak demand. This would drive more than £100 million of additional network reinforcement by 2028

(1) U.K. Climate Change Act 2008.

(2) From the Chancellor of the Exchequers Spring Statement in the House of Commons on March 13, 2019.

(3) From the Chancellor of the Exchequers Spring Statement in the House of Commons on March 13, 2019, influenced by the Committee on Climate Change 2018 Progress Report to Parliament.



Financial Metrics



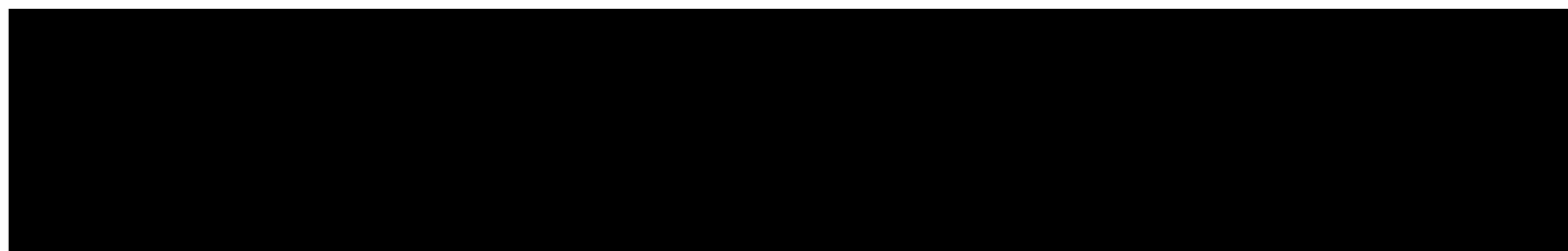
Financial Metrics

2019

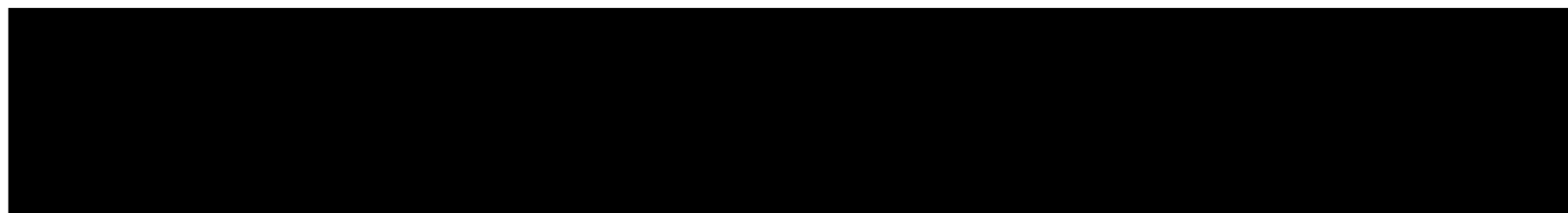
2020

2021

PPL Corporation (PPL)



PPL Electric Utilities Corporation (EU)



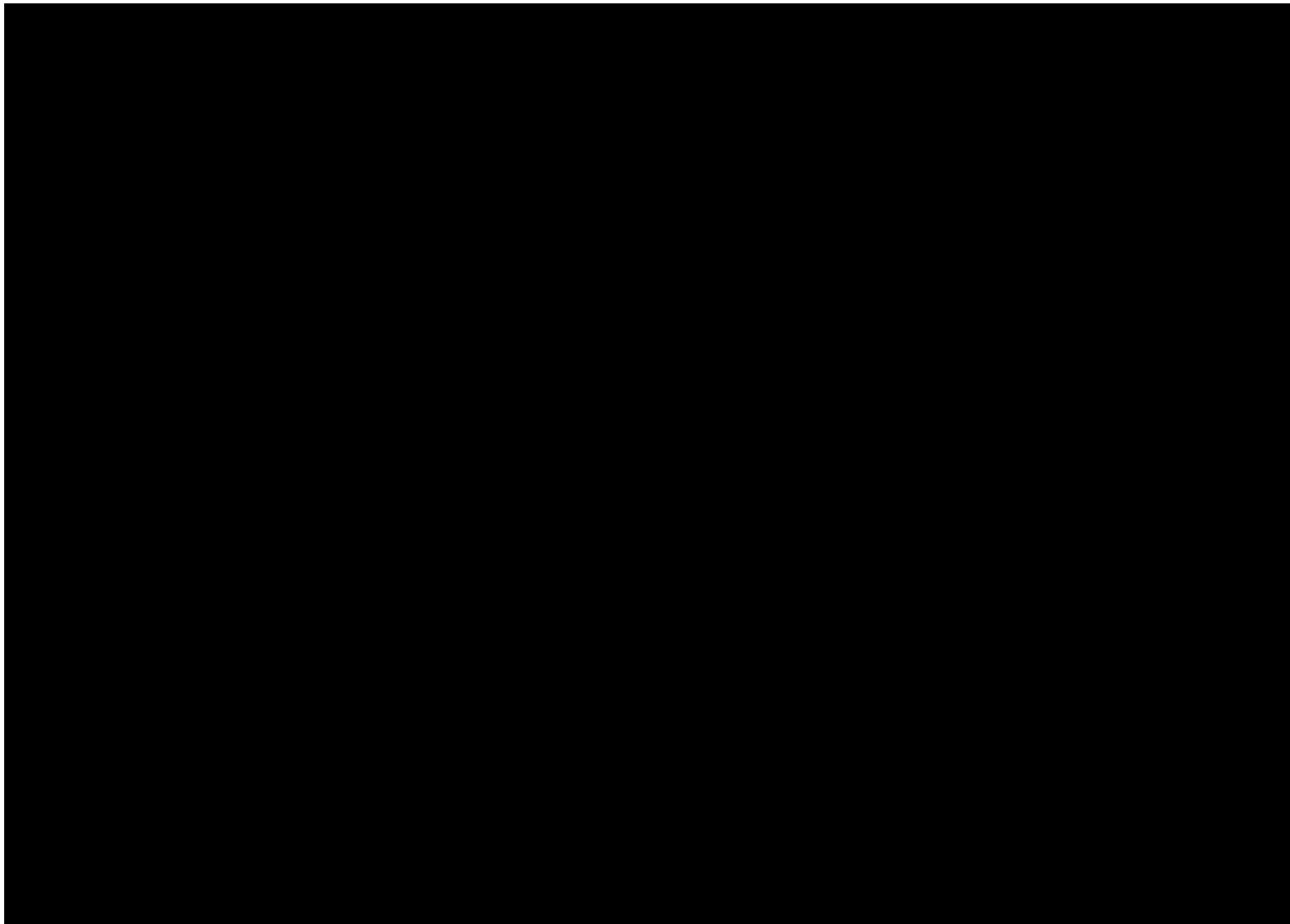


Financial Metrics, continued

	2019	2020	2021
LG&E and KU Energy LLC (LKE)			
CFO / Total Debt	15.1%	15.8%	16.4%
CFO - Dividends / Total Debt	11.0%	11.3%	12.0%
CFO + Interest / Interest	4.6x	4.5x	4.5x
Total Debt / Total Capital	52.3%	51.5%	50.8%
Kentucky Utilities Company (KU)			
CFO / Total Debt	22.2%	23.0%	22.6%
CFO - Dividends / Total Debt	13.7%	12.3%	12.8%
CFO + Interest / Interest	6.3x	6.1x	5.9x
Total Debt / Total Capital	37.5%	37.1%	37.3%
Louisville Gas and Electric Company (LG&E)			
CFO / Total Debt	21.9%	22.8%	21.3%
CFO - Dividends / Total Debt	14.8%	12.6%	11.8%
CFO + Interest / Interest	6.2x	6.2x	5.9x
Total Debt / Total Capital	38.7%	38.2%	38.4%

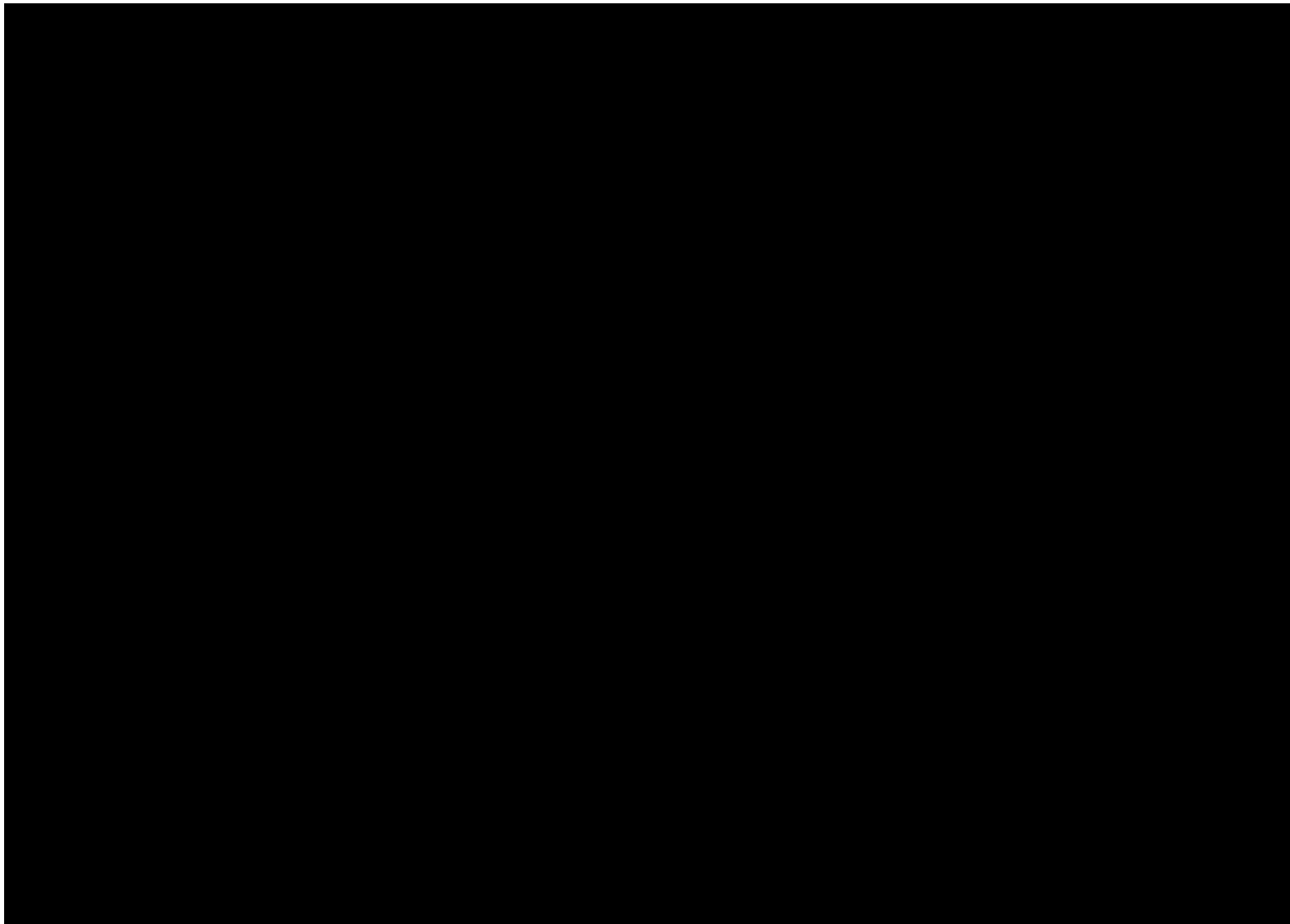
Financial Metrics Details

PPL Corporation



Financial Metrics Details

PPL Electric Utilities Corporation



Financial Metrics Details

LG&E and KU Energy LLC



(Thousands of Dollars)	2019	2020	2021
<u>Cash from Operations (CFO) / Total Debt</u>			
Cash from Operations	\$ 977,908	\$ 1,061,534	\$ 1,146,901
Adjustments	40,378	10,819	(21,327)
<i>CFO - Adjusted</i>	\$ 1,018,286	\$ 1,072,353	\$ 1,125,573
Long-term Debt	\$ 5,451,143	\$ 4,929,124	\$ 4,684,341
Short-term Debt	178,833	360,133	525,789
Intercompany Debt	805,341	1,225,205	1,418,649
Adjustments	295,869	252,734	215,878
<i>Total Debt - Adjusted</i>	\$ 6,731,186	\$ 6,767,195	\$ 6,844,657
CFO / Total Debt	15.1%	15.8%	16.4%
<u>CFO - Dividends / Total Debt</u>			
<i>CFO - Adjusted</i>	\$ 1,018,286	\$ 1,072,353	\$ 1,125,573
Less: Dividends to Parent	(275,000)	(306,600)	(305,200)
<i>CFO - Dividends</i>	\$ 743,286	\$ 765,753	\$ 820,373
<i>Total Debt - Adjusted</i>	\$ 6,731,186	\$ 6,767,195	\$ 6,844,657
CFO - Dividends / Total Debt	11.0%	11.3%	12.0%
<u>CFO + Interest / Interest</u>			
<i>CFO - Adjusted</i>	\$ 1,018,286	\$ 1,072,353	\$ 1,125,573
Interest	284,429	304,183	322,196
<i>CFO + Interest</i>	\$ 1,302,715	\$ 1,376,536	\$ 1,447,769
CFO + Interest / Interest	4.6x	4.5x	4.5x
<u>Total Debt / Total Capital</u>			
<i>Total Debt - Adjusted</i>	\$ 6,731,186	\$ 6,767,195	\$ 6,844,657
Common Equity	4,949,014	5,102,164	5,280,894
Adjustments	1,194,114	1,273,040	1,347,047
<i>Total Capital</i>	\$ 12,874,313	\$ 13,142,399	\$ 13,472,599
Total Debt / Total Capital	52.3%	51.5%	50.8%

Financial Metrics Details

Kentucky Utilities Company



(Thousands of Dollars)	2019	2020	2021
<u>Cash from Operations (CFO) / Total Debt</u>			
Cash from Operations	\$ 576,221	\$ 618,335	\$ 635,360
Adjustments	20,700	6,438	(6,419)
<i>CFO - Adjusted</i>	\$ 596,921	\$ 624,773	\$ 628,941
Long-term Debt	\$ 2,620,596	\$ 2,570,038	\$ 2,572,863
Short-term Debt	36,534	118,147	189,554
Adjustments	31,108	25,228	18,061
<i>Total Debt - Adjusted</i>	\$ 2,688,239	\$ 2,713,413	\$ 2,780,479
CFO / Total Debt	22.2%	23.0%	22.6%
<u>CFO - Dividends / Total Debt</u>			
<i>CFO - Adjusted</i>	\$ 596,921	\$ 624,773	\$ 628,941
Less: Dividends to Parent	(229,100)	(290,600)	(273,300)
<i>CFO - Dividends</i>	\$ 367,821	\$ 334,173	\$ 355,641
<i>Total Debt - Adjusted</i>	\$ 2,688,239	\$ 2,713,413	\$ 2,780,479
CFO - Dividends / Total Debt	13.7%	12.3%	12.8%
<u>CFO + Interest / Interest</u>			
<i>CFO - Adjusted</i>	\$ 596,921	\$ 624,773	\$ 628,941
Interest	113,348	121,700	129,386
<i>CFO + Interest</i>	\$ 710,269	\$ 746,474	\$ 758,327
CFO + Interest / Interest	6.3x	6.1x	5.9x
<u>Total Debt / Total Capital</u>			
<i>Total Debt - Adjusted</i>	\$ 2,688,239	\$ 2,713,413	\$ 2,780,479
Common Equity	3,586,392	3,660,671	3,741,072
Adjustments	894,079	939,088	938,901
<i>Total Capital</i>	\$ 7,168,710	\$ 7,313,172	\$ 7,460,452
Total Debt / Total Capital	37.5%	37.1%	37.3%

Financial Metrics Details

Louisville Gas and Electric Company



(Thousands of Dollars)	2019	2020	2021
<u>Cash from Operations (CFO) / Total Debt</u>			
Cash from Operations	\$ 472,657	\$ 513,214	\$ 520,206
Adjustments	18,097	4,192	(17,201)
<i>CFO - Adjusted</i>	\$ 490,754	\$ 517,406	\$ 503,005
Long-term Debt	\$ 2,106,694	\$ 2,109,326	\$ 2,111,478
Short-term Debt	104,620	140,824	234,164
Adjustments	31,931	17,705	12,136
<i>Total Debt - Adjusted</i>	\$ 2,243,245	\$ 2,267,855	\$ 2,357,777
CFO / Total Debt	21.9%	22.8%	21.3%
<u>CFO - Dividends / Total Debt</u>			
<i>CFO - Adjusted</i>	\$ 490,754	\$ 517,406	\$ 503,005
Less: Dividends to Parent	(157,800)	(232,000)	(223,900)
<i>CFO - Dividends</i>	\$ 332,954	\$ 285,406	\$ 279,105
<i>Total Debt - Adjusted</i>	\$ 2,243,245	\$ 2,267,855	\$ 2,357,777
CFO - Dividends / Total Debt	14.8%	12.6%	11.8%
<u>CFO + Interest / Interest</u>			
<i>CFO - Adjusted</i>	\$ 490,754	\$ 517,406	\$ 503,005
Interest	93,928	99,482	101,722
<i>CFO + Interest</i>	\$ 584,682	\$ 616,888	\$ 604,727
CFO + Interest / Interest	6.2x	6.2x	5.9x
<u>Total Debt / Total Capital</u>			
<i>Total Debt - Adjusted</i>	\$ 2,243,245	\$ 2,267,855	\$ 2,357,777
Common Equity	2,835,047	2,910,855	3,015,265
Adjustments	717,674	760,487	767,053
<i>Total Capital</i>	\$ 5,795,966	\$ 5,939,197	\$ 6,140,095
Total Debt / Total Capital	38.7%	38.2%	38.4%



S&P Global Ratings

August 26, 2019



PPL Investment Proposition

7 High-Performing
Utilities in Premium
Regulatory Jurisdictions

\$27 billion
Rate Base ⁽¹⁾

\$21 billion
Market Capitalization ⁽²⁾

5-6% EPS CAGR
2018-2020 ⁽³⁾

5-7% Rate Base
CAGR
2018-2020

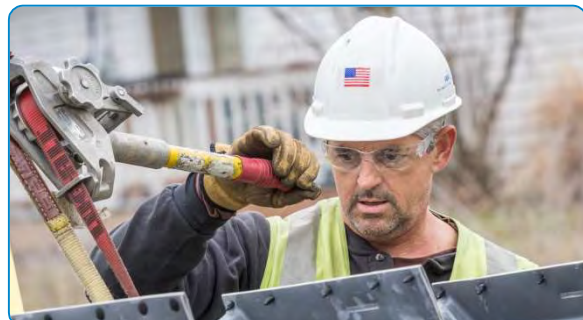
294 Consecutive
Quarterly
Dividends Paid

10-12% Annual Total Return ⁽⁴⁾

- (1) Actual as of December 31, 2018. Represents Regulatory Asset Value (RAV) for the U.K. and utility capitalization for Kentucky. U.K. based on exchange rate of \$1.35/£.
- (2) As of August 16, 2019. Does not reflect \$1.2 billion of equity to be issued under the previously announced equity forward agreement entered into May 2018.
- (3) EPS growth rate based on the midpoint of the original 2018 ongoing earnings guidance range of \$2.20 - \$2.40 per share.
- (4) Annual total return is the combination of projected annual EPS growth and dividend yield as of August 16, 2019.

Premium Regulatory Jurisdictions

Pennsylvania



PPL Electric Utilities

- FERC Formula Transmission Rates for ~50% of rate base
 - 11.68% allowed ROE
- Constructive Distribution Regulatory Mechanisms
 - Smart Meter Rider, Storm Cost Recovery, DSIC⁽¹⁾
- Forward Test Year for Distribution rate cases
- Alternative Ratemaking⁽²⁾

Kentucky



Louisville Gas & Electric (LG&E) and Kentucky Utilities (KU)

- 9.725% allowed ROE
- Environmental Cost Recovery (ECR) Mechanism⁽³⁾
- Forward Test Year for base rate cases
- Fuel Adjustment Clause
- Gas Line Tracker

United Kingdom



WPD East and West Midlands, South West and South Wales

- Pre-approved plan with base revenues set for 8 years; through March 2023⁽⁴⁾
- Real-time recovery of capex
- Incentive revenues available for strong performance and innovation
- Mechanism to retain 70% of cost efficiencies

(1) DSIC - Distribution System Improvement Charge: automatic adjustment charge that enables PPL to recover certain infrastructure improvement costs between base rate cases.
 (2) In June 2018, Pennsylvania passed Act 58, which allows for alternative ratemaking in the state.
 (3) Kentucky ECR provides near real-time recovery for approved environmental projects on the coal fleet.
 (4) RIIO-ED1 Price Control extends through March 31, 2023.



We're Investing in the Future

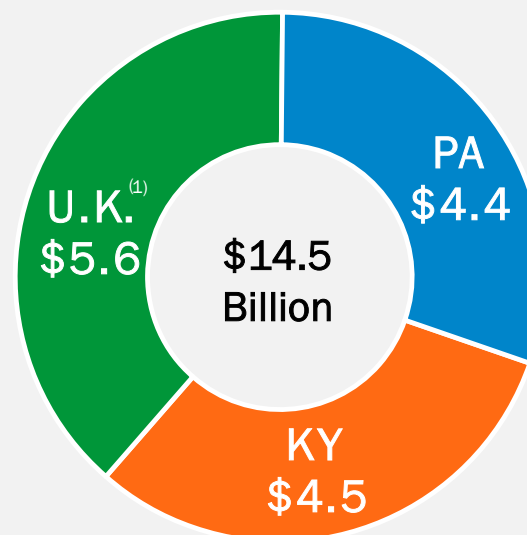
~\$3 billion annually

Investing capital to modernize and strengthen grid resilience

- Making the grid smarter and more resilient
- Strengthening physical and cyber security
- Connecting renewables
- Expanding solar
- Piloting new technology
- Optimizing KY generation fleet

Robust 5-Year Capital Plan (2019-2023)

(\$ in billions)



(1) U.K. capital plan is based on assumed exchange rates of \$1.35/£ for 2019 and \$1.40/£ for 2020-2023.

Prudent Investments, Timely Recovery Drive 5-6% EPS Growth Through 2020



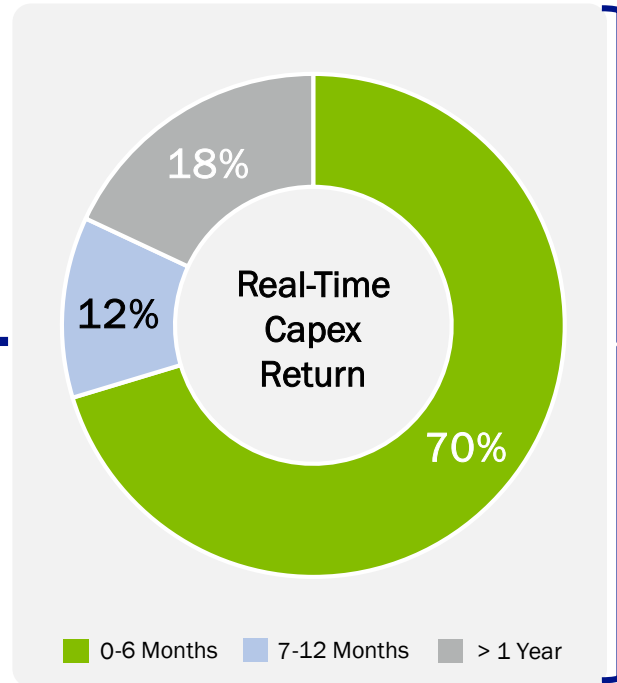
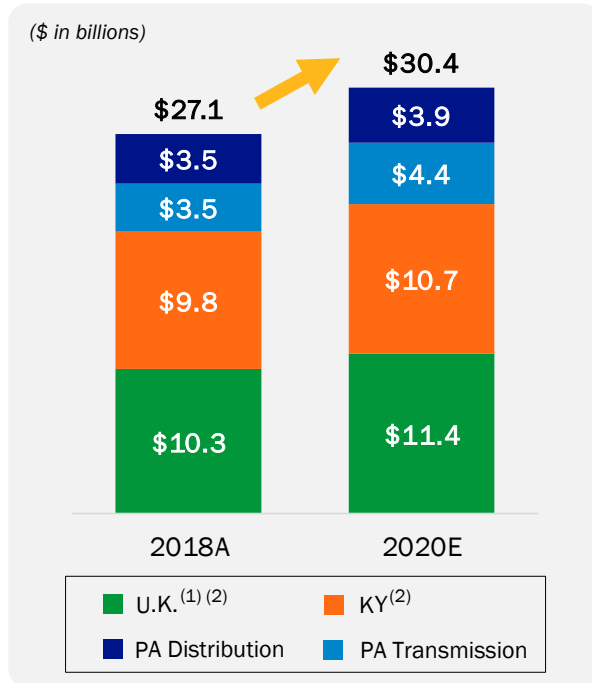
Strong Rate Base Growth

Supported by constructive regulatory recovery mechanisms

5-7% CAGR
Rate Base CAGR 2018-2020

~80% Capex
Earns Return within 1 year

EPS Growth
2018-2020

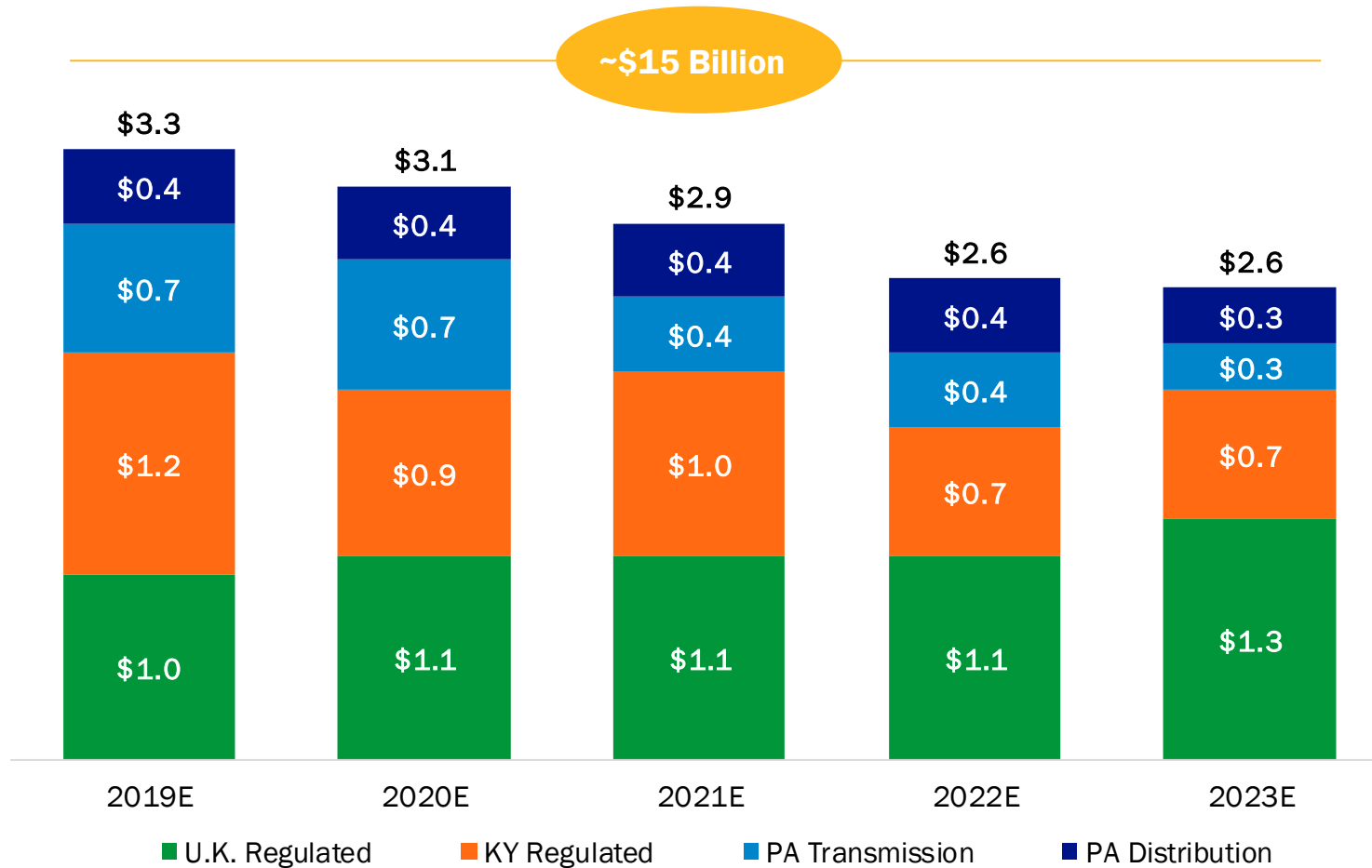


(1) Based on exchange rate of \$1.35/£ in all years for comparability purposes.
 (2) Represents Regulatory Asset Value (RAV) for U.K. Represents utility capitalization for KY.



Capital Expenditure Plan

(\$ in billions)



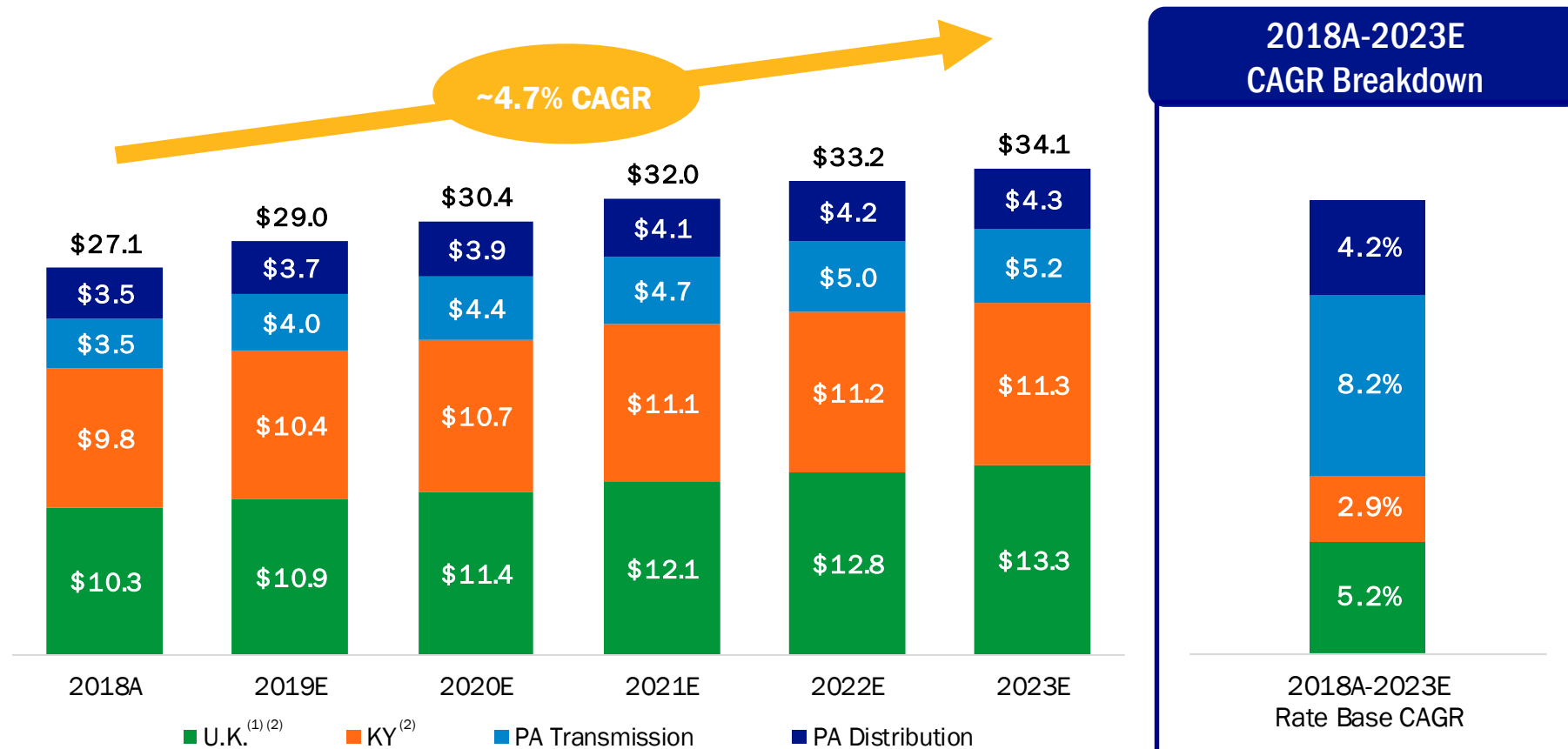
Note: U.K. capital plan is based on assumed exchange rates of \$1.35/£ for 2019 and \$1.40/£ for 2020-2023.





Projected Rate Base Growth

(\$ in billions)



(1) Based on assumed exchange rate of \$1.35/£ in all years for comparability purposes.
 (2) Represents Regulatory Asset Value (RAV) for U.K. and utility capitalization for KY.



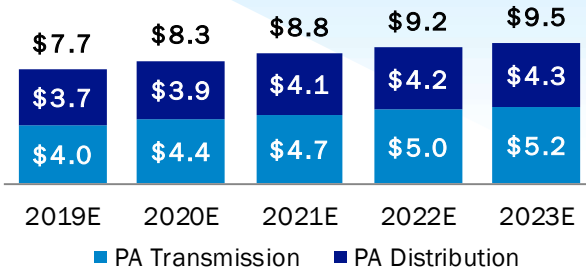
Pennsylvania Regulated Overview

\$7 billion

Rate Base ⁽¹⁾

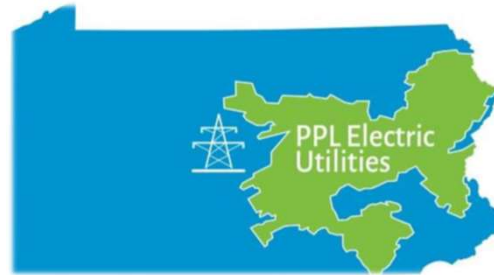
(\$ in billions)

6.3% CAGR
2018A-2023E



1.4 million

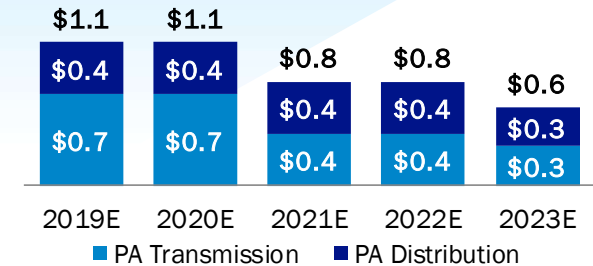
Customers



\$4.4 billion

Capex Plan

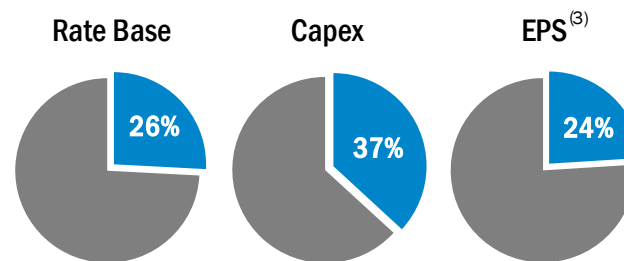
(\$ in billions)



PA Segment Highlights ⁽¹⁾

- Services provided:
 - Electric Distribution, Electric Transmission
- Service area: 10,000 square miles
- Electricity delivered: 37,497 GWh
- Operating revenues: \$2.3 billion
- Net income: \$431 million

PA Segment Proportion of PPL ⁽²⁾



Regulatory Attributes

- FERC Formula Rates
- DSIC Mechanism ⁽⁴⁾
- Smart Meter Rider
- Storm Cost Recovery
- Forward Test Year for Distribution rate cases
- Alternative Ratemaking
- Strong regulatory track record with PA PUC

(1) Actual as of December 31, 2018.

(2) Proportions based on 2018 year end actuals.

(3) Represents Earnings from Ongoing Operations, includes allocation from Corporate and Other for comparative purposes.

(4) DSIC - Distribution System Improvement Charge: automatic adjustment charge that enables PPL to recover certain infrastructure improvement costs between base rate cases.

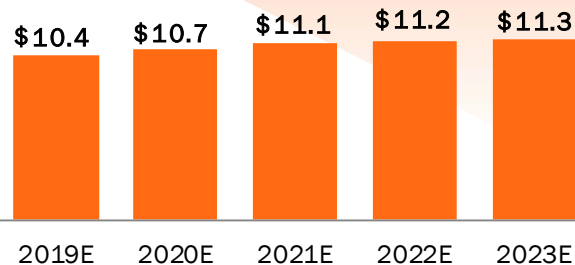
Kentucky Regulated Overview

\$9.8 billion

Rate Base ⁽¹⁾

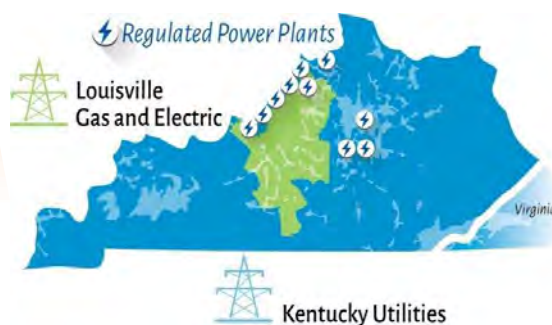
(\$ in billions)

2.9% CAGR
2018A-2023E



1.3 million

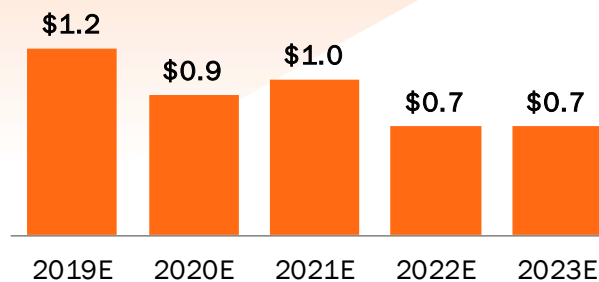
Customers



\$4.5 billion

Capex Plan

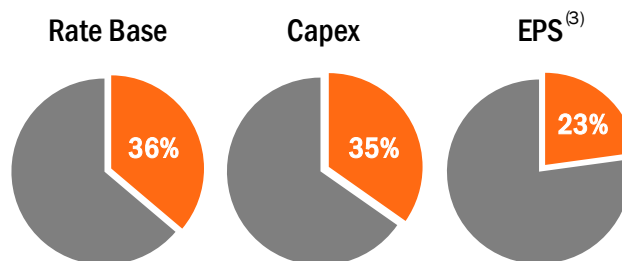
(\$ in billions)



KY Segment Highlights ⁽¹⁾

- Services provided:
 - Electric Distribution, Electric Transmission, Gas Distribution, Regulated Generation
- Service area: 9,400 square miles
- Electricity delivered: 33,650 GWh
- Operating revenues: \$3.2 billion
- Net income: \$411 million
- Operate approx. 8,000 MW of generation

KY Segment Proportion of PPL ⁽²⁾



Regulatory Attributes

- Environmental Cost Recovery (ECR) Mechanism ⁽⁴⁾
- Fuel Adjustment Clause
- Gas Line Tracker
- Forward Test Year for base rate cases
- Very competitive retail rates
- Strong regulatory track record with KPSC

(1) Actual as of December 31, 2018. Represents utility capitalization for Kentucky.
 (2) Proportions based on 2018 year end actuals.
 (3) Represents Earnings from Ongoing Operations, includes allocation from Corporate and Other for comparative purposes.
 (4) Kentucky ECR provides near real-time recovery for approved environmental projects on the coal fleet.

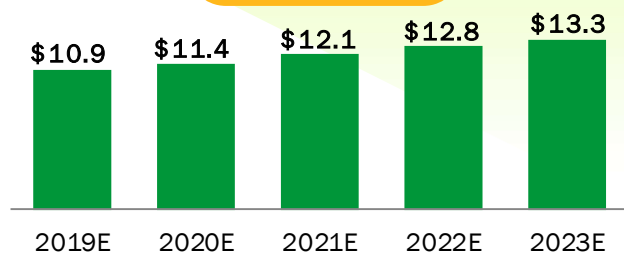


U.K. Regulated Overview

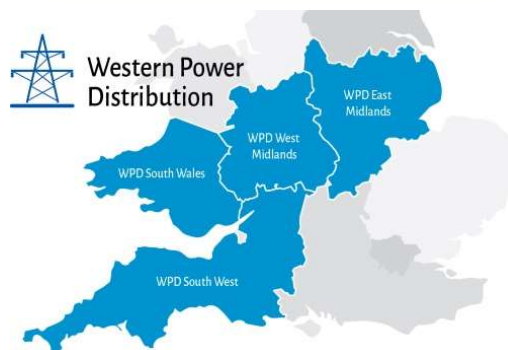
\$10.3 billion⁽¹⁾
Rate Base⁽²⁾

(\$ in billions)

5.2% CAGR
2018A-2023E

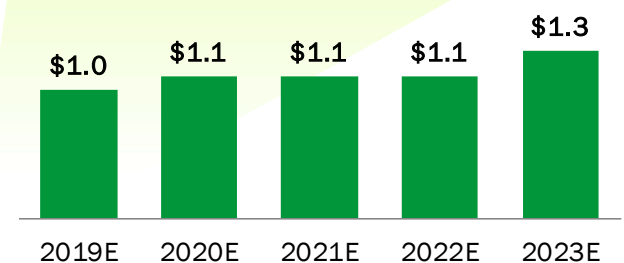


7.9 million
Customers



\$5.6 billion
Capex Plan⁽⁵⁾

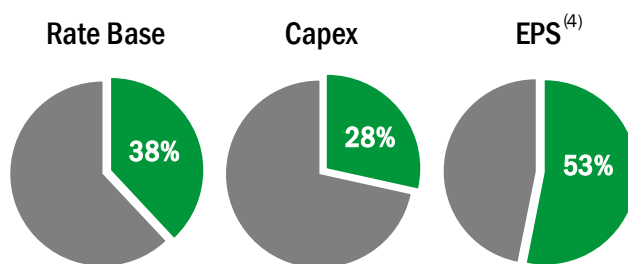
(\$ in billions)



U.K. Segment Highlights⁽¹⁾

- Services provided:
 - Electric Distribution
- Service area: 21,600 square miles
- Electricity delivered: 74,181 GWh
- Operating revenues: \$2.3 billion
- Net income: \$1,114 million
- U.K.'s largest distribution network operator

U.K. Segment Proportion of PPL⁽³⁾



Regulatory Attributes

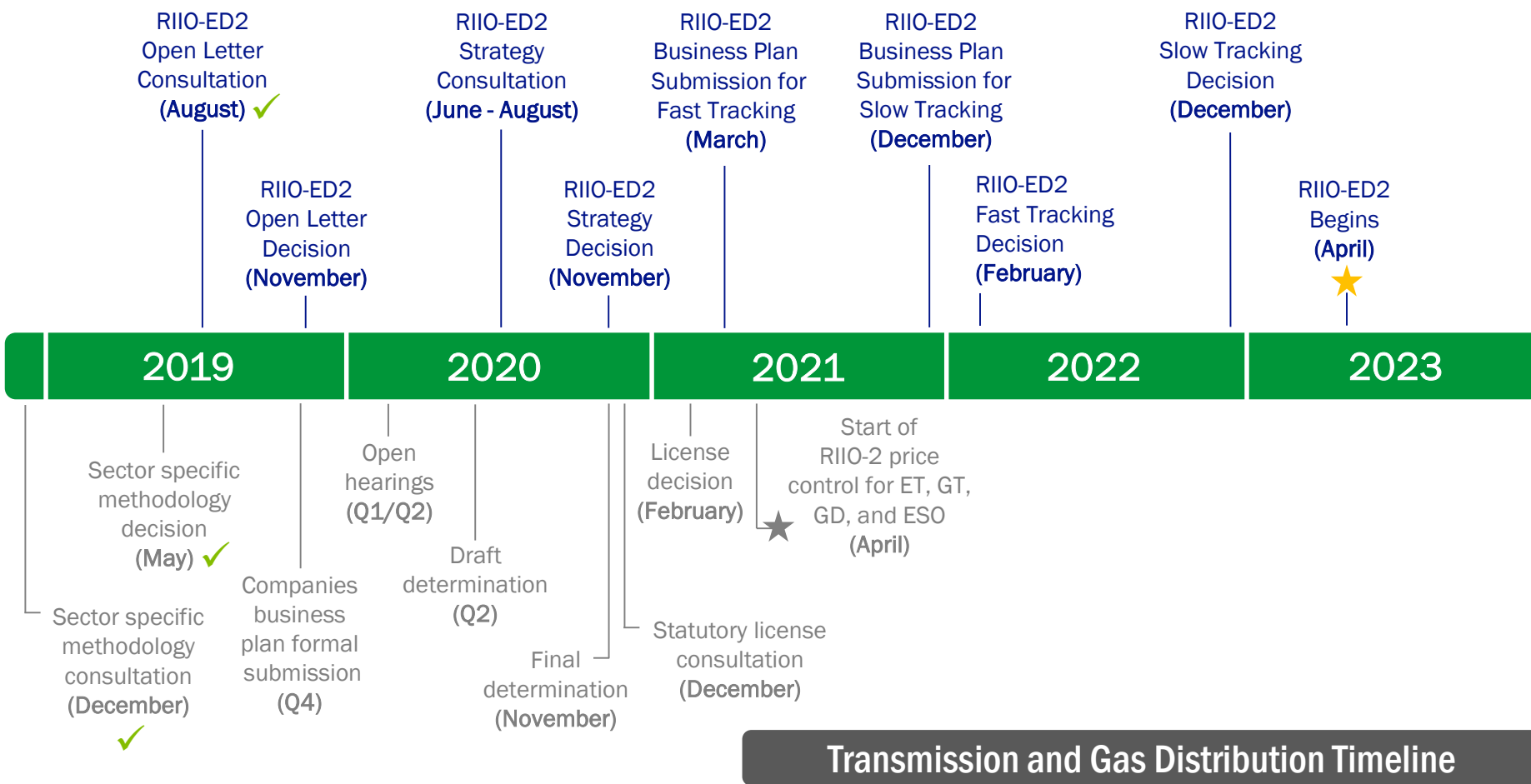
- Pre-approved plan with base revenues set for 8 years; through March 2023
- Accelerated recovery of RAV
- Inflation indexed revenue model
- Real-time recovery of capex
- Performance incentives drive improvement
- 70% of cost efficiencies retained by company
- Strong regulatory track record with Ofgem

(1) Actual as of December 31, 2018.
 (2) Represents Regulatory Asset Value (RAV) for the U.K. For comparability reflects exchange rate of \$1.35/£ for all years.
 (3) Proportions based on 2018 year end actuals.
 (4) Represents Earnings from Ongoing Operations, includes allocation from Corporate and Other for comparative purposes.
 (5) Capital plan is based on assumed exchange rate of \$1.35/£ for 2019 and \$1.40/£ for 2020-2023.

U.K. Regulated: RIIO-2 Projected Timelines



Electricity Distribution Timeline⁽¹⁾



Transmission and Gas Distribution Timeline

(1) Ofgem will consult on the need for Fast Tracking in RIIO-ED2 as part of the strategy consultation in June 2020. The electricity distribution timeline shown here represents the events following an Ofgem decision that allows Fast Tracking.

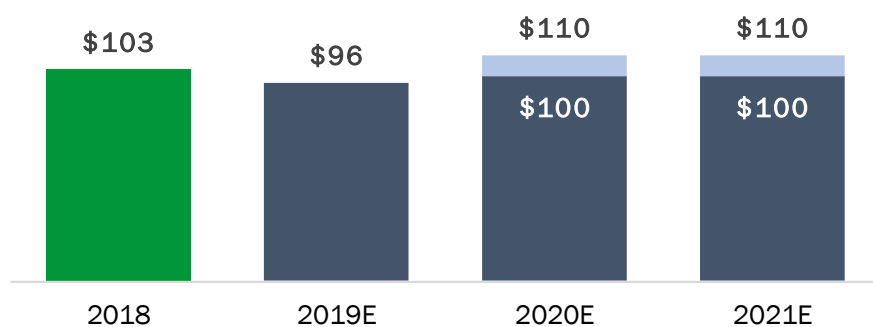




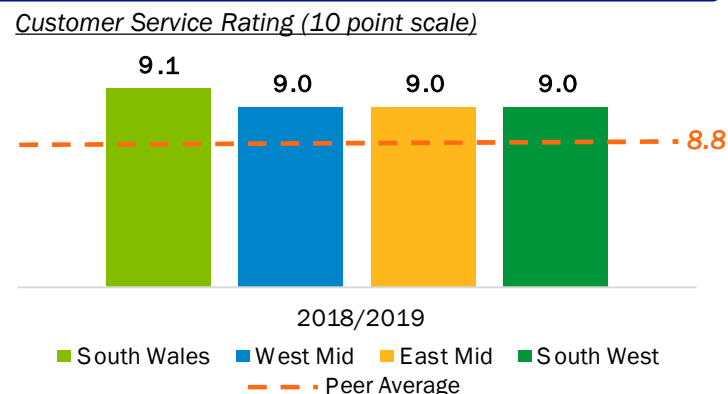
U.K. Regulated Incentive Revenues

WPD continues to demonstrate how premier network operators deliver value for customers and shareowners

Incentive Revenues ⁽¹⁾



Excellent Customer Satisfaction Ratings



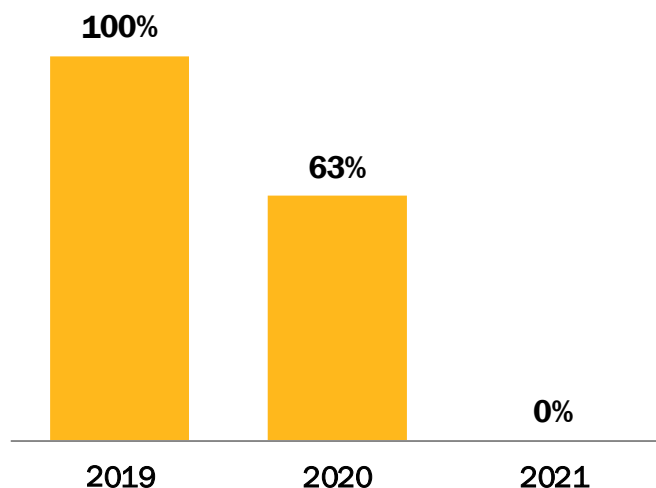
➤ **WPD has the ability to earn annual incentive revenues for strong operational performance:**

- Customer Interruptions/Minutes Lost – rewards or penalizes DNOs for managing and reducing power outage frequency and duration.
- The Broad Measure of Customer Service – rewards or penalizes DNOs based on supply interruptions, connections and general inquiries, complaints, stakeholder engagement, and delivery of social obligations.
- Time to Connect – incentive rewards DNOs for reducing connection times against Ofgem targets.

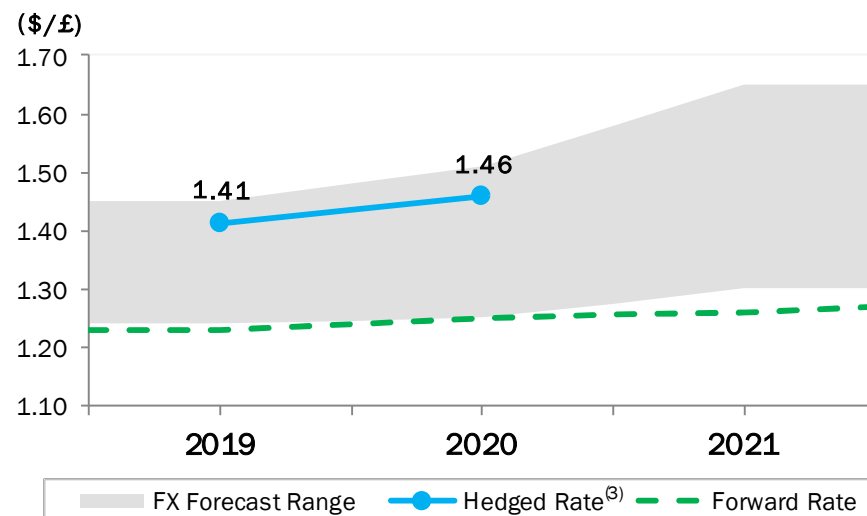
(1) Based on calendar year revenues on an exchange rate of \$1.35/£ in all years for comparability purposes. Annual incentives are reflected in customer rates on a two-year lag from the time they are earned.

Foreign Currency Update

Foreign Currency Hedge Status ⁽¹⁾



Forward Foreign Currency Rates ⁽²⁾



- Increased 2020 hedge position to 63% from 55% during Q2
- Continue to utilize options for incremental hedges; options represent about one-third of the hedge portfolio for 2020

(1) PPL's foreign currency hedge status as of July 31, 2019.

(2) Forward foreign currency rates sourced from Bloomberg as of July 31, 2019. Forecast range reflects views from up to 14 financial institutions and does not represent PPL's internal forecast. Not all institutions provide forecasts for all periods.

(3) Hedge rates reflect a combination of average-rate forwards and options. Average hedge rates based on the average forward rate and the average floor in the options.



Debt Maturities

(\$ in Millions)	2019	2020	2021	2022	2023	2024 and Beyond	Total
PPL Capital Funding	\$0	\$0	\$0	\$800	\$600	\$3,130	\$4,530
PPL Electric Utilities ⁽¹⁾	0	100	400	474	90	2,675	3,739
LG&E and KU Energy	0	475	250	0	0	0	725
Louisville Gas & Electric ⁽¹⁾	40	0	292	0	0	1,692	2,024
Kentucky Utilities ⁽¹⁾	96	500	0	0	13	2,033	2,642
WPD plc	0	0	500	0	632	707	1,839
WPD Operating Companies ⁽²⁾	0	189	0	0	884	4,624	5,697
Total	\$136	\$1,264	\$1,442	\$1,274	\$2,219	\$14,861	\$21,196

Note: As of June 30, 2019.

(1) Amounts reflect the timing of any put option on municipal bonds that may be put by the holders before the bonds' final maturities.

(2) Includes WPD (East Midlands) plc, WPD (West Midlands) plc, WPD (South Wales) plc and WPD (South West) plc.



Liquidity Profile

Entity	Facility	Expiration Date	Capacity (Millions)	Borrowed (Millions)	Letters of Credit & Commercial Paper Issued (Millions)	Unused Capacity (Millions)
PPL Capital Funding	Syndicated Credit Facility	Jan-2024	\$1,450	\$0	\$1,014	\$436
	Bilateral Credit Facility	Mar-2020	100	0	15	85
			\$1,550	\$0	\$1,029	\$521
PPL Electric Utilities	Syndicated Credit Facility	Jan-2024	\$650	\$0	\$186	\$464
Louisville Gas & Electric	Syndicated Credit Facility	Jan-2024	\$500	\$0	\$96	\$404
Kentucky Utilities	Syndicated Credit Facility	Jan-2024	\$400	\$0	\$0	\$400
	Letter of Credit Facility	Oct-2020	198	0	198	0
			\$598	\$0	\$198	\$400
WPD	WPD plc Syndicated Credit Facility	Jan-2023	£210	£158	£0	£52
	WPD (South West) Syndicated Credit Facility	Jul-2021	245	0	0	245
	WPD (East Midlands) Syndicated Credit Facility	Jul-2021	300	81	0	219
	WPD (West Midlands) Syndicated Credit Facility	Jul-2021	300	33	0	267
	Uncommitted Credit Facilities		100	0	4	96
			£1,155	£272	£4	£879

Note: As of June 30, 2019.



PPL Investment Summary

- Pure-play regulated business operating in premium jurisdictions
- Exceptional operational performance and history of prudent investments support constructive regulatory relationships
- Significant, low-risk investment opportunities that advance a cleaner energy future
- Solid, secure dividend with commitment to future growth and an attractive 5.6% dividend yield⁽¹⁾
- Proven track record of delivering commitments to shareowners and customers

(1) Dividend yield as of August 16, 2019.



Sustainability Highlights



PPL's Sustainability Commitments

Energy and Environment



Advance a cleaner energy future

Encourage responsible stewardship in partnership with our customers and stakeholders to have a sustainable environmental impact

Build tomorrow's energy infrastructure



Invest in tomorrow's energy infrastructure by developing a more reliable, resilient and efficient grid that enables continued progress and a cleaner energy future

Social Responsibility



Exceed customer expectations

Provide energy safely, reliably and in an environmentally responsible manner at the lowest reasonable cost

Foster an exceptional workplace



Cultivate success by energizing an inclusive, respectful and diverse workplace that rewards performance, fosters professional development, encourages employee engagement and enables employees to achieve their full potential



Strengthen communities

Empower the success of future generations by helping to build strong communities today

Governance and Management



Create extraordinary shareowner value

Create long-term value for shareowners through fiscal discipline, continuous improvement, environmental stewardship and enduring strategic investments

Drive best-in-sector operational performance



Excel in safety, reliability, customer responsiveness and energy efficiency while maintaining a culture that fosters innovation

70%

Goal to cut the company's carbon dioxide emissions from 2010 levels by 2050

900 MW

Approximate megawatts of coal capacity retired in Kentucky 2010 - 2018

547M kWh

Amount of electricity saved from energy efficiency programs across PPL's utilities

700

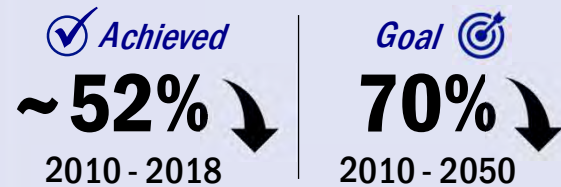
Number of electric vehicle users who participated in Electric Nation, a two-year trial of home charging in the U.K.

Delivering on our Sustainability Commitments

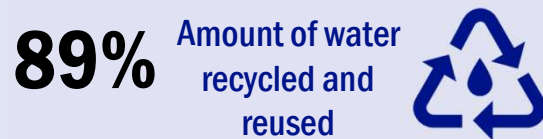


Energy and Environment

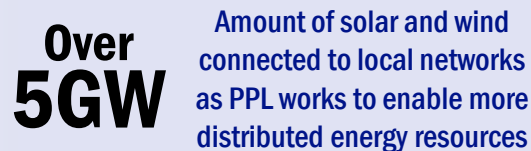
Carbon Reduction Commitment



Water Conservation



Sustainable Investments



Continuous Performance Review

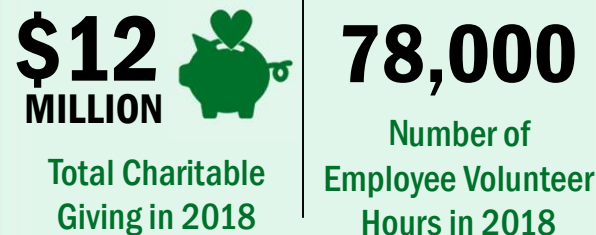
- Dedicated Board Committee
- Sustainability Report
- Climate Assessment Report
- EEI ESG Report
- CDP Survey

Social Responsibility

Workplace Equality



Giving Back to our Communities



Supplier Diversity

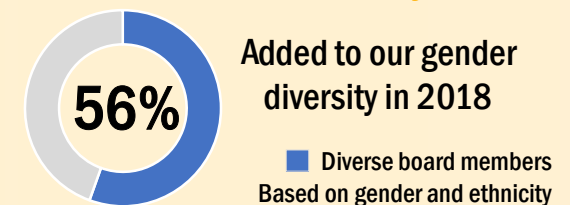


Governance and Management

2018 Awards for Excellence

- **Best Places to Work by Forbes Magazine**
- **Safety** - PPL Electric recognized for exceptionally low injury rates
- **Reliability** - PPL Electric ranked top 10 nationally by IEEE; WPD attained Customer Service Excellence Award for 26th consecutive year
- **Customer Service** - Ranked highest for residential customer satisfaction in both PA and KY in respective regions; WPD ranked highest in in Ofgem's BMCS for 7th year in a row

Board Diversity



Ensuring Cyber and Physical Security

PPL continues to make significant investments to strengthen defensive capabilities and enhance grid reliability and resiliency



PA Sustainability Highlights

Policies Driving Sustainable Investments

Alternative Ratemaking

- Recently approved legislation supported by PPL Electric grants PA utilities the option to propose different ratemaking structures, such as decoupling and performance-based rates, as we adapt our grid to new technologies and new customer expectations

Integration of Distribution Energy Resources

- PPL continues to advocate for funding levels that allow federal agencies to fund additional research and development grants and effectively administer current projects like PPL Electric's Keystone Solar Future Project

PPL Electric's ESG Commitments in Action



A support engineer dons virtual reality headgear as part of a pilot program simulating substation construction and troubleshooting

PPL Electric has converted 30% of its bucket trucks to electric lift bucket trucks, which reduces idling and diesel fuel usage

The company's goal is to equip all 277 bucket trucks with the technology by the end of 2025



Notable Achievements

**5.5
MILLION
MINUTES**

Customer minutes saved by installing ~114 motor-operated switches on higher-voltage transmission grid, which prevent sustained interruptions



98%

Percentage of transformer oil recycled by PPL Electric



**Avian
Protection
Plan**

Adopted a comprehensive plan to protect birds from coming in contact with electrical equipment & power lines



Investing in a Smarter, More Resilient Grid

Advancing Meter Technology

- PPL Electric reached a major milestone by installing more than 1.3 million new meters that enable better management of power usage, more accurate outage reporting, and new functionality that improves customer service

Ensuring Safety For All

- Deployed a system called ArcSense, which accurately detects the fault from a downed power line. ArcSense automatically trips protective relays, cutting power to the downed line. PPL expects about 1,500 locations across the service territory will have ArcSense by end of 2019

KY Sustainability Highlights

PPL Generation in Kentucky

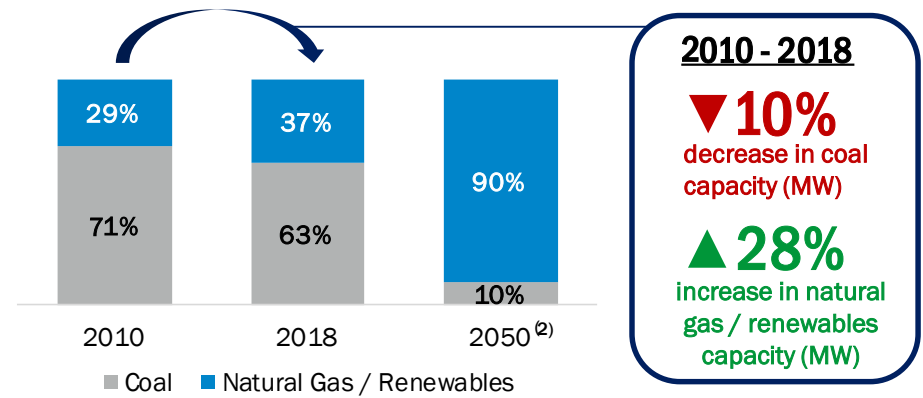
State Regulatory Environment

- Affordable, reliable coal generation remains a significant contributor to state's economy; leads to supportive state policies
- Gradual, economic retirement of coal generation planned in line with "least cost" standard
- No statewide renewable portfolio standard; customer demand and demonstration projects driving renewable development

Adapting Our Fleet

- KY retired 900MW of coal between 2010-2018 and ~300MW in Q1 2019
- Expect CO₂ emissions will meet objectives of 2°C scenario as outlined in PPL's 2017 Climate Assessment Report⁽¹⁾

Our Changing Generation Composition



Notable Achievements

**29%
DECREASE**

Reduction in interruptions of electric service for LG&E and KU customers since 2011



49%

Percentage of gypsum byproduct that is beneficially reused by LG&E and KU



**since
1995**

LG&E and KU have been a corporate sponsor of the Ohio River Sweep, where employee volunteers remove litter and debris from the banks of the Ohio River



Advancing a Cleaner Energy Future

Advancing Solar in Kentucky

- The first 500kW section of LG&E and KU's new Solar Share facility is expected to become operational this summer

Green Energy Tariff

- Promotes renewable energy growth and economic development in Kentucky by providing customers with more options to support development of renewable energy resources

Technology and Innovation – Energy Storage

- Collaboration with the Electric Power Research Institute (EPRI), allows LG&E and KU to develop, test and evaluate the potential benefits of energy storage and battery technologies resources

(1) Scenario focused on limiting global warming to below 2° Celsius.

(2) Represents potential generation mix based on a 55-year operating life under all 3 scenarios analyzed in PPL's 2017 Climate Assessment Report.

U.K. Sustainability Highlights

U.K. Initiatives Driving Sustainable Investments

U.K. Climate Change Targets

- To “reduce emissions by at least 80% of 1990 levels by 2050” ⁽¹⁾

Decarbonizing Heat

- The U.K. plans to “introduce a Future Homes standard, mandating the end of fossil fuel heating systems in all new homes from 2025” ⁽²⁾

Move Away from Combustion Engine Vehicles

- Includes ending the sale of new conventional gasoline and diesel automobiles in the U.K. by 2040 ⁽³⁾

WPD’s ESG Commitments in Action



As part of a community energy project that could be the shape of things to come, WPD has carried out a new connection to Europe’s largest community battery



A WPD lineworker completes a demonstration during a public safety event

Notable Achievements

88%

Percent of WPD customers who have their power restored within one hour of a high-voltage fault



68%

Percentage of total waste that is recycled by WPD



13%

Reduction in WPD’s business carbon footprint compared to 2012/13



Advancing a Cleaner Energy Future

Distribution System Operator - Flexibility

- Enhanced focus on building a smarter, more secure grid that has the flexibility to accommodate distributed energy resources and support new capacity via non-network solutions, such as energy storage and microgrids
- WPD has connected 186,000 sites providing over 9.3GW of distributed generation

Expanding Electric Vehicle Infrastructure

- WPD estimates it will have 1.3 million EVs on its network by 2028 requiring more than £0.5 billion of additional reinforcement

Heat Pump Forecasts

- WPD estimates 210,000 HPs to be installed on WPD’s network by 2028, adding 320MW of peak demand. This would drive more than £100 million of additional network reinforcement by 2028

(1) U.K. Climate Change Act 2008.

(2) From the Chancellor of the Exchequers Spring Statement in the House of Commons on March 13, 2019.

(3) From the Chancellor of the Exchequers Spring Statement in the House of Commons on March 13, 2019, influenced by the Committee on Climate Change 2018 Progress Report to Parliament.



Financial Metrics



Financial Metrics

	2019	2020	2021
PPL Corporation (PPL)			
PPL Electric Utilities Corporation (EU)			
LG&E and KU Energy LLC (LKE)			
FFO / Total Debt	14.5%	15.4%	15.9%
Total Debt / EBITDA	5.1x	4.7x	4.6x
EBITDA / Interest	4.9x	5.1x	4.9x
Kentucky Utilities Company (KU)			
FFO / Total Debt	20.8%	22.5%	21.9%
Total Debt / EBITDA	3.7x	3.4x	3.3x
EBITDA / Interest	6.4x	6.5x	6.6x
Louisville Gas and Electric Company (LG&E)			
FFO / Total Debt	20.3%	21.5%	20.3%
Total Debt / EBITDA	3.9x	3.6x	3.6x
EBITDA / Interest	6.5x	6.8x	6.9x

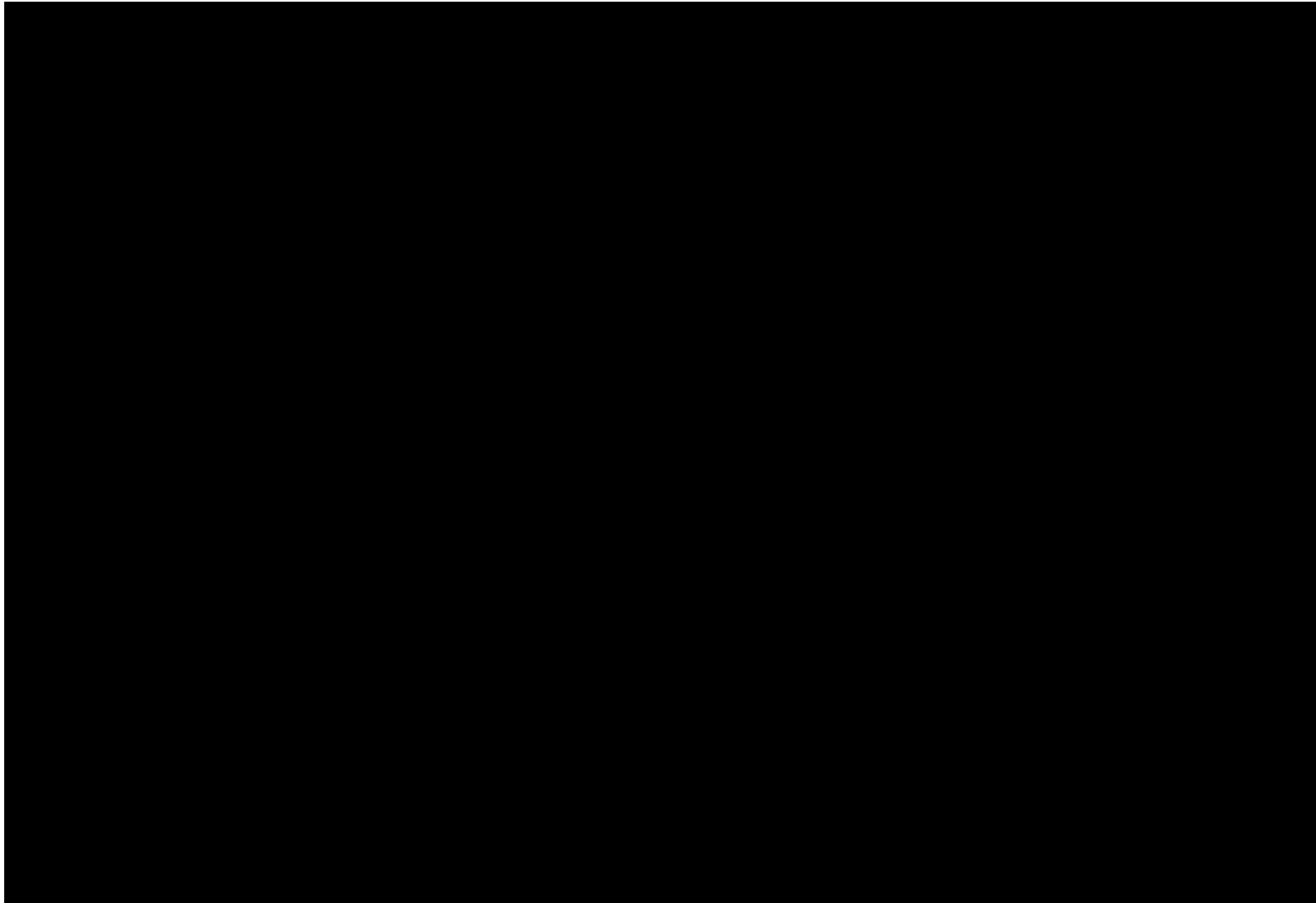
Financial Metrics Details

PPL Corporation



Financial Metrics Details

PPL Electric Utilities Corporation



Financial Metrics Details

LG&E and KU Energy LLC



<i>(Thousands of Dollars)</i>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<u>Funds from Operations (FFO) / Total Debt</u>			
EBITDA - Unadjusted	\$ 1,379,545	\$ 1,488,116	\$ 1,548,964
Current Income Taxes	3,232	(28,287)	(46,922)
Net Interest Expense	(265,975)	(284,680)	(306,164)
Adjustments	(93,680)	(88,797)	(62,729)
<i>FFO - Adjusted</i>	<u>\$ 1,023,121</u>	<u>\$ 1,086,352</u>	<u>\$ 1,133,149</u>
Long-term Debt	\$ 5,351,143	\$ 4,829,124	\$ 4,584,341
Short-term Debt	274,651	446,908	612,293
Intercompany Debt	805,341	1,225,205	1,418,649
Adjustments	643,833	566,758	501,695
<i>Total Debt - Adjusted</i>	<u>\$ 7,074,967</u>	<u>\$ 7,067,994</u>	<u>\$ 7,116,978</u>
FFO / Total Debt	14.5%	15.4%	15.9%
<u>Total Debt / EBITDA</u>			
<i>Total Debt - Adjusted</i>	\$ 7,074,967	\$ 7,067,994	\$ 7,116,978
EBITDA - Unadjusted	\$ 1,379,545	\$ 1,488,116	\$ 1,548,964
Adjustments	18,581	11,003	7,127
<i>EBITDA - Adjusted</i>	<u>\$ 1,398,125</u>	<u>\$ 1,499,119</u>	<u>\$ 1,556,091</u>
Total Debt / EBITDA	5.1x	4.7x	4.6x
<u>EBITDA / Interest</u>			
<i>EBITDA - Adjusted</i>	\$ 1,398,125	\$ 1,499,119	\$ 1,556,091
Interest	\$ 282,573	\$ 296,782	\$ 316,052
EBITDA / Interest	4.9x	5.1x	4.9x

Financial Metrics Details

Kentucky Utilities Company



<i>(Thousands of Dollars)</i>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<u>Funds from Operations (FFO) / Total Debt</u>			
EBITDA - Unadjusted	\$ 771,486	\$ 822,870	\$ 867,391
Current Income Taxes	(1,553)	(10,511)	(77,981)
Net Interest Expense	(111,339)	(118,776)	(126,218)
Adjustments	(62,254)	(54,611)	(31,935)
<i>FFO - Adjusted</i>	<u>\$ 596,340</u>	<u>\$ 638,971</u>	<u>\$ 631,258</u>
Long-term Debt	\$ 2,620,596	\$ 2,570,038	\$ 2,572,863
Short-term Debt	35,002	101,759	171,534
Adjustments	207,064	166,971	134,893
<i>Total Debt - Adjusted</i>	<u>\$ 2,862,662</u>	<u>\$ 2,838,768</u>	<u>\$ 2,879,291</u>
FFO / Total Debt	20.8%	22.5%	21.9%
<u>Total Debt / EBITDA</u>			
<i>Total Debt - Adjusted</i>	\$ 2,862,662	\$ 2,838,768	\$ 2,879,291
EBITDA - Unadjusted	\$ 771,486	\$ 822,870	\$ 867,391
Adjustments	7,884	3,965	1,943
<i>EBITDA - Adjusted</i>	<u>\$ 779,370</u>	<u>\$ 826,835</u>	<u>\$ 869,334</u>
Total Debt / EBITDA	3.7x	3.4x	3.3x
<u>EBITDA / Interest</u>			
<i>EBITDA - Adjusted</i>	\$ 779,370	\$ 826,835	\$ 869,334
Interest	\$ 122,215	\$ 126,669	\$ 132,562
EBITDA / Interest	6.4x	6.5x	6.6x

Financial Metrics Details

Louisville Gas and Electric Company



<i>(Thousands of Dollars)</i>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<u>Funds from Operations (FFO) / Total Debt</u>			
EBITDA - Unadjusted	\$ 607,522	\$ 662,208	\$ 688,312
Current Income Taxes	(1,396)	(18,220)	(60,386)
Net Interest Expense	(90,186)	(94,562)	(97,094)
Adjustments	(20,326)	(22,663)	(19,162)
<i>FFO - Adjusted</i>	<u>\$ 495,614</u>	<u>\$ 526,763</u>	<u>\$ 511,671</u>
Long-term Debt	\$ 2,006,694	\$ 2,009,326	\$ 2,011,478
Short-term Debt	201,639	233,174	323,541
Adjustments	231,377	205,243	183,744
<i>Total Debt - Adjusted</i>	<u>\$ 2,439,710</u>	<u>\$ 2,447,744</u>	<u>\$ 2,518,763</u>
FFO / Total Debt	20.3%	21.5%	20.3%
<u>Total Debt / EBITDA</u>			
<i>Total Debt - Adjusted</i>	\$ 2,439,710	\$ 2,447,744	\$ 2,518,763
EBITDA - Unadjusted	\$ 607,522	\$ 662,208	\$ 688,312
Adjustments	11,447	8,612	7,325
<i>EBITDA - Adjusted</i>	<u>\$ 618,969</u>	<u>\$ 670,820</u>	<u>\$ 695,637</u>
Total Debt / EBITDA	3.9x	3.6x	3.6x
<u>EBITDA / Interest</u>			
<i>EBITDA - Adjusted</i>	\$ 618,969	\$ 670,820	\$ 695,637
Interest	\$ 95,907	\$ 98,771	\$ 100,638
EBITDA / Interest	6.5x	6.8x	6.9x

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 37

Responding Witness: Daniel K. Arbough / Robert M. Conroy

Q-1-37. Please identify the common equity ratio and return on equity approved in KU's last fully litigated rate case for its Kentucky retail operations.

A-1-37. See the Commission's Order issued April 30, 2019 in Case No. 2018-00294.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 38

Responding Witness: Daniel K. Arbough

- Q-1-38. Please provide copies of all credit reports published by Standard & Poor's ("S&P"), Moody's and Fitch Ratings for KU and their parent company issued over the last two years.
- A-1-38. The KU rating agency reports have been provided in the response to AG/KIUC 1-104. The reports for LG&E and KU Energy LLC are attached. Fitch no longer rates these entities per the Companies' request.



CREDIT OPINION

25 October 2019

Update

✓ Rate this Research

RATINGS

LG&E and KU Energy LLC

Domicile	Louisville, Kentucky, United States
Long Term Rating	Baa1
Type	LT Issuer Rating
Outlook	Stable

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

LG&E and KU Energy LLC

Update to credit analysis

Summary

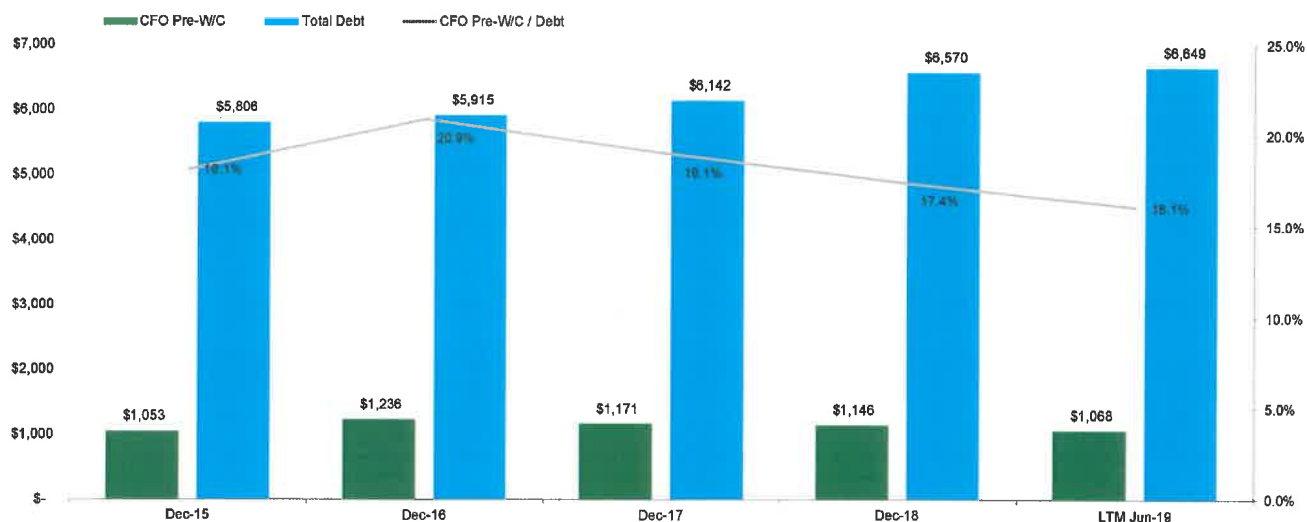
LG&E and KU Energy LLC's (LKE) is an intermediate holding company of two vertically-integrated utilities: Louisville Gas & Electric Company (LG&E) and Kentucky Utilities Company (KU). LKE is owned by PPL Corporation (PPL). LKE's credit reflects the supportive regulatory relationships in the states of Kentucky and Virginia, where its utility subsidiaries operate. Both subsidiaries have stable utility operations that have produced relatively consistent credit metrics historically. LG&E and KU contribute approximately 17% and 23%, respectively, of the cash flow to its diversified and low business risk ultimate parent company, PPL. LG&E and KU's large capital investment plans may pressure certain credit metrics, which will impact LKE's ratio of cash flow from operations before changes in working capital (CFO pre-WC) to debt to be in a 16% to 18% range, which is slightly weaker than its historical level. To a lesser extent, LG&E and KU's positive factors are also somewhat offset by a lack of fuel and geographic diversity. We also consider the degree of structural subordination that exists at LKE relative to substantial amounts of debt at its operating utility subsidiaries.

We view the Kentucky regulatory environment, where both KU and LG&E operate, to be supportive due to its transparent and credit supportive framework. A minor portion of KU's utility operations is in Virginia and is regulated by the Virginia State Corporation Commission (SCC). We also view the regulatory environment in Virginia to be supportive. LKE's subsidiaries have various tracker mechanisms allowed by the commissions and they provide a relatively timely recovery of the company's investment costs.

Both utilities have been active with general rate cases recently. In April 2019, KU and LG&E reached a settlement for an electric rate case and approved by the Kentucky Public Service Commission (KPSC). In July 2019, KU filed for an electric rate case in Virginia, requesting a \$13 million rate increase. Its last rate case in Virginia concluded in May 2018. The final decision from the Virginia State Corporation Commission (SCC) is expected by April 2020.

Exhibit 1

Historical CFO Pre-WC, Total Debt and CFO Pre-WC to Debt (\$MM)



Source: Moody's Financial Metrics

Credit strengths

- » Supportive regulatory environments in Kentucky and Virginia
- » Adequate financial profile with transparent and predictable cash flows

Credit challenges

- » Slightly pressured credit metrics due to large capital investment program
- » High coal concentration for its power generation fuel
- » Moderate carbon transition risk

Rating outlook

The stable outlook reflects our expectation that the regulatory environment in Kentucky and Virginia will remain supportive and consistent. The stable outlook also incorporates our view that LKE will continue to generate stable cash flow and adequate financial metrics, including a ratio of CFO pre-WC to debt in the 16%-18% range while its utilities execute a large capital investment program. It also considers the stable outlook of PPL.

Factors that could lead to an upgrade

LKE's rating could be upgraded if its financial metrics increase, including CFO pre-WC to debt is higher than 20% on a sustained basis. A rating upgrade would likely require an upgrade at the utility operating subsidiaries or a material reduction of debt at LKE. However, it is unlikely that LKE's rating will be upgraded while the subsidiaries are in the midst of executing on large capital investment programs.

Factors that could lead to a downgrade

LKE's ratings could be downgraded if one or both of the subsidiaries experience negative rating actions or a significant deterioration in the credit supportiveness of the regulatory environments. Additionally, LKE's rating could be downgraded if its financial metrics deteriorate, such that CFO pre-WC to debt declines below 16% for an extended period of time. LKE's rating could also be downgraded if there is a material increase in LKE debt levels.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

Key indicators

Exhibit 2

LG&E and KU Energy LLC [1]

	Dec-15	Dec-16	Dec-17	Dec-18	LTM Jun-19
CFO Pre-W/C + Interest / Interest	6.4x	6.4x	6.1x	5.6x	5.1x
CFO Pre-W/C / Debt	18.1%	20.9%	19.1%	17.4%	16.1%
CFO Pre-W/C – Dividends / Debt	14.4%	15.6%	12.5%	12.8%	11.9%
Debt / Capitalization	49.3%	48.2%	53.3%	53.8%	53.2%

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Financial Metrics™

Source: Moody's Financial Metrics

Profile

LG&E and KU Energy LLC (LKE) is an intermediate holding company with two fully regulated operating subsidiaries: Louisville Gas and Electric Company (LG&E, A3 stable) and Kentucky Utilities (KU, A3 stable). LG&E and KU are engaged in the generation, transmission and distribution of electricity and the storage, distribution and sale of natural gas in Kentucky. LKE provides transmission and distribution services to approximately 969,000 electricity customers and 328,000 natural gas customers predominantly in Kentucky.

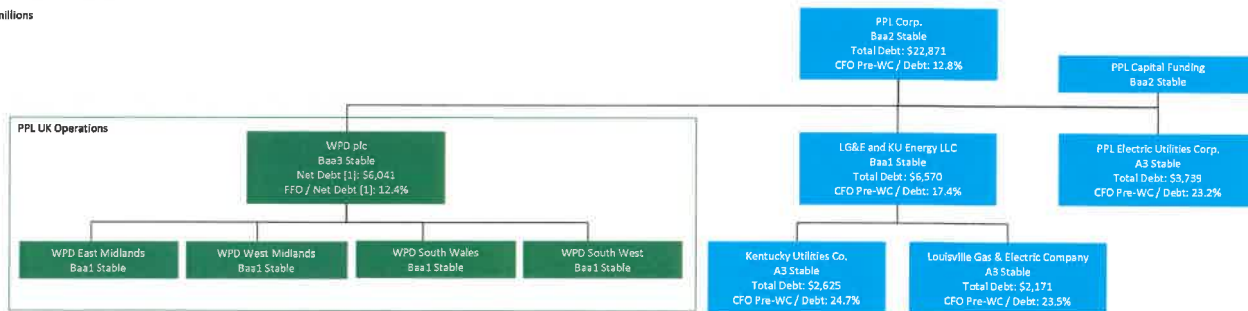
LKE is wholly owned by PPL Corporation (PPL, Baa2 stable), a diversified utility holding company headquartered in Allentown, PA.

Exhibit 3

Organizational Structure

As of 12/31/2018

\$ in millions



[1] As of 3/31/2019; CFO Pre-WC to Debt is not a key metric we use for WPD and subsidiaries. WPD and subsidiaries are assessed under the Regulated Electric and Gas Networks Industry Grid

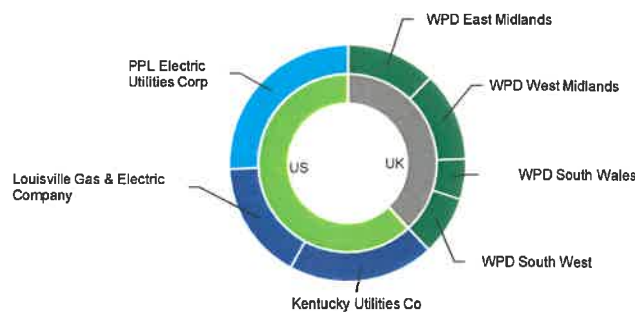
[2] Metrics are based on 'adjusted' financial data and incorporate Moody's Global Standard Adjustments for non-financial corporations.

Source: Moody's Financial Metrics, Company

Exhibit 4

PPL's rate base breakdown between the US and UK jurisdictions

- Regulated network
- Regulated utility without generation
- Regulated utility with generation



Source: Company Reports

Detailed credit considerations

Constructive rate case outcomes in Kentucky and Virginia

The regulatory framework in Kentucky is supportive for long-term credit quality. The KPSC has authorized various tracker mechanisms, allowing timely cost recovery for utility investments outside of a rate case, credit positive since LG&E and KU are going through large capital expenditure plans. The operating utility subsidiaries' tracker mechanisms include a Fuel Adjustment Clause (FAC), an Environmental Cost Recovery Surcharge (ECR) and a Demand-Side Management (DSM) Cost Recovery Mechanism. LKE utilities do not have a decoupling mechanism in place, which subjects their revenue to some volatility. The lack of a decoupling mechanism is less of an issue for non-weather related demand fluctuations because the utilities have the DSM mechanism.

Both KU and LG&E completed their last Kentucky rate case in April 2019. The case was settled and the combined electric and gas rate increase of approximately \$77 million was approved by the KPSC. The increase was based on a 9.73% return on equity but the settlement did not disclose the allowed equity layer incorporated in the increase.

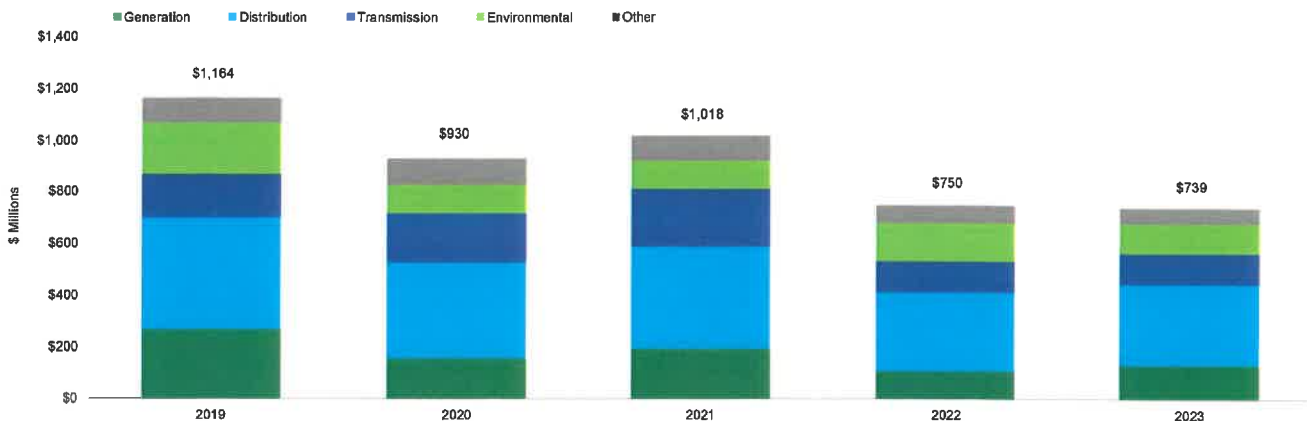
The KPSC also approved to terminate the Tax Cuts and Jobs Act (TCJA) bill credit mechanism which was used to reduce both electric and gas rates to reflect the impact of the tax reform. With the new rates from the latest rate cases were implemented, the termination was approved. This represented a total annual revenue increase of \$114 million for KU and \$73 million for LG&E, effective as of May 2019.

High capital investment plan over the next five years

LG&E and KU are currently in the midst of a large capital investment plan and expect to spend approximately \$4.6 billion including mechanism spending combined over the next five years. Both companies' capitalization for ratemaking purpose value estimated around \$7.4 billion, excluding mechanism capitalization. Approximately \$1.8 billion will be spent on distribution facilities, \$855 million on generating facilities, \$682 million on environmental, \$823 million transmission facilities, and \$425 million on other expenses. The total projected capital investment represents about 37% of LKE's net book value of property, plant and equipment, which was about \$12.6 billion at the end of 2018.

Exhibit 5

Projected Capital Investment Plan



Source: Company Reports

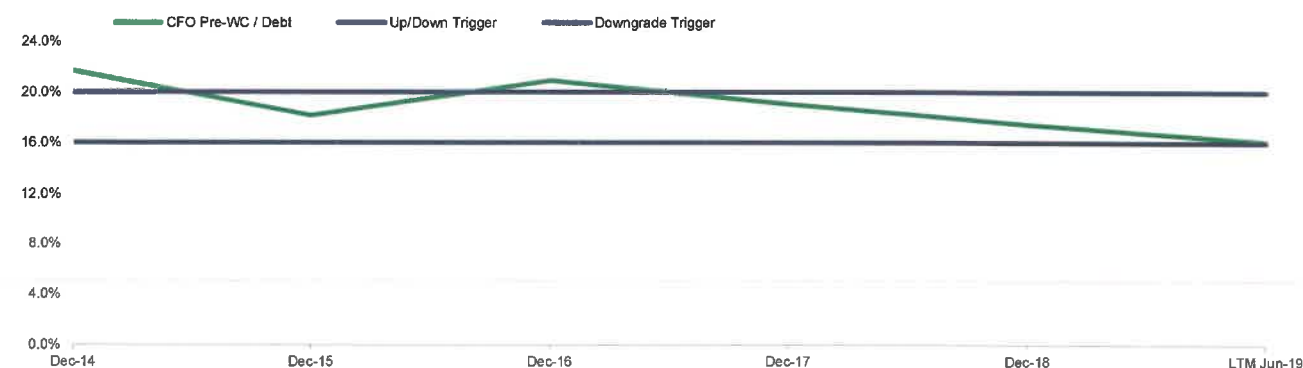
We expect cost recovery risk related to the large capital investment to be meaningfully moderated by Kentucky's supportive regulatory environment, especially regarding the environmental expenditures through the ECR. The KPSC is also authorized to grant return on construction work in progress (CWIP) in rate case proceedings, a credit positive. Moreover, the ECR minimizes regulatory lag for investments associated with coal combustion waste. The terms of the ECR allow the LKE utilities to receive a return on and of investments two months after the capital is deployed. We view this to be credit supportive compared to the traditional rate-making process where there would be longer regulatory lag due to the length of the construction period and subsequent rate case proceedings.

Adequate financial profile, but slightly pressured credit metrics

LKE has historically maintained a consistent financial profile with its ratio of CFO pre-WC to debt. However, we expect metrics to weaken, moving closer to the mid-teens range over the next 12-18 months. As of the last twelve month (LTM) period ending 30 June 2019, CFO pre-WC to debt was 16.1% and 18.6% on average for the past three years. The decline in metrics is caused by elevated capital investments as well as the negative impact of tax reform. However, existing cost recovery mechanisms should result in timely recovery of investments and should help LKE maintain its key credit metrics within the adequate ranges. Also, a capital contribution received from PPL of approximately \$63 million as of LTM 30 June 2019 has slightly helped mitigate the pressure on its cash flow.

Exhibit 6

LKE's Historical CFO pre-WC to Debt vs Financial Metric Upgrade/Downgrade Thresholds



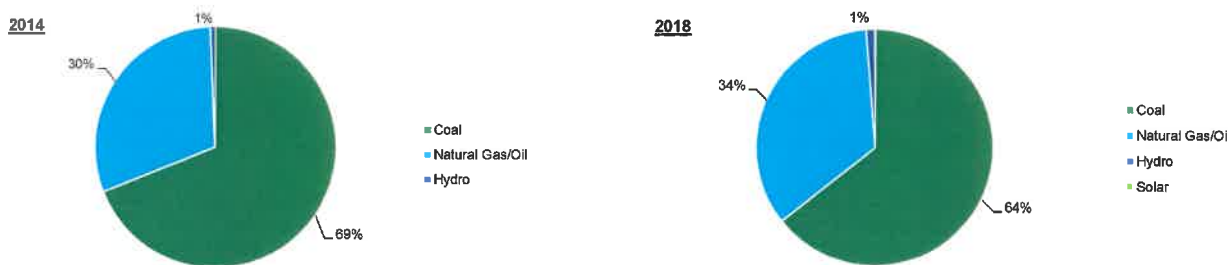
Source: Moody's Financial Metrics

Environmental, social and governance considerations

LKE has moderate carbon transition risk within the US regulated utility sector because it is a vertically integrated intermediate holding company although its regulated utilities have a large, fossil based generation capacity. Kentucky's political and regulatory environment is supportive of coal mining and related industries. LKE has a total generation capacity of 8.0 GW, and 5.2 GW (64%) is coal-fired, which provides the majority (81%) of the electricity generation output. The remaining 19% of the electricity generating output is comprised mainly of gas/oil-fired, hydro, and solar facilities. Over the last two years, LKE's fuel mix improved with the addition of the 660-MW gas-fired combined-cycle power plant at Cane Run, replacing older retired coal-fired power plants Tyrone and Green River as well as the Cane Run coal plant. Due to environmental requirements and energy efficiency measures, KU retired two older coal units at the E.W Brown plant in the first quarter of 2019 with a combined capacity of ~300 MW.

Exhibit 7

LKE Generation Mix (MW)



Source: Company reports

Fuel concentration in coal is typically considered to be a significant credit negative. However, we do not view LKE's high reliance on coal to be as negative as some other companies because the state of Kentucky is very supportive of the coal industry. This support is evidenced by the ECR, which provides the company with credit supportive terms for its investments in coal-related environmental

expenditures. However, LKE is exposed to the risk of potentially needing to make a more rapid transition to clean energy in the future if carbon policies change.

Liquidity analysis

We expect LKE to maintain an adequate liquidity profile over the next 12-18 months. Although the utilities has an elevated capital investment program over the next few years, we anticipate their liquidity will be supported by relatively stable and predictable cash flows and good access to capital markets.

LKE subsidiaries have separate credit facilities. LG&E's liquidity is supported by a \$500 million syndicated credit facility that expires in January 2024. As of 30 June 2019, the credit facility had \$404 million of available capacity. LG&E had a \$200 million term loan facility that was set to expire in October 2019. In April 2019, LG&E issued \$400 million of first mortgage bonds due 2049. The proceeds were used to repay commercial paper and LG&E's term loan. KU's liquidity is supported by a separate \$400 million syndicated credit facility that expires in January 2024 and a \$198 million letter of credit facility expiring in October 2020. As of 30 June 2019, the credit facility had \$400 million of available capacity. Both credit facilities contain one financial covenant, a limitation on the ratio of debt to capitalization of 70%, which they were in compliance with at the end of the second quarter of 2019. The facilities do not contain material adverse change clause.

LKE's \$75 million syndicated credit facility expired on 30 October 2018, further weakening LKE's liquidity position.

Over the LTM period ending 30 June 2019, LKE generated consolidated cash flow from operations of approximately \$920 million, spent about \$1.1 billion in capital investments and paid \$278 million in dividends, resulting in a negative free cash flow of approximately \$441 million. Due to the high level of planned capital investments of the LKE subsidiaries, we expect LKE to remain in a negative free cash flow position over the next 12-18 months.

LKE's next long-term debt maturity is \$475 million senior notes due in November 2020.

Structural considerations

As an intermediate holding company, the current rating at LKE factors in the degree of structural subordination that exists relative to the debt outstanding at the operating utilities, KU and LG&E. Of the approximate \$6.2 billion of consolidated long-term debt, \$1.6 billion, or 26%, is issued at the LKE level. The consolidated credit profile of PPL also influences LKE's rating.

Rating methodology and scorecard factors

Exhibit 8

Rating Factors

LG&E and KU Energy LLC

Regulated Electric and Gas Utilities Industry Scorecard [1][2]	Current LTM 6/30/2019		Moody's 12-18 Month Forward View As of Date Published [3]	
	Measure	Score	Measure	Score
Factor 1 : Regulatory Framework (25%)				
a) Legislative and Judicial Underpinnings of the Regulatory Framework	A	A	A	A
b) Consistency and Predictability of Regulation	A	A	A	A
Factor 2 : Ability to Recover Costs and Earn Returns (25%)				
a) Timeliness of Recovery of Operating and Capital Costs	Baa	Baa	Baa	Baa
b) Sufficiency of Rates and Returns	A	A	A	A
Factor 3 : Diversification (10%)				
a) Market Position	Baa	Baa	Baa	Baa
b) Generation and Fuel Diversity	Baa	Baa	Baa	Baa
Factor 4 : Financial Strength (40%)				
a) CFO pre-WC + Interest / Interest (3 Year Avg)	5.8x	A	4.5x - 5.5x	A
b) CFO pre-WC / Debt (3 Year Avg)	18.6%	Baa	16% - 18%	Baa
c) CFO pre-WC – Dividends / Debt (3 Year Avg)	13.1%	Baa	12% - 14%	Baa
d) Debt / Capitalization (3 Year Avg)	51.7%	Baa	52% - 54%	Baa
Rating:				
Scorecard-Indicated Outcome Before Notching Adjustment		Baa1		Baa1
HoldCo Structural Subordination Notching		-1		-1
a) Scorecard-Indicated Outcome		Baa2		Baa2
b) Actual Rating Assigned		Baa1		Baa1

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.

[2] As of 6/30/2019(L)

[3] This represents Moody's forward view; not the view of the issuer; and unless noted in the text, does not incorporate significant acquisitions and divestitures.

Source: Moody's Financial Metrics

Appendix

Exhibit 9
Cash Flow and Credit Metrics [1]

CF Metrics	Dec-15	Dec-16	Dec-17	Dec-18	LTM Jun-19
As Adjusted					
FFO	1,061	1,177	1,129	1,069	1,108
+/- Other	(8)	59	42	77	(40)
CFO Pre-WC	1,053	1,236	1,171	1,146	1,068
+/- ΔWC	135	(33)	20	80	39
CFO	1,188	1,203	1,191	1,226	1,107
- Div	219	316	402	302	278
- Capex	1,230	813	915	1,141	1,100
FCF	(261)	74	(126)	(217)	(271)
(CFO Pre-W/C) / Debt	18.1%	20.9%	19.1%	17.4%	16.1%
(CFO Pre-W/C - Dividends) / Debt	14.4%	15.6%	12.5%	12.8%	11.9%
FFO / Debt	18.3%	19.9%	18.4%	16.3%	16.7%
RCF / Debt	14.5%	14.6%	11.8%	11.7%	12.5%
Revenue	3,115	3,141	3,156	3,214	3,176
Cost of Good Sold	1,034	948	923	985	941
Interest Expense	195	227	230	251	261
Net Income	333	429	318	318	316
Total Assets	14,190	14,475	14,906	15,528	15,630
Total Liabilities	9,673	9,852	10,384	10,844	10,792
Total Equity	4,517	4,623	4,522	4,684	4,838

[1] All figures and ratios calculated using Moody's estimates & standard adjustments. Periods are Financial Year-End unless indicated otherwise. LTM = Last Twelve Months
Source: Moody's Financial Metrics

Exhibit 10
Peer Comparison Table [1]

	LG&E and KU Energy LLC			Vectren Utility Holdings, Inc.			Alliant Energy Corporation			Kentucky Utilities Co.			Louisville Gas & Electric Company		
	Baa1 Stable			A2 Negative			[P]Baa1 Negative			A3 Stable			A3 Stable		
	FYE	FYE	LTM	FYE	FYE	LTM	FYE	FYE	LTM	FYE	FYE	LTM	FYE	FYE	LTM
(In US millions)	Dec-17	Dec-18	Jun-19	Dec-17	Dec-18	Jun-19	Dec-17	Dec-18	Jun-19	Dec-17	Dec-18	Jun-19	Dec-17	Dec-18	Jun-19
Revenue	3,156	3,214	3,176	1,383	1,441	1,440	3,382	3,535	3,580	1,744	1,760	1,731	1,453	1,496	1,486
CFO Pre-W/C	1,171	1,146	1,068	418	407	318	942	974	1,005	699	648	627	566	510	526
Total Debt	6,142	6,570	6,649	1,815	1,951	2,086	5,906	6,687	7,188	2,440	2,625	2,678	1,984	2,171	2,146
CFO Pre-W/C / Debt	19.1%	17.4%	16.1%	23.0%	20.8%	15.2%	15.9%	14.6%	14.0%	28.6%	24.7%	23.4%	28.5%	23.5%	24.5%
CFO Pre-W/C - Dividends / Debt	22.5%	12.6%	11.9%	16.2%	14.3%	11.6%	11.2%	10.0%	9.6%	19.4%	15.3%	15.9%	18.9%	16.3%	17.7%
Debt / Capitalization	53.3%	53.8%	53.2%	45.4%	45.1%	46.3%	51.3%	52.2%	53.3%	37.7%	38.7%	38.3%	39.1%	39.7%	38.7%

[1] All figures & ratios calculated using Moody's estimates & standard adjustments. FYE = Financial Year-End. LTM = Last Twelve Months. RUR* = Ratings under Review, where UPG = for upgrade and DNG = for downgrade
Source: Moody's Financial Metrics

Ratings

Exhibit 11

Category	Moody's Rating
LG&E AND KU ENERGY LLC	
Outlook	Stable
Issuer Rating	Baa1
Senior Unsecured	Baa1
PARENT: PPL CORPORATION	
Outlook	Stable
Issuer Rating	Baa2
KENTUCKY UTILITIES CO.	
Outlook	Stable
Issuer Rating	A3
First Mortgage Bonds	A1
Senior Secured	A1
Sr Unsec Bank Credit Facility	A3
Bkd LT IRB/PC	A1
Commercial Paper	P-2
Bkd Other Short Term	P-2
LOUISVILLE GAS & ELECTRIC COMPANY	
Outlook	Stable
Issuer Rating	A3
First Mortgage Bonds	A1
Senior Secured	A1
Sr Unsec Bank Credit Facility	A3
Bkd LT IRB/PC	A1
Commercial Paper	P-2
Bkd Other Short Term	P-2

Source: Moody's Investors Service

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CREDIT OPINION

23 October 2020

Update

Rate this Research

RATINGS

LG&E and KU Energy LLC

Domicile	Louisville, Kentucky, United States
Long Term Rating	Baa1
Type	LT Issuer Rating
Outlook	Stable

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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LG&E and KU Energy LLC

Update to credit analysis

Summary

LG&E and KU Energy LLC (LKE) is an intermediate holding company of two vertically integrated utilities: Louisville Gas & Electric Company (LG&E) and Kentucky Utilities Company (KU). LKE is wholly owned by PPL Corporation (PPL). LKE's credit strengths include its supportive regulatory environments in the states of Kentucky and Virginia, where its utility subsidiaries operate. Historically, both subsidiaries have produced relatively consistent credit metrics from stable utility operations. LG&E and KU contribute approximately 19% and 22%, respectively, of the cash flow of its ultimate parent company, PPL. LG&E and KU's large capital investment plans may pressure credit metrics, which will cause LKE's ratio of cash flow from operations before changes in working capital (CFO pre-WC) to debt to be in a 16% to 18% range, which is slightly weaker than historical levels. To a lesser extent, LG&E and KU's positive credit factors are somewhat offset by a lack of fuel and geographic diversity. We also consider the degree of structural subordination that exists at LKE relative to a substantial amount of debt at its operating utility subsidiaries.

The supportive regulatory environment of Kentucky, where both KU and LG&E operate, has a transparent recovery framework under the Kentucky Public Service Commission (KPSC). A minor portion of KU's utility operations is in Virginia and is regulated by the Virginia State Corporation Commission (VSCC). We also view the regulatory environment in Virginia to be supportive. LKE's subsidiaries have various tracker mechanisms allowed by the commissions and they provide relatively timely recovery of the company's investment costs.

Recent developments

In August 2020, PPL announced that it had initiated a process to sell its utility assets in the United Kingdom that have a total estimated rate base of around \$10 billion and approximately \$8 billion of debt. If PPL is successful in divesting its UK assets, we estimate its Kentucky operations will proportionally increase to more than half of rate base from around 37%. Due to their vertically integrated utility business model with coal as the primary fuel source for its generation in Kentucky, we would view PPL's overall business risk to be higher.

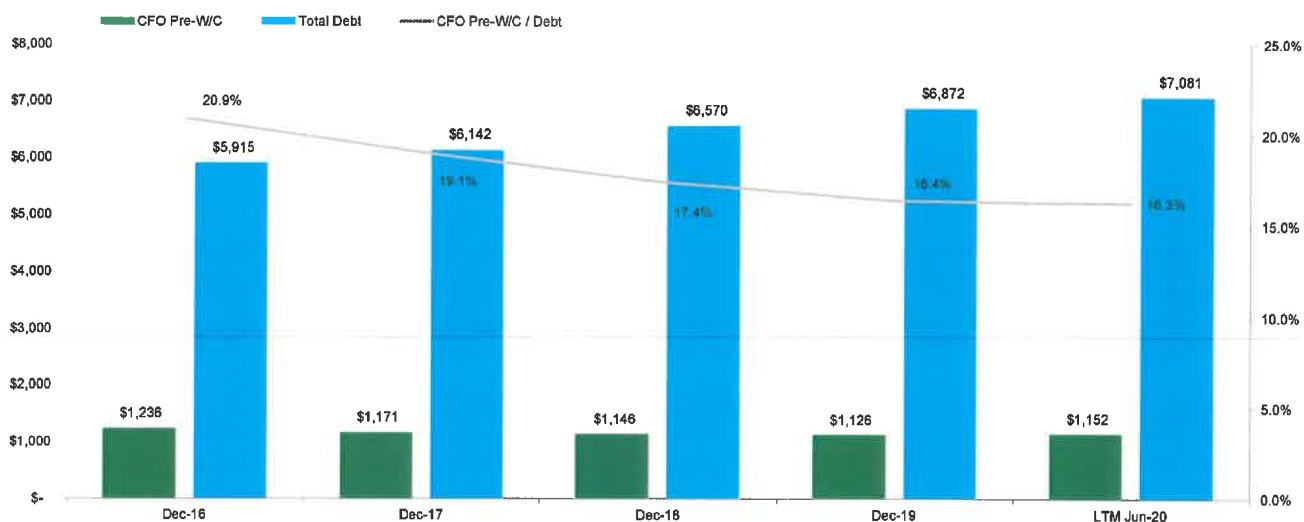
The rapid spread of the coronavirus outbreak, severe global economic shock and asset price volatility are creating a severe and extensive credit shock across many sectors, regions and markets. The combined credit effects of these developments are unprecedented. We regard the coronavirus outbreak as a social risk under our ESG framework, given the substantial implications for public health and safety.

We expect LKE to be relatively resilient to recessionary pressures related to the coronavirus because of its rate regulated business model and timely cost recovery mechanisms.

Nevertheless, we are watching for electricity usage declines, utility bill payment delinquency, and the regulatory response to counter these effects on earnings and cash flow. As events related to the coronavirus continue, we are taking into consideration a wider range of potential outcomes, including more severe downside scenarios. The effects of the pandemic could result in financial metrics that are weaker than expected; however, we see these issues as temporary and not reflective of the long-term financial profile or credit quality of LKE.

Exhibit 1

Historical CFO Pre-WC, Total Debt and CFO Pre-WC to Debt (\$ MM)



Source: Moody's Financial Metrics

Credit strengths

- » Supportive regulatory frameworks in Kentucky and Virginia
- » Adequate financial profile with transparent and predictable cash flows

Credit challenges

- » Slightly pressured credit metrics due to utility subsidiaries' large capital investment program
- » High coal concentration for its power generation fuel
- » Moderate carbon transition risk

Rating outlook

LKE's stable outlook reflects our expectation that the regulatory environments in Kentucky and Virginia will remain supportive and consistent. The stable outlook also incorporates our view that LKE will continue to generate predictable cash flow and adequate financial metrics, including a ratio of CFO pre-WC to debt in the 16%-18% range as its utilities execute a large capital investment program. It also considers the stable outlook of parent company PPL.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

Factors that could lead to an upgrade

LKE's rating could be upgraded if its financial metrics increase, including CFO pre-WC to debt above 20% on a sustained basis. A rating upgrade would likely require an upgrade of its utility operating subsidiaries or a material reduction of debt at LKE. However, it is unlikely that LKE's rating will be upgraded while the subsidiaries are in the midst of large capital investment programs.

Factors that could lead to a downgrade

LKE's ratings could be downgraded if one or both of the subsidiaries experience negative rating actions or a significant deterioration in the credit supportiveness of the regulatory environments. Additionally, LKE's rating could be downgraded if its financial metrics deteriorate, such that CFO pre-WC to debt declines below 16% for an extended period of time. LKE's rating could also be downgraded if there is a material increase in LKE debt levels.

Key indicators

Exhibit 2
LG&E and KU Energy LLC [1]

	Dec-16	Dec-17	Dec-18	Dec-19	LTM Jun-20
CFO Pre-W/C + Interest / Interest	6.4x	6.1x	5.6x	5.2x	5.3x
CFO Pre-W/C / Debt	20.9%	19.1%	17.4%	16.4%	16.3%
CFO Pre-W/C – Dividends / Debt	15.6%	12.5%	12.8%	11.9%	11.9%
Debt / Capitalization	48.2%	53.3%	53.8%	53.5%	53.7%

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Source: Moody's Financial Metrics

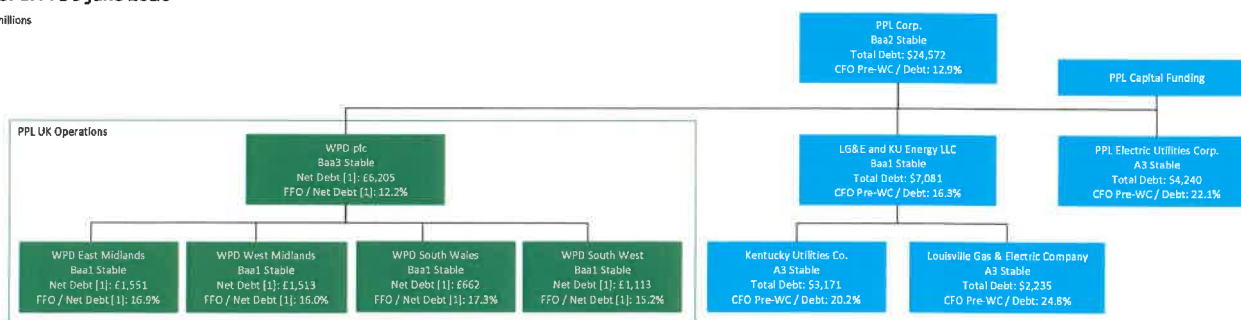
Profile

LG&E and KU Energy LLC (LKE) is an intermediate holding company with two fully regulated operating subsidiaries: Louisville Gas and Electric Company (LG&E, A3 stable) and Kentucky Utilities (KU, A3 stable). LG&E and KU are engaged in the generation, transmission and distribution of electricity and the storage, distribution and sale of natural gas in Kentucky. LKE provides transmission and distribution services to approximately 976,000 electricity customers and 329,000 natural gas customers predominantly in Kentucky.

LKE is wholly owned by PPL Corporation (PPL, Baa2 stable), a diversified utility holding company headquartered in Allentown, PA.

Exhibit 3
Organizational Structure
As of LTM 30 June 2020

\$ in millions



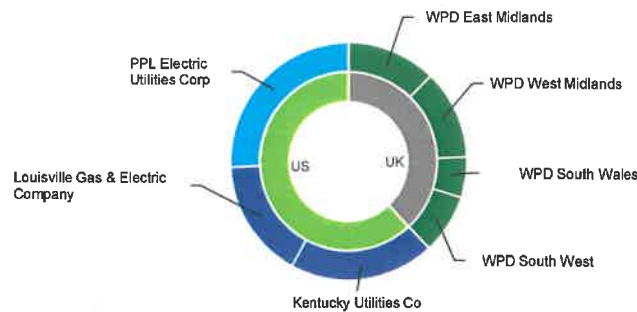
[1] As of 3/31/2020; CFO Pre-WC to Debt is not a key metric we use for WPD and subsidiaries. WPD and subsidiaries are assessed under the Regulated Electric and Gas Networks Industry Grid.

[2] Metrics are based on 'adjusted' financial data and incorporate Moody's Global Standard Adjustments for non-financial corporations.
Source: Moody's Financial Metrics

Exhibit 4

PPL's rate base breakdown between the US and UK jurisdictions

- Regulated network
- Regulated utility without generation
- Regulated utility with generation



Source: Company Reports

Detailed credit considerations

Supportive regulatory environments in Kentucky and Virginia

We view the regulatory frameworks provided by Kentucky and Virginia to be supportive. The KPSC has approved various tracker mechanisms that provide timely recovery of costs outside of a general rate case. Some of the authorized tracker mechanisms include a Fuel Adjustment Clause (FAC), an Environmental Cost Recovery Surcharge (ECR), a Gas Supply Clause (GSC), a Gas Line Tracker (GLT), and a Demand-Side Management (DSM) Cost Recovery Mechanism. The Kentucky operating utilities do not have decoupling mechanisms in place, which subjects LG&E and KU's revenue to some volatility. However, the impact on its revenue due to non-weather related demand fluctuations is minimized because of the DSM mechanism.

Both KU and LG&E completed their last Kentucky rate case in April 2019. The case was settled and the combined electric and gas rate increase of approximately \$77 million was approved by the KPSC. The increase was based on a 9.725% return on equity but the settlement did not disclose the allowed equity layer incorporated in the increase.

The KPSC also approved the termination of the Tax Cuts and Jobs Act (TCJA) bill credit mechanism which was used to reduce both electric and gas rates to reflect the impact of tax reform. When the new rates from the latest rate cases were implemented, the termination became effective. This represented a total annual revenue increase of \$114 million for KU and \$73 million for LG&E, effective as of May 2019.

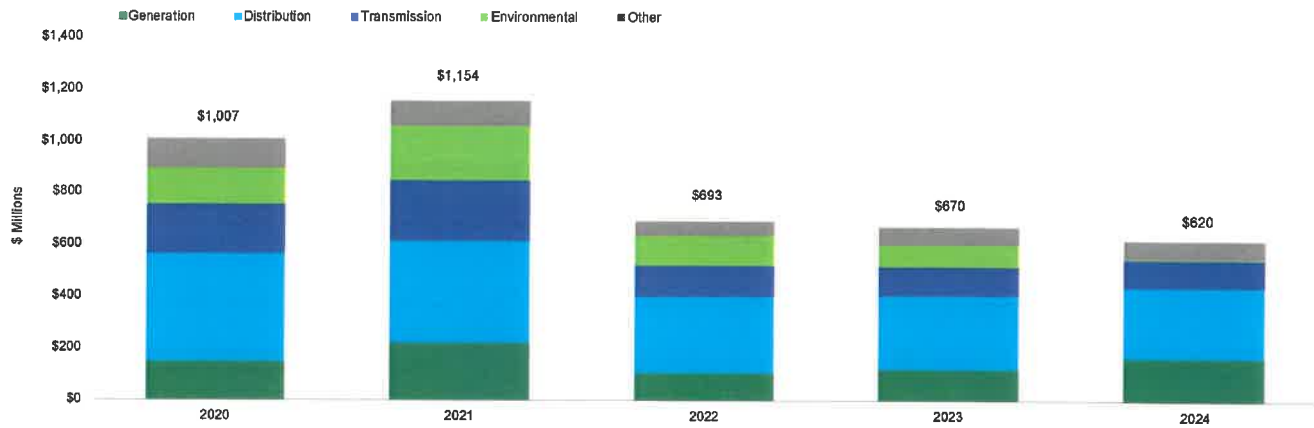
In July 2019, KU filed for an electric rate case in Virginia, requesting a revenue increase of approximately \$13 million. KU also requested an allowed ROE of 10.5% and an equity layer of 54.04%. In April 2020, the VSCC authorized a rate increase of \$9 million under a settlement that did not specify the allowed ROE and equity layer.

Large capital investment plan over the next five years

LG&E and KU are currently in the midst of a large capital investment plan and expect to spend approximately \$4.1 billion including capital investments that are recovered under rate adjustment mechanisms combined over the next five years. Both companies' capitalization for ratemaking purposes is estimated around \$10 billion. Approximately \$1.7 billion will be spent on distribution facilities, \$763 million on generating facilities, \$549 million on environmental, \$764 million transmission facilities, and \$407 million on other expenses. The total projected capital investment represents about 32% of LKE's net book value of property, plant and equipment, which was about \$13 billion at the end of 2019.

Exhibit 5

Projected Capital Investment Plan



Source: Company Reports

We expect cost recovery risk related to this large capital investment to be meaningfully moderated by Kentucky's supportive regulatory environment, especially regarding environmental expenditures through the ECR. The KPSC is also authorized to grant a return on construction work in progress (CWIP) in rate case proceedings, a credit positive. Moreover, the ECR minimizes regulatory lag for investments associated with coal combustion waste. The terms of the ECR allow the LKE utilities to receive a return on and of investments two months after the capital is deployed. We view this to be credit supportive compared to a traditional rate making process where there would be longer regulatory lag due to the length of the construction period and subsequent rate case proceedings.

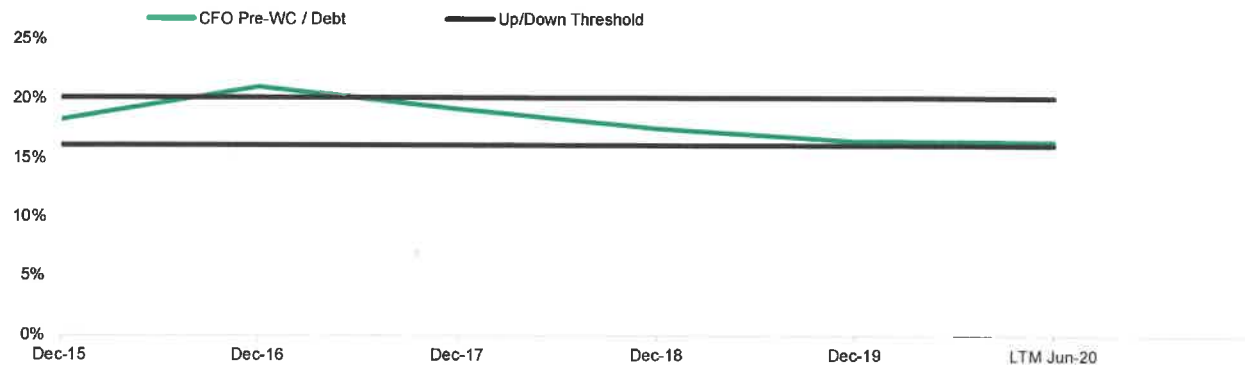
Adequate financial profile, but slightly pressured credit metrics

Historically, LKE has maintained a consistent financial profile with its ratio of CFO pre-WC to debt in the high teens range. However, we expect metrics to be weaker, closer to the mid-teens range, over the next 12-18 months. Furthermore, it is possible that metrics may weaken further due the negative impact of the COVID pandemic. However, we do not expect the impact to be material because the utilities experienced an increase in residential usage while commercial and industrial customer usage declined. In 2019, residential sales generated approximately 40% of KU and LG&E's total revenue while commercial and industrial sales contributed the remainder.

As of the last twelve month (LTM) period ending 30 June 2020, CFO pre-WC to debt was 16.3%, or 17.6% on average for the past three years. The decline in metrics has been caused for the most part by elevated capital investments. However, existing cost recovery mechanisms should result in timely recovery of investments and help LKE maintain its key credit metrics within the adequate ranges.

Exhibit 6

LKE's Historical CFO pre-WC to Debt vs Financial Metric Upgrade/Downgrade Thresholds



The financial metric threshold indicated are one of several factors that could result in an upgrade or downgrade of the ratings if they are above or below that level for a sustained period.
Source: Moody's Financial Metrics

ESG considerations

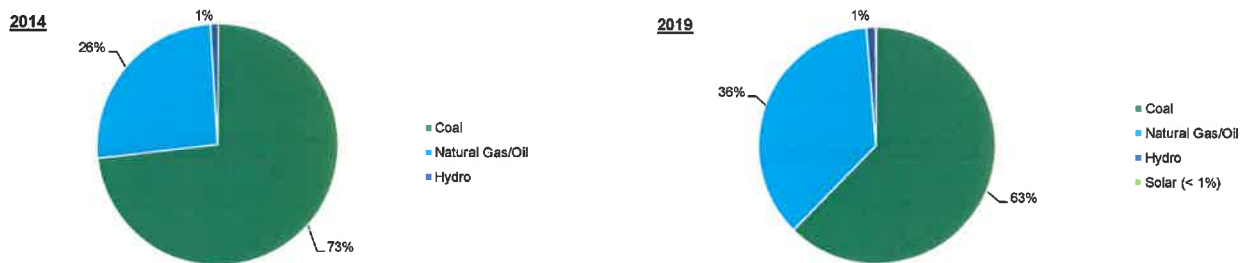
Environmental

LKE has moderate carbon transition risk within the US regulated utility sector because it is a vertically integrated intermediate holding company with regulated utilities that have a large, fossil based generation capacity. Kentucky's political and regulatory environment is supportive of coal mining and related industries. LKE has a total generation capacity of 7.6 GW, and 4.7 GW (62%) is coal-fired, which provides the majority (79%) of the electricity generation output. The remaining 21% of the output is comprised mainly of gas/oil-fired, hydro, and solar facilities. Over the last two years, LKE's fuel mix improved with the addition of the Cane Run 660-MW gas-fired combined-cycle power plant, replacing the older retired coal-fired power plants Tyrone and Green River as well as the Cane Run coal plant. Due to environmental requirements and energy efficiency measures, KU retired two older coal units at the EW Brown plant in the first quarter of 2019 with a combined capacity of 272 MW.

LG&E and KU received approval from the KPSC to develop a 4 MW solar facility to service a solar share program. The solar share program is a voluntary program that allows customers to subscribe capacity in the solar share facility. In January 2020, LG&E and KU requested approval from the KPSC for the purchase of 100 MW of solar power in connection with the green tariff option established in the most recent Kentucky rate cases. KPSC has approved the solar contract subject to changes. LG&E and KU will purchase the initial 20 years of output of a proposed third-party solar generation facility and resell the majority of the power as renewable energy to two large industrial customers and use the remaining power for other customers.

Exhibit 7

LKE Generation Mix (MW)



Source: Company reports

Fuel concentration in coal is typically considered to be a significant credit negative. However, we do not view LKE's high reliance on coal to be as negative as some other companies because the state of Kentucky is very supportive of the coal industry. This support is evidenced by the ECR, which provides the company with credit supportive terms for its investments in coal-related environmental expenditures. However, LKE is exposed to the risk of potentially needing to make a more rapid transition to clean energy in the future if carbon policies change.

PPL has enhanced transparency and disclosure, especially related to its environmental risks, over the last three years. PPL has published a 2019 sustainability report and has also set a more aggressive carbon reduction goal of at least 80% from 2010 levels by 2050 and has accelerated its previous 70% goal by 10 years to 2040. It also reiterated the assessment outcome for considering a two-degree scenario analysis based on the recommendations of the Task Force on Climate Related Financial Disclosure (TCFD). Under these carbon regulation policy scenarios, PPL's analysis indicated that the CO₂ emissions from the company's Kentucky utilities' generation assets would be reduced 45-90% from 2005 levels by 2050.

Social

Social risks are primarily related to the Kentucky utilities customer and regulatory relations as well as demographic and societal trends. LG&E and KU's regulatory environment as well as its interaction with the KPSC and VSCC are important in considering the companies' social risk. Also, the safety and reliability of its operations are extremely important for its social considerations. Given recent developments related to the COVID-19 pandemic, there is a possibility of increasing social risk longer term as the affordability of the utility bill and prolonged recessionary impact have a negative impact on LG&E and KU.

Governance

As an intermediate holding company of PPL, corporate governance considerations include the financial policy and risk management of the parent company. We note that a stable financial position is an important characteristic for managing environmental and social risks.

Liquidity analysis

We expect LKE to maintain an adequate liquidity profile over the next 12-18 months. Although the utilities have an elevated capital investment program over the next few years, we anticipate their liquidity will be supported by relatively stable and predictable cash flow and good access to capital markets.

LKE subsidiaries have separate credit facilities. LG&E's liquidity is supported by a \$500 million syndicated credit facility that expires in January 2024. As of 30 June 2020, the credit facility had \$500 million of available capacity. KU's liquidity is supported by a separate \$400 million syndicated credit facility that expires in January 2024. As of 30 June 2020, the credit facility had \$400 million of available capacity. Both credit facilities contain one financial covenant, a limitation on the ratio of debt to capitalization of 70%, which they were in compliance with at the end of the second quarter of 2020. The facilities do not contain material adverse change clause.

Over the LTM period ending 30 June 2020, LKE generated consolidated cash flow from operations of approximately \$1.2 billion, spent about \$1.1 billion in capital investments and paid \$311 million in dividends, resulting in a negative free cash flow of approximately \$220 million. Due to the high level of planned capital investments at the LKE subsidiaries, we expect LKE to remain in a negative free cash flow position over the next 12-18 months.

LKE's next long-term debt maturity is \$250 million senior notes due in October 2021.

Structural considerations

As an intermediate holding company, the current rating at LKE factors in the degree of structural subordination that exists relative to the debt outstanding at the operating utilities, KU and LG&E. We estimate the percentage of parent debt at LKE to be approximately 22% of the total consolidated debt by subtracting the long-term debt at KU and LG&E from the total long-term debt at LKE. We note that \$650 million of the estimated parent debt is intercompany debt. The consolidated credit profile of PPL also influences LKE's rating.

Rating methodology and scorecard factors

Exhibit 8

Rating Factors

LG&E and KU Energy LLC

Regulated Electric and Gas Utilities Industry Scorecard [1][2]		Current LTM 6/30/2020	Moody's 12-18 Month Forward View As of Date Published [3]	
Factor 1 : Regulatory Framework (25%)	Measure	Score	Measure	Score
a) Legislative and Judicial Underpinnings of the Regulatory Framework	A	A	A	A
b) Consistency and Predictability of Regulation	A	A	A	A
Factor 2 : Ability to Recover Costs and Earn Returns (25%)				
a) Timeliness of Recovery of Operating and Capital Costs	Baa	Baa	Baa	Baa
b) Sufficiency of Rates and Returns	A	A	A	A
Factor 3 : Diversification (10%)				
a) Market Position	Baa	Baa	Baa	Baa
b) Generation and Fuel Diversity	Baa	Baa	Baa	Baa
Factor 4 : Financial Strength (40%)				
a) CFO pre-WC + Interest / Interest (3 Year Avg)	5.5x	A	5x - 5.5x	A
b) CFO pre-WC / Debt (3 Year Avg)	17.1%	Baa	16% - 18%	Baa
c) CFO pre-WC – Dividends / Debt (3 Year Avg)	12.5%	Baa	11% - 13%	Baa
d) Debt / Capitalization (3 Year Avg)	53.7%	Baa	51% - 54%	Baa
Rating:				
Scorecard-Indicated Outcome Before Notching Adjustment		Baa1		Baa1
HoldCo Structural Subordination Notching		-1		-1
a) Scorecard-Indicated Outcome		Baa2		Baa2
b) Actual Rating Assigned		Baa1		Baa1

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.

[2] As of 6/30/2020(L)

[3] This represents Moody's forward view; not the view of the issuer; and unless noted in the text, does not incorporate significant acquisitions and divestitures.

Source: Moody's Financial Metrics

Appendix

Exhibit 9

Cash Flow and Credit Metrics [1]

CF Metrics	Dec-16	Dec-17	Dec-18	Dec-19	LTM Jun-20
As Adjusted					
FFO	1,177	1,129	1,069	1,155	1,172
+/- Other	59	42	77	(29)	(20)
CFO Pre-WC	1,236	1,171	1,146	1,126	1,152
+/- ΔWC	(33)	20	80	(40)	5
CFO	1,203	1,191	1,226	1,086	1,157
- Div	316	402	302	308	311
- Capex	813	915	1,141	1,117	1,066
FCF	74	(126)	(217)	(339)	(220)
(CFO Pre-W/C) / Debt	20.9%	19.1%	17.4%	16.4%	16.3%
(CFO Pre-W/C - Dividends) / Debt	15.6%	12.5%	12.8%	11.9%	11.9%
FFO / Debt	19.9%	18.4%	16.3%	16.8%	16.6%
RCF / Debt	14.6%	11.8%	11.7%	12.3%	12.2%
Revenue	3,141	3,156	3,214	3,206	3,154
Cost of Good Sold	944	923	985	871	783
Interest Expense	227	230	251	268	270
Net Income	429	318	318	456	450
Total Assets	14,475	14,906	15,528	15,931	16,136
Total Liabilities	9,852	10,384	10,844	11,028	11,153
Total Equity	4,623	4,522	4,684	4,903	4,983

[1] All figures and ratios calculated using Moody's estimates & standard adjustments. Periods are Financial Year-End unless indicated otherwise. LTM = Last Twelve Months
Source: Moody's Financial Metrics

Exhibit 10

Peer Comparison Table [1]

(In US millions)	LG&E and KU Energy LLC			Vectren Utility Holdings, Inc.			Progress Energy, Inc.			Pepco Holdings, LLC		
	Baa1 Stable			A3 Stable			Baa1 Stable			Baa2 Stable		
	FYE Dec-18	FYE Dec-19	LTM Jun-20	FYE Dec-18	FYE Dec-19	LTM Jun-20	FYE Dec-18	FYE Dec-19	LTM Jun-20	FYE Dec-18	FYE Dec-19	LTM Jun-20
Revenue	3,214	3,206	3,154	1,441	1,433	1,405	10,728	11,202	10,806	4,798	4,806	4,674
CFO Pre-W/C	1,146	1,126	1,152	407	339	486	2,574	3,482	3,448	1,095	1,217	1,136
Total Debt	6,570	6,872	7,081	1,959	2,185	2,223	21,146	22,520	22,912	6,415	6,859	6,992
CFO Pre-W/C / Debt	17.4%	16.4%	16.3%	20.8%	15.5%	21.9%	12.2%	15.5%	15.0%	17.1%	17.7%	16.3%
CFO Pre-W/C - Dividends / Debt	12.8%	11.9%	11.9%	14.2%	13.3%	18.8%	11.0%	15.5%	15.0%	12.0%	10.1%	8.0%
Debt / Capitalization	53.8%	53.5%	53.7%	45.3%	45.9%	45.5%	54.0%	53.1%	52.6%	34.8%	35.5%	35.3%

[1] All figures & ratios calculated using Moody's estimates & standard adjustments. FYE = Financial Year-End. LTM = Last Twelve Months. RUR* = Ratings under Review, where UPG = for upgrade and DNG = for downgrade
Source: Moody's Financial Metrics

Ratings

Exhibit 11

Category	Moody's Rating
LG&E AND KU ENERGY LLC	
Outlook	Stable
Issuer Rating	Baa1
Senior Unsecured	Baa1
PARENT: PPL CORPORATION	
Outlook	Stable
Issuer Rating	Baa2
KENTUCKY UTILITIES CO.	
Outlook	Stable
Issuer Rating	A3
First Mortgage Bonds	A1
Senior Secured	A1
Sr Unsec Bank Credit Facility	A3
Bkd LT IRB/PC	A1
Commercial Paper	P-2
Bkd Other Short Term	P-2
LOUISVILLE GAS & ELECTRIC COMPANY	
Outlook	Stable
Issuer Rating	A3
First Mortgage Bonds	A1
Senior Secured	A1
Sr Unsec Bank Credit Facility	A3
Bkd LT IRB/PC	A1
Commercial Paper	P-2
Bkd Other Short Term	P-2

Source: Moody's Investors Service

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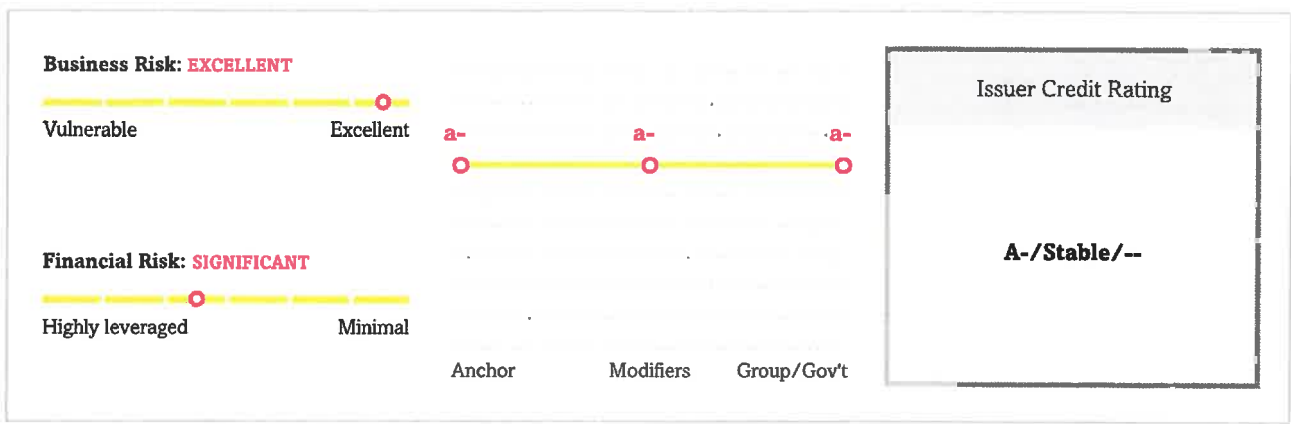
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Related Criteria

LG&E And KU Energy LLC



Credit Highlights

Overview	
Key strengths	Key risks
Regulated, vertically integrated electric and natural gas distribution operations in Kentucky.	Generation capacity is about 70% coal-fired and natural gas.
Generally constructive and stable regulatory framework.	Tax reform results in lower cash flow measures through 2019.
Balanced capital structure that supports the financial risk profile.	Elevated capital spending in part for environmental compliance.
	Geographic concentration mostly in Kentucky and customer base of about 1.3 million.

LG&E and KU Energy LLC (LKE) utilities operate under a credit supportive regulatory frameworkThe company's utilities benefit from numerous regulatory mechanisms including projected test periods, rate riders for environmental investment cost recovery, purchased power, fuel, and natural gas, and formulaic transmission rates.

LKE's debt leverage will remain elevated. Debt leverage, as indicated by debt to EBITDA, is expected to remain elevated in the mid- to high-4x over the next few years, supported in part by timely cost recovery.

Capital spending will remain elevated due to environmental compliance spending. Environmental compliance requirements regarding coal combustion waste and its byproducts are driving elevated capital spending.

Outlook: Stable

The stable rating outlook on LKE reflects that of its parent, PPL Corp. (PPL). The stable outlook over the next 24 months is based on PPL's excellent business risk profile, which we view to be at the upper end of the range, and significant financial risk profile, which is at the lower end of the range. Under our base-case scenario, we expect that adjusted funds from operations (FFO) to debt will range from 13%-14% while adjusted debt to EBITDA will remain elevated at over 5x.

Downside scenario

We could lower the ratings over the next 24 months on PPL and its subsidiaries if core credit ratios weakened enough that adjusted FFO to debt consistently fell below 13% while still at the current level of business risk.

Upside scenario

Given our assessment of business risk and our base-case scenario for financial performance, we do not anticipate higher ratings during the outlook period. However, higher ratings would largely depend on PPL consistently achieving adjusted FFO to debt of more than 18% while maintaining the current level of business risk.

Our Base-Case Scenario

Assumptions	Key Metrics			
<ul style="list-style-type: none"> In 2018, gross margins decline from the impact of tax reform, with margin growth in 2019 and beyond resuming as a result of various recovery mechanisms and rate cases. Capital expenditures of approximately \$1.3 billion in 2019 for generation upgrades and transmission investments. All debt maturities are refinanced. 		2018E	2019E	2020E
	Adjusted FFO to debt (%)	14-16	14.5-16.5	16.5-18.5
	Adjusted FFO cash interest coverage (x)	5.3-5.9	5.3-5.9	5.7-6.3
	Adjusted debt to EBITDA (x)	4.7-5.1	4.7-5.1	4.2-4.6
E--Estimate. FFO--Funds from operations.				

Base-case projections

- Gross margin increases from modest sales growth and cost recovery through various rate mechanisms.
- Debt to EBITDA in the 4x-5x range, indicating greater use of debt leverage.
- Adjusted FFO to debt expected to be roughly 15% in 2019 with improvement over time as LKE benefits from incremental cost recovery.

Company Description

LKE is an intermediate holding company that owns two utilities providing electric and natural gas utility service to 1.3 million customers primarily in Kentucky.

Business Risk: Excellent

Our assessment of LKE's business risk profile incorporates the business strengths of its wholly owned subsidiaries Louisville Gas & Electric Co. (LG&E) and Kentucky Utilities Co. (KU). These utilities provide regulated, vertically integrated electric and natural gas distribution services primarily across Kentucky, with smaller service territories in Tennessee and Virginia. The geographic concentration in Kentucky is partly offset by the large customer base of about 1.3 million electric and natural gas customers. The company's customer base consists mostly of residential and commercial customers, mitigating the impact of fluctuations in demand and resulting in stable and predictable cash flows.

Moreover, the company benefits from numerous regulatory mechanisms, including forecast test years, environmental investment cost recovery, purchased power, fuel, and gas surcharges, and formulaic transmission rates. The utilities' low rates are derived from relatively safe and reliable coal-fired generation and regulatory lag is partly limited by the timely recovery of costs.

Peer comparison

LKE is in line with regulated vertically integrated electric and natural gas distribution utility peers like Integrys Holding Inc., NV Energy (NVE), and Evergy Inc. In terms of scale, LKE is comparable to NVE, which has 1.2 million electric customers and 200,000 natural gas customers, Evergy Inc., which has 1.6 million electric customers, and Integrys, which has 1.8 million natural gas customers and 500,000 electric customers. The regulatory environment for LKE is considered more supportive than that for NVE because of Nevada's heightened politicization of utility-related policies, including long-term energy generation planning. LKE's operations are in line with Integrys and Evergy because all of them benefit from supportive cost recovery mechanisms and constructive regulatory environments.

Table 1

Peer Comparison				
Industry sector: electric				
	LG&E and KU Energy LLC	Integrys Holding Inc	NV Energy Inc.	Evergy Inc.
Rating as of Jan. 15, 2019	A-/Stable/–	A-/Stable/A-2	A/Stable/NR	A-/Stable/A-2
–Fiscal year ended Dec. 31, 2017–				
(MIL. \$)				
Revenues	3,156.0	3,264.9	3,016.0	2,571.0
EBITDA	1,452.1	1,132.2	1,243.7	1,155.5
FFO	1,095.0	942.4	950.7	929.4
Net income from continuing operations	316.0	390.4	344.0	323.9
Cash flow from operations	1,129.1	895.7	922.7	912.9

Table 1

Peer Comparison (cont.)				
Industry sector: electric				
	LG&E and KU Energy LLC	Integrus Holding Inc	NV Energy Inc.	Eergy Inc.
Capital expenditures	893.7	998.7	466.8	759.0
Free operating cash flow	235.4	(103.0)	455.9	153.9
Discretionary cash flow	(166.6)	(103.0)	(190.1)	(75.0)
Cash and short-term investments	30.0	19.3	62.0	3.4
Debt	6,562.0	4,460.8	5,294.3	4,938.0
Equity	4,563.0	4,103.1	3,631.0	3,860.4
Adjusted ratios				
EBITDA margin (%)	46.0	34.7	41.2	44.9
Return on capital (%)	7.3	8.3	7.9	7.2
EBITDA interest coverage (x)	5.3	5.6	4.2	5.0
FFO cash interest coverage (X)	6.7	8.2	5.4	7.1
Debt/EBITDA (x)	4.5	3.9	4.3	4.3
FFO/debt (%)	16.7	21.1	18.0	18.8
Cash flow from operations/debt (%)	17.2	20.1	17.4	18.5
Free operating cash flow/debt (%)	3.6	(2.3)	8.6	3.1
Discretionary cash flow/debt (%)	(2.5)	(2.3)	(3.6)	(1.5)

FFO—Funds from operations.

Table 2

Peer Metrics				
	LG&E and KU Energy LLC	Integrus Holding Inc	NV Energy Inc.	Eergy, Inc.
Long-term (foreign currency)	A-/Stable	A-/Stable	A/Stable	A-/Stable
Short-term (foreign currency)		A-2	NR	A-2
Business risk profile	Excellent	Excellent	Strong	Excellent
Financial risk profile	Significant	Significant	Significant	Significant
Anchor	a-	a-	bbb	a-
Capital structure	Neutral	Neutral	Neutral	Neutral
Liquidity	Adequate	Adequate	Adequate	Adequate
Financial policy	Neutral	Neutral	Neutral	Neutral
Management/governance	Satisfactory	Satisfactory	Satisfactory	Satisfactory
Comparable rating analysis	Neutral	Neutral	Neutral	Neutral
Stand-alone credit profile	a-	a-	bbb	a-
GRM adjustment	0	0	+3	0
Issuer credit rating	A-	A-	A	A-

GRM—Group rating methodology. NR—Not rated.

Financial Risk: Significant

Under our base-case scenario, we anticipate that LKE's stand-alone adjusted FFO to debt will be in the 14%-16% range in 2019. Over the next few years we expect FFO to debt to improve to the 16%-18% range as the company benefits from recovery mechanisms like the environmental cost rider, as well as formulaic transmission rates and forward test years for rate cases. We expect adjusted debt to EBITDA to be in 4.5x-5x range, indicating debt leverage within the benchmark range of an aggressive financial risk profile.

We utilize our medial volatility table, which reflects more relaxed benchmarks than most corporate issuers. This reflects the company's steady cash flow and rate-regulated utility operations and effective regulatory risk management.

Table 3

Financial Summary					
Industry sector: electric					
	--Fiscal year ended Dec. 31--				
	2017	2016	2015	2014	2013
Rating history	A-/Stable/--	A-/Stable/--	A-/Stable/--	BBB/Watch Pos/--	BBB/Stable/--
(Mil. \$)					
Revenues	3,156.0	3,141.0	3,115.0	3,168.0	2,976.0
EBITDA	1,452.1	1,418.6	1,286.3	1,148.9	1,112.4
FFO	1,095.0	1,163.9	1,046.5	1,171.9	930.6
Net income from continuing operations	316.0	429.0	364.0	344.0	345.0
Cash flow from operations	1,129.1	1,077.8	1,089.5	1,018.9	1,012.5
Capital expenditures	893.7	792.7	1,211.3	1,273.5	1,445.5
Free operating cash flow	235.4	285.2	(121.8)	(254.6)	(433.0)
Discretionary cash flow	(166.6)	(30.8)	(340.8)	(690.6)	(687.0)
Cash and short-term investments	30.0	13.0	30.0	21.0	35.0
Debt	6,562.0	6,355.8	6,353.1	5,857.9	5,432.4
Equity	4,563.0	4,667.0	4,517.0	4,248.0	4,150.0
Adjusted ratios					
EBITDA margin (%)	46.0	45.2	41.3	36.3	37.4
Return on capital (%)	7.3	7.5	7.0	6.8	7.3
EBITDA interest coverage (x)	5.3	5.2	5.5	5.3	5.9
FFO cash interest coverage (x)	6.7	7.3	7.9	8.9	8.2
Debt/EBITDA (x)	4.5	4.5	4.9	5.1	4.9
FFO/debt (%)	16.7	18.3	16.5	20.0	17.1
Cash flow from operations/debt (%)	17.2	17.0	17.1	17.4	18.6
Free operating cash flow/debt (%)	3.6	4.5	(1.9)	(4.3)	(8.0)
Discretionary cash flow/debt (%)	(2.5)	(0.5)	(5.4)	(11.8)	(12.6)

FFO--Funds from operations.

Liquidity: Adequate

We assess LKE's stand-alone liquidity as adequate because we believe its liquidity sources will likely cover uses by more than 1.1x over the next 12 months and meet cash outflows even if EBITDA declines 10%.

We believe LKE has sound banking relationships, the ability to absorb high-impact, low probability events without the need for refinancing, and a satisfactory standing in the credit markets.

Principal Liquidity Sources	Principal Liquidity Uses
<ul style="list-style-type: none"> • Combined revolving credit facility availability of \$975 million. • Estimated cash FFO of about \$1 billion. 	<ul style="list-style-type: none"> • Capital spending of approximately \$1.3 billion. • Dividends of \$282 million. • Debt maturities of \$618 million.

Debt maturities

- 2019: \$430 million
- 2020: \$975 million
- 2021: \$250 million
- 2022: \$0

Covenant Analysis

Compliance expectations

As of Sept. 30, 2018, LKE was in compliance with the financial covenants in its credit facilities and had sufficient cushion. Under our base-case scenario, we expect LKE will remain in compliance with these covenants, especially given the stability of regulated utility operations. We expect that even if EBITDA declines 10% the company would not violate its covenants.

Requirements

- Total debt-to-capitalization ratio of 70% or less.
- The covenant thresholds remain unchanged through the credit facility's expiration.

Environmental, Social, And Governance

Environmental factors are material in our rating analysis, while social and governance factors are not.

LKE is the intermediate holding company of LG&E and KU, both of which have generating assets. Most of the total generation capacity—about 8,000 megawatts—is from coal and natural gas, which represents an environmental risk factor. However, by 2050, holding company PPL intends to reduce its carbon footprint by 70%. In Kentucky, the company is seeking a green energy tariff that would incentivize renewable energy. The company expects to replace much of its coal-based generation with a combination of natural gas and renewable generation.

Social factors are neutral to our ESG assessment and are consistent with what we see across the industry for other publicly traded utilities. By pursuing greater renewable generation, the company is meeting customer demand for greener energy. Governance factors are also neutral to our ESG assessment and the company's governance practices are consistent with what we see across the industry for other publicly traded utilities.

Group Influence

Under our group rating methodology, we consider LKE a core subsidiary of parent PPL Corp., reflecting our view the LKE is highly unlikely to be sold, is integral to the group's overall strategy, possesses a strong long-term commitment from senior management, and is closely linked to the parent's name and reputation. We assess the issuer credit rating on LKE as 'A-', in line with PPL's group credit profile of 'a-'.

Issue Ratings - Subordination Risk Analysis

Capital structure

LKE's capital structure consists of about \$5 billion of debt of which priority debt is about \$4 billion.

Analytical conclusions

The unsecured debt at LKE is rated one notch below the issuer credit rating because priority debt exceeds 50% of the company's consolidated debt, after which point LKE's debt could be considered structurally subordinated.

Reconciliation

Table 4

Reconciliation Of LG&E And KU Energy LLC Reported Amounts With S&P Global Ratings' Adjusted Amounts (Mil. \$)

--Rolling 12 months ended Sept. 30, 2018--

LG&E and KU Energy LLC reported amounts.

	Debt	Shareholders' equity	Revenues	EBITDA	Operating income	Interest expense	EBITDA	Cash flow from operations	Dividends paid	Capital expenditures
	5,885	4,708	3,223	1,329	860	226	1,329	966	303	1,139
S&P Global Ratings' adjustments										
Interest expense (reported)	--	--	--	--	--	--	(226)	--	--	--
Interest income (reported)	--	--	--	--	--	--	--	--	--	--
Current tax expense (reported)	--	--	--	--	--	--	(90)	--	--	--
Operating leases	69	--	--	25	5	5	20	20	--	--
Postretirement benefit obligations / deferred compensation	376	--	--	18	18	20	0	(10)	--	--
Surplus cash	(29)	--	--	--	--	--	--	--	--	--
Share-based compensation expense	--	--	--	9	--	--	9	--	--	--
Power purchase agreements	106	--	--	9	7	7	2	2	--	2
Asset retirement obligations	250	--	--	18	18	18	(6)	32	--	--
Debt - Accrued interest not included in reported debt	73	--	--	--	--	--	--	--	--	--
Debt - Issuance cost	27	--	--	--	--	--	--	--	--	--
EBITDA - other income/(expense)	--	--	--	24	24	--	24	--	--	--
EBITDA - other	--	--	--	(19)	(19)	--	(19)	--	--	--
D&A - other	--	--	--	--	(18)	--	--	--	--	--
Interest expense - other	--	--	--	--	--	5	(5)	--	--	--
Total adjustments	873	0	0	84	35	56	(292)	44	0	2

S&P Global Ratings' adjusted amounts

	Debt	Equity	Revenues	EBITDA	EBIT	Interest expense	Funds from Operations	Cash flow from operations	Dividends paid	Capital expenditures
	6,758	4,708	3,223	1,413	895	282	1,037	1,010	303	1,141

D&A--Depreciation and amortization.

Ratings Score Snapshot

Issuer Credit Rating

A-/Stable/--

Business risk: Excellent

- **Country risk:** Very low
- **Industry risk:** Very low
- **Competitive position:** Excellent

Financial risk: Significant

- **Cash flow/Leverage:** Significant

Anchor: a-

Modifiers

- **Diversification/Portfolio effect:** Neutral (no impact)
- **Capital structure:** Neutral (no impact)
- **Financial policy:** Neutral (no impact)
- **Liquidity:** Adequate (no impact)
- **Management and governance:** Satisfactory (no impact)
- **Comparable rating analysis:** Neutral (no impact)

Stand-alone credit profile : a-

- **Group credit profile:** a-
- **Entity status within group:** Core (no impact)

Related Criteria

- Criteria - Corporates - General: Reflecting Subordination Risk In Corporate Issue Ratings, March 28, 2018
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- Criteria - Corporates - General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Criteria - Corporates - General: Corporate Methodology: Ratios And Adjustments, Nov. 19, 2013
- Criteria - Corporates - General: Corporate Methodology, Nov. 19, 2013
- Criteria - Corporates - Utilities: Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Group Rating Methodology, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013

- Criteria - Corporates - Utilities: Collateral Coverage And Issue Notching Rules For '1+' And '1' Recovery Ratings On Senior Bonds Secured By Utility Real Property, Feb. 14, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities And Insurers, Nov. 13, 2012
- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009
- Criteria - Insurance - General: Hybrid Capital Handbook: September 2008 Edition, Sept. 15, 2008

Business And Financial Risk Matrix

Business Risk Profile	Financial Risk Profile					
	Minimal	Modest	Intermediate	Significant	Aggressive	Highly leveraged
Excellent	aaa/aa+	aa	a+/a	a-	bbb	bbb-/bb+
Strong	aa/aa-	a+/a	a-/bbb+	bbb	bb+	bb
Satisfactory	a/a-	bbb+	bbb/bbb-	bbb-/bb+	bb	b+
Fair	bbb/bbb-	bbb-	bb+	bb	bb-	b
Weak	bb+	bb+	bb	bb-	b+	b/b-
Vulnerable	bb-	bb-	bb-/b+	b+	b	b-

Ratings Detail (As Of February 8, 2019)

LG&E and KU Energy LLC

Issuer Credit Rating A-/Stable/--
Senior Unsecured BBB+

Issuer Credit Ratings History

01-Jun-2015 A-/Stable/--
10-Jun-2014 BBB/Watch Pos/--
15-Apr-2011 BBB/Stable/--

Related Entities

Kentucky Utilities Co.

Issuer Credit Rating A-/Stable/A-2
Commercial Paper
Local Currency A-2
Senior Secured A

Louisville Gas & Electric Co.

Issuer Credit Rating A-/Stable/A-2
Commercial Paper
Local Currency A-2
Senior Secured A

PPL Capital Funding Inc.

Issuer Credit Rating A-/Stable/A-2

PPL Corp.

Issuer Credit Rating A-/Stable/A-2

Ratings Detail (As Of February 8, 2019) (cont.)

PPL Electric Utilities Corp.

Issuer Credit Rating	A-/Stable/A-2
Commercial Paper	
<i>Local Currency</i>	A-2
Senior Secured	A

Western Power Distribution (East Midlands) PLC

Issuer Credit Rating	A-/Stable/A-2
Senior Unsecured	A-

Western Power Distribution PLC

Issuer Credit Rating	A-/Stable/A-2
Senior Unsecured	BBB+

Western Power Distribution (South Wales) PLC

Issuer Credit Rating	A-/Stable/A-2
Senior Unsecured	A-

Western Power Distribution (South West) PLC

Issuer Credit Rating	A-/Stable/A-2
Senior Unsecured	A-

Western Power Distribution (West Midlands) PLC

Issuer Credit Rating	A-/Stable/A-2
Senior Unsecured	A-

*Unless otherwise noted, all ratings in this report are global scale ratings. S&P Global Ratings' credit ratings on the global scale are comparable across countries. S&P Global Ratings' credit ratings on a national scale are relative to obligors or obligations within that specific country. Issue and debt ratings could include debt guaranteed by another entity, and rated debt that an entity guarantees.

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LG&E And KU Energy LLC

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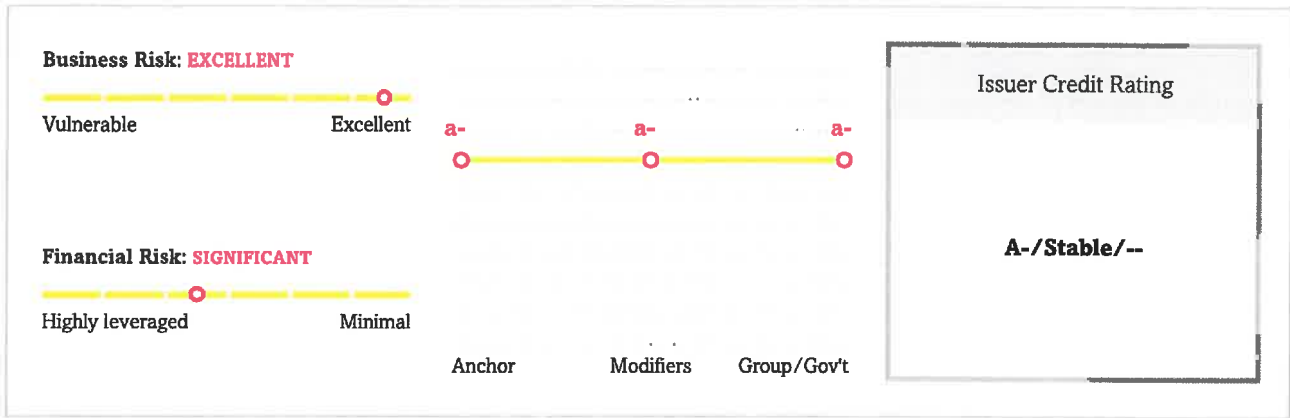
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LG&E And KU Energy LLC



Credit Highlights

Overview	
Key strengths	Key risks
Regulated, vertically integrated electric and natural gas distribution operations in Kentucky.	Generation capacity currently about 70% coal-fired and natural gas.
Generally constructive and stable regulatory framework.	Lower cash flow measures after flowing through U.S. tax-reform-related rate credits.
Balanced capital structure that supports the financial risk profile.	Elevated capital spending in part for environmental compliance.
	Geographic concentration mostly in Kentucky and customer base of about 1.3 million.

LG&E and KU Energy LLC (LKE) utilities operate under a credit-supportive regulatory framework. LKE's utilities benefit from numerous regulatory mechanisms including projected test periods; rate riders for environmental investment cost recovery, purchased power, fuel, and natural gas; and formulaic transmission rates.

LKE's debt leverage will remain elevated. We expect debt leverage, as indicated by debt to EBITDA, to remain elevated in the low-5x area over the next few years.

Capital spending will remain elevated due to environmental compliance spending. Environmental compliance requirements regarding coal-combustion waste and its byproducts are driving elevated capital spending.

Outlook: Stable

The stable rating outlook on LKE reflects that of its parent PPL Corp. (PPL) over the next 24 months. We base the outlook on our assessment of PPL's excellent business risk profile, which is at the upper end of the range, and significant financial risk profile, which is at the lower end of the range. Under S&P Global Ratings' base case scenario, PPL's adjusted funds from operations (FFO) to debt will average about 14%, and adjusted debt to EBITDA will remain elevated at about 5x.

Downside scenario

We could lower the ratings on PPL and its subsidiaries over the next 24 months if core credit ratios weakened such that adjusted FFO to debt consistently stays below 13% and business risk remains unchanged.

Upside scenario

Given our assessment of business risk and our base case scenario for financial performance, we do not anticipate higher ratings during the outlook period. However, we could raise our ratings if PPL achieves adjusted FFO to debt of more than 18% on a consistent basis while maintaining the current level of business risk.

Our Base-Case Scenario

Assumptions	Key Metrics			
<ul style="list-style-type: none"> Gross margin averages about 70% per year after growth and cost recovery through various rate mechanisms. EBITDA margin is roughly 40% per year. Capital spending averages about \$1 billion for generation upgrades and transmission investments. Dividends of about \$300 million per year Discretionary cash flow is negative, requiring external funding. All debt maturities are refinanced. 		2020e	2021f	2022f
	Adjusted FFO to debt (%)	14-16	13.5-15.5	13-15
	Adjusted FFO cash interest coverage (x)	4.7-5.3	4.4-5.1	4.2-4.9
	Adjusted debt to EBITDA (x)	5-5.5	5-5.5	5.2-5.7
	e--Estimate. f----Forecast. FFO--Funds from operations.			

Company Description

LKE is an intermediate holding company that owns two utilities providing electric and natural gas utility service to 1.3 million customers, primarily in Kentucky.

Business Risk: Excellent

Our assessment of LKE's business risk profile incorporates the business strengths of its wholly owned subsidiaries Louisville Gas & Electric Co. (LG&E) and Kentucky Utilities Co. (KU). These utilities provide regulated, vertically integrated electric and natural gas distribution services primarily across Kentucky, with smaller service territories in Tennessee and Virginia. The geographic concentration in Kentucky is partly offset by the large customer base of about 1.3 million electric and natural gas customers. The company's customer base consists mostly of residential and commercial customers, mitigating the impact of fluctuations in demand and resulting in stable and predictable cash flows.

Moreover, the company benefits from numerous regulatory mechanisms, including forecast test years, environmental investment cost recovery, purchased power, fuel, and gas surcharges, and formulaic transmission rates. The utilities' low rates are derived from relatively safe and reliable coal-fired generation and regulatory lag is partly limited by the timely recovery of costs.

Peer comparison

Table 1

Peer Comparison				
Industry sector: electric				
	LG&E and KU Energy LLC	Integrys Holding Inc.	NV Energy Inc.	Eversource Inc.
Ratings as of March 4, 2020	A-/Stable/--	A-/Stable/A-2	A/Stable/-	A-/Stable/A-2
	--Fiscal year ended Dec. 31, 2018--	--Fiscal year ended Dec. 31, 2018--	--Fiscal year ended Dec. 31, 2018--	--Fiscal year ended Dec. 31, 2018--
(Mil. \$)				
Revenue	3,214.0	3,344.7	3,039.2	4,275.9
EBITDA	1,372.1	992.4	1,119.5	1,696.9
Funds from operations (FFO)	1,096.3	834.8	846.7	1,414.4
Interest expense	267.6	185.6	275.9	339.7
Cash interest paid	229.9	156.5	272.9	283.4
Cash flow from operations	935.3	927.0	940.6	1,508.9
Capital expenditure	1,118.7	1,173.8	520.2	1,065.6
Free operating cash flow (FOCF)	(183.4)	(246.9)	420.4	443.3
Discretionary cash flow (DCF)	(485.4)	(246.9)	420.4	(1,074.0)
Cash and short-term investments	24.0	24.7	223.0	160.3
Debt	6,869.2	4,216.5	4,813.7	9,559.5
Equity	4,723.0	3,989.6	3,930.1	9,990.7
Adjusted ratios				
EBITDA margin (%)	42.7	29.7	36.8	39.7

Table 1

Peer Comparison (cont.)				
Industry sector: electric				
	LG&E and KU Energy LLC	Integrus Holding Inc.	NV Energy Inc.	Eversource Inc.
Ratings as of March 4, 2020	A-/Stable/--	A-/Stable/A-2	A/Stable/-	A-/Stable/A-2
	--Fiscal year ended Dec. 31, 2018--	--Fiscal year ended Dec. 31, 2018--	--Fiscal year ended Dec. 31, 2018--	--Fiscal year ended Dec. 31, 2018--
Return on capital (%)	7.4	7.8	7.6	6.3
EBITDA interest coverage (x)	5.1	5.3	4.1	5.0
FFO cash interest coverage (x)	5.8	6.3	4.1	6.0
Debt/EBITDA (x)	5.0	4.2	4.3	5.6
FFO/debt (%)	16.0	19.8	17.6	14.8
Cash flow from operations/debt (%)	13.6	22.0	19.5	15.8
FOCF/debt (%)	(2.7)	(5.9)	8.7	4.6
DCF/debt (%)	(7.1)	(5.9)	8.7	(11.2)

Source: S&P Global Ratings, company data.

Financial Risk: Significant

Under our base case scenario, we anticipate that LKE's stand-alone adjusted FFO to debt will be in the 14%-16% range in 2019. Over the next few years, we expect FFO to debt to improve to the 16%-18% range as the company benefits from recovery mechanisms like the environmental cost rider, as well as formulaic transmission rates and forward test years for rate cases. We expect adjusted debt to EBITDA to be in 4.5x-5x range, indicating debt leverage within the benchmark range of an aggressive financial risk profile.

We utilize our medial volatility table, which reflects more relaxed benchmarks as compared to most corporate issuers. This reflects the company's steady cash flow and rate-regulated utility operations and effective regulatory risk management.

Table 2

LG&E and KU Energy LLC -- Financial Summary					
Industry Sector: Electric					
	--Fiscal year ended Dec. 31--				
	2018	2017	2016	2015	2014
(Mil. \$)					
Revenue	3,214.0	3,156.0	3,141.0	3,115.0	3,168.0
EBITDA	1,372.1	1,452.1	1,418.6	1,286.3	1,148.9
Funds from operations (FFO)	1,096.3	1,187.7	1,231.5	1,249.8	1,053.5
Interest expense	267.6	253.6	255.1	217.5	200.4

Table 2

LG&E and KU Energy LLC -- Financial Summary (cont.)

	--Fiscal year ended Dec. 31--				
	2018	2017	2016	2015	2014
Cash interest paid	229.9	216.5	211.1	175.5	170.4
Cash flow from operations	935.3	1,120.7	1,047.5	1,079.8	1,022.5
Capital expenditure	1,118.7	893.7	792.7	1,211.3	1,273.5
Free operating cash flow (FOCF)	(183.4)	227.0	254.8	(131.5)	(251.0)
Discretionary cash flow (DCF)	(485.4)	(175.0)	(61.2)	(350.5)	(687.0)
Cash and short-term investments	24.0	30.0	13.0	30.0	21.0
Gross available cash	24.0	30.0	13.0	30.0	21.0
Debt	6,869.2	6,503.0	6,294.8	6,321.1	5,834.9
Equity	4,723.0	4,563.0	4,667.0	4,517.0	4,248.0
Adjusted ratios					
EBITDA margin (%)	42.7	46.0	45.2	41.3	36.3
Return on capital (%)	7.4	8.7	8.7	8.1	7.7
EBITDA interest coverage (x)	5.1	5.7	5.6	5.9	5.7
FFO cash interest coverage (x)	5.8	6.5	6.8	8.1	7.2
Debt/EBITDA (x)	5.0	4.5	4.4	4.9	5.1
FFO/debt (%)	16.0	18.3	19.6	19.8	18.1
Cash flow from operations/debt (%)	13.6	17.2	16.6	17.1	17.5
FOCF/debt (%)	(2.7)	3.5	4.0	(2.1)	(4.3)
DCF/debt (%)	(7.1)	(2.7)	(1.0)	(5.5)	(11.8)

Sources: S&P Global Ratings, company data.

Liquidity: Adequate

We assess LKE's stand-alone liquidity as adequate because we believe its liquidity sources will likely cover uses by more than 1.1x over the next 12 months and meet cash outflows even if EBITDA declines 10%.

We believe LKE has sound banking relationships, the ability to absorb high-impact, low probability events without the need for refinancing, and a satisfactory standing in the credit markets.

Principal Liquidity Sources	Principal Liquidity Uses
<ul style="list-style-type: none"> • Combined revolving credit facility availability of \$975 million. • Estimated cash FFO of about \$1 billion. 	<ul style="list-style-type: none"> • Capital spending of approximately \$1.3 billion. • Dividends of \$282 million. • Debt maturities of \$618 million.

Environmental, Social, And Governance

LKE's credit quality is more negatively influenced by environmental risk factors than peers given its significant exposure to coal-based power generation through utilities LG&E and KU. Most of the total generation capacity--about 8,000 MW--is from coal and natural gas. In Kentucky, the company is seeking a green energy tariff that would provide renewable energy incentives. Over the longer term, the company expects to replace much of its coal-based generation with a combination of natural gas and renewable generation. Social factors are neutral to our ESG assessment and are consistent with what we see across the industry for other publicly traded utilities. Governance factors are also neutral to our ESG assessment and the company's governance practices are consistent with what we see across the industry for other publicly traded utilities.

Group Influence

Under our group rating methodology, we consider LKE a core subsidiary of parent PPL Corp., reflecting our view the LKE is highly unlikely to be sold, is integral to the group's overall strategy, possesses a strong long-term commitment from senior management, and is closely linked to the parent's name and reputation. We assess the issuer credit rating on LKE as 'A-', in line with PPL's group credit profile of 'a-'.

Issue Ratings - Subordination Risk Analysis

Capital structure

LKE's capital structure consists of about \$5 billion of debt of which priority debt is about \$4 billion.

Analytical conclusions

The unsecured debt at LKE is rated one notch below the issuer credit rating because priority debt exceeds 50% of the company's consolidated debt, after which, LKE's debt could be considered structurally subordinated.

Reconciliation

Table 3

Reconciliation Of LG&E And KU Energy LLC Reported Amounts With S&P Global Ratings' Adjusted Amounts (Mil. \$)

--Fiscal year ended Dec. 31, 2019--

LG&E and KU Energy LLC reported amounts	Debt	EBITDA	Operating income	Interest expense	S&P Global Ratings' adjusted EBITDA	Cash flow from operations
	6,539.0	1,388.0	841.0	257.0	1,466.0	938.0
S&P Global Ratings' adjustments						
Cash taxes paid	--	--	--	--	(29.0)	--

Table 3

Reconciliation Of LG&E And KU Energy LLC Reported Amounts With S&P Global Ratings' Adjusted Amounts (Mil. \$) (cont.)						
Cash taxes paid: Other	--	--	--	--	--	--
Cash interest paid	--	--	--	--	(237.0)	--
Reported lease liabilities	55.0	--	--	--	--	--
Operating leases	--	25.0	2.2	2.2	(2.2)	22.8
Postretirement benefit obligations/deferred compensation	222.0	--	--	--	--	--
Accessible cash and liquid investments	(27.0)	--	--	--	--	--
Share-based compensation expense	--	9.0	--	--	--	--
Asset retirement obligations	169.9	17.0	17.0	17.0	--	--
Nonoperating income (expense)	--	--	(13.0)	--	--	--
Debt: Other	(35.0)	--	--	--	--	--
EBITDA: Other income/(expense)	--	27.0	27.0	--	--	--
Depreciation and amortization: Other	--	--	(27.0)	--	--	--
Total adjustments	384.8	78.0	6.2	19.2	(268.2)	22.8
S&P Global Ratings' adjusted amounts						
	Debt	EBITDA	EBIT	Interest expense	Funds from operations	Cash flow from operations
	6,923.8	1,466.0	847.2	276.2	1,197.8	960.8

Sources: S&P Global Ratings, company data.

Ratings Score Snapshot

Issuer Credit Rating

A-/Stable/--

Business risk: Excellent

- **Country risk:** Very low
- **Industry risk:** Very low
- **Competitive position:** Excellent

Financial risk: Significant

- **Cash flow/leverage:** Significant

Anchor: a-

Modifiers

- **Diversification/portfolio effect:** Neutral (no impact)
- **Capital structure:** Neutral (no impact)

- **Financial policy:** Neutral (no impact)
- **Liquidity:** Adequate (no impact)
- **Management and governance:** Satisfactory (no impact)
- **Comparable rating analysis:** Neutral (no impact)

Stand-alone credit profile : a-

- **Group credit profile:** a-
- **Entity status within group:** Core (no impact)

Related Criteria

- General Criteria: Group Rating Methodology, July 1, 2019
- Criteria - Corporates - General: Corporate Methodology: Ratios And Adjustments, April 1, 2019
- Criteria - Corporates - General: Reflecting Subordination Risk In Corporate Issue Ratings, March 28, 2018
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- Criteria - Corporates - General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Criteria - Corporates - General: Corporate Methodology, Nov. 19, 2013
- Criteria - Corporates - Utilities: Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Group Rating Methodology, July 1, 2019
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- Criteria - Corporates - Utilities: Collateral Coverage And Issue Notching Rules For '1+' And '1' Recovery Ratings On Senior Bonds Secured By Utility Real Property, Feb. 14, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities And Insurers, Nov. 13, 2012
- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009

Business And Financial Risk Matrix

Business Risk Profile	Financial Risk Profile					
	Minimal	Modest	Intermediate	Significant	Aggressive	Highly leveraged
Excellent	aaa/aa+	aa	a+ / a	a-	bbb	bbb-/bb+
Strong	aa/aa-	a+ / a	a- /bbb+	bbb	bb+	bb
Satisfactory	a/a-	bbb+	bbb/bbb-	bbb-/bb+	bb	b+
Fair	bbb/bbb-	bbb-	bb+	bb	bb-	b
Weak	bb+	bb+	bb	bb-	b+	b/b-
Vulnerable	bb-	bb-	bb-/b+	b+	b	b-

Ratings Detail (As Of March 20, 2020)*

LG&E and KU Energy LLC

Issuer Credit Rating	A-/Stable/--
Senior Unsecured	BBB+

Issuer Credit Ratings History

01-Jun-2015	A-/Stable/--
10-Jun-2014	BBB/Watch Pos/--
15-Apr-2011	BBB/Stable/--

*Unless otherwise noted, all ratings in this report are global scale ratings. S&P Global Ratings' credit ratings on the global scale are comparable across countries. S&P Global Ratings' credit ratings on a national scale are relative to obligors or obligations within that specific country. Issue and debt ratings could include debt guaranteed by another entity, and rated debt that an entity guarantees.

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Summary:

LG&E And KU Energy LLC

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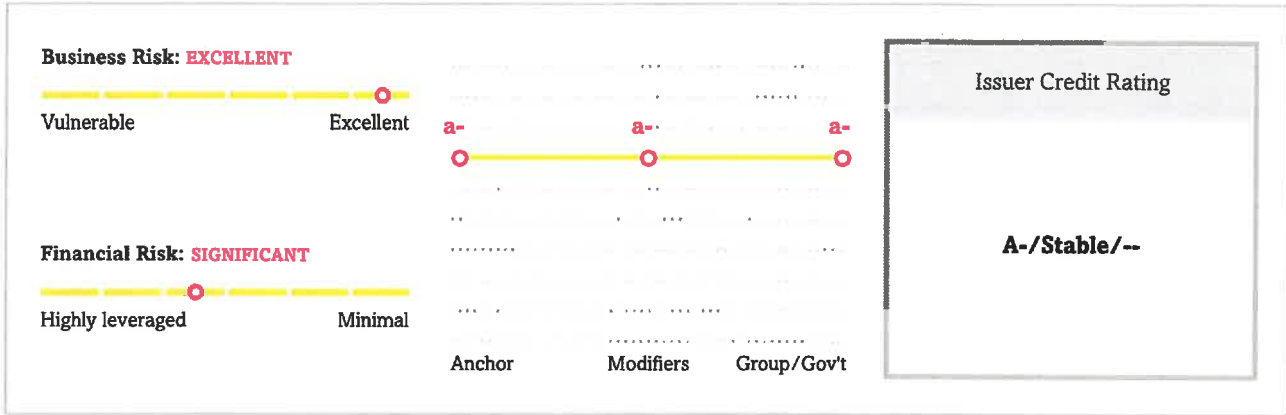
Issue Ratings - Subordination Risk Analysis

Ratings Score Snapshot

Related Criteria

Summary:

LG&E And KU Energy LLC



Credit Highlights

Overview

Key strengths	Key risks
Regulated, vertically integrated electric and natural gas distribution operations in Kentucky.	Generation capacity is about 70% coal-fired and natural gas.
Generally constructive and stable regulatory framework.	Tax reform results in lower cash flow measures through 2019.
Balanced capital structure that supports the financial risk profile.	Elevated capital spending in part for environmental compliance.
	Geographic concentration mostly in Kentucky and customer base of about 1.3 million.

LG&E and KU Energy LLC (LKE) utilities operate under a credit-supportive regulatory framework.

The company's utilities benefit from numerous regulatory mechanisms including projected test periods, rate riders for environmental investment cost recovery, purchased power, fuel, and natural gas, and formulaic transmission rates.

LKE's debt leverage will remain elevated.

Debt leverage, as indicated by debt to EBITDA, is expected to remain elevated in the mid- to high-4x over the next few years, supported in part by timely cost recovery.

Capital spending will remain elevated due to environmental compliance spending.

Environmental compliance requirements regarding coal combustion waste and its byproducts are driving elevated capital spending.

Outlook: Stable

The stable rating outlook on LKE reflects that of its parent, PPL Corp. (PPL). The stable outlook over the next 24 months is based on PPL's excellent business risk profile, which we view to be at the upper end of the range, and significant financial risk profile, which is at the lower end of the range. Under our base-case scenario, we expect that adjusted funds from operations (FFO) to debt will range from 13%-14% while adjusted debt to EBITDA will remain elevated at over 5x.

Downside scenario

We could lower the ratings over the next 24 months on PPL and its subsidiaries if core credit ratios weakened enough that adjusted FFO to debt consistently fell below 13% while still at the current level of business risk.

Upside scenario

Given our assessment of business risk and our base-case scenario for financial performance, we do not anticipate higher ratings during the outlook period. However, higher ratings would largely depend on PPL consistently achieving adjusted FFO to debt of more than 18% while maintaining the current level of business risk.

Our Base-Case Scenario

Assumptions

- In 2018, gross margins decline from the impact of tax reform, with margin growth in 2019 and beyond resuming as a result of various recovery mechanisms and rate cases.
- Capital expenditures of approximately \$1.3 billion in 2019 for generation upgrades and transmission investments.
- All debt maturities are refinanced.

Key Metrics

	2018E	2019E	2020E
Adjusted FFO to debt (%)	14-16	14.5-16.5	16.5-18.5
Adjusted FFO cash interest coverage (x)	5.3-5.9	5.3-5.9	5.7-6.3
Adjusted debt to EBITDA (x)	4.7-5.1	4.7-5.1	4.2-4.6

E--Estimate. FFO--Funds from operations.

Base-case projections

- Gross margin increases from modest sales growth and cost recovery through various rate mechanisms.
- Debt to EBITDA in the 4x-5x range, indicating greater use of debt leverage.
- Adjusted FFO to debt expected to be roughly 15% in 2019 with improvement over time as LKE benefits from incremental cost recovery.

Company Description

LKE is an intermediate holding company that owns two utilities providing electric and natural gas utility service to 1.3 million customers primarily in Kentucky.

Business Risk: Excellent

Our assessment of LKE's business risk profile incorporates the business strengths of its wholly owned subsidiaries Louisville Gas & Electric Co. (LG&E) and Kentucky Utilities Co. (KU). These utilities provide regulated, vertically integrated electric and natural gas distribution services primarily across Kentucky, with smaller service territories in Tennessee and Virginia. The geographic concentration in Kentucky is partly offset by the large customer base of about 1.3 million electric and natural gas customers. The company's customer base consists mostly of residential and commercial customers, mitigating the impact of fluctuations in demand and resulting in stable and predictable cash flows.

Moreover, the company benefits from numerous regulatory mechanisms, including forecast test years, environmental investment cost recovery, purchased power, fuel, and gas surcharges, and formulaic transmission rates. The utilities' low rates are derived from relatively safe and reliable coal-fired generation and regulatory lag is partly limited by the timely recovery of costs.

Peer comparison

LKE is in line with regulated vertically integrated electric and natural gas distribution utility peers like Integrys Holding Inc., NV Energy (NVE), and Eversource Energy Inc. In terms of scale, LKE is comparable to NVE, which has 1.2 million electric customers and 200,000 natural gas customers, Eversource Energy Inc., which has 1.6 million electric customers, and Integrys, which has 1.8 million natural gas customers and 500,000 electric customers. The regulatory environment for LKE is considered more supportive than that for NVE because of Nevada's heightened politicization of utility-related policies, including long-term energy generation planning. LKE's operations are in line with Integrys and Eversource Energy because all of them benefit from supportive cost recovery mechanisms and constructive regulatory environments.

Financial Risk: Significant

Under our base-case scenario, we anticipate that LKE's stand-alone adjusted FFO to debt will be in the 14%-16% range in 2019. Over the next few years we expect FFO to debt to improve to the 16%-18% range as the company benefits from recovery mechanisms like the environmental cost rider, as well as formulaic transmission rates and forward test years for rate cases. We expect adjusted debt to EBITDA to be in 4.5x-5x range, indicating debt leverage within the benchmark range of an aggressive financial risk profile.

We utilize our medial volatility table, which reflects more relaxed benchmarks than most corporate issuers. This reflects the company's steady cash flow and rate-regulated utility operations and effective regulatory risk management.

Liquidity: Adequate

We assess LKE's stand-alone liquidity as adequate because we believe its liquidity sources will likely cover uses by more than 1.1x over the next 12 months and meet cash outflows even if EBITDA declines 10%.

We believe LKE has sound banking relationships, the ability to absorb high-impact, low probability events without the need for refinancing, and a satisfactory standing in the credit markets.

Principal Liquidity Sources	Principal Liquidity Uses
<ul style="list-style-type: none">• Combined revolving credit facility availability of \$975 million.• Estimated cash FFO of about \$1 billion.	<ul style="list-style-type: none">• Capital spending of approximately \$1.3 billion.• Dividends of \$282 million.• Debt maturities of \$618 million.

Debt maturities

- 2019: \$430 million
- 2020: \$975 million
- 2021: \$250 million
- 2022: \$0

Covenant Analysis

Compliance expectations

As of Sept. 30, 2018, LKE was in compliance with the financial covenants in its credit facilities and had sufficient cushion. Under our base-case scenario, we expect LKE will remain in compliance with these covenants, especially given the stability of regulated utility operations. We expect that even if EBITDA declines 10% the company would not violate its covenants.

Requirements

- Total debt-to-capitalization ratio of 70% or less.
- The covenant thresholds remain unchanged through the credit facility's expiration.

Environmental, Social, And Governance

Environmental factors are material in our rating analysis, while social and governance factors are not.

LKE is the intermediate holding company of LG&E and KU, both of which have generating assets. Most of the total generation capacity—about 8,000 megawatts—is from coal and natural gas, which represents an environmental risk factor. However, by 2050, holding company PPL intends to reduce its carbon footprint by 70%. In Kentucky, the company is seeking a green energy tariff that would incentivize renewable energy. The company expects to replace much of its coal-based generation with a combination of natural gas and renewable generation.

Social factors are neutral to our ESG assessment and are consistent with what we see across the industry for other publicly traded utilities. By pursuing greater renewable generation, the company is meeting customer demand for greener energy. Governance factors are also neutral to our ESG assessment and the company's governance practices are consistent with what we see across the industry for other publicly traded utilities.

Group Influence

Under our group rating methodology, we consider LKE a core subsidiary of parent PPL Corp., reflecting our view the LKE is highly unlikely to be sold, is integral to the group's overall strategy, possesses a strong long-term commitment from senior management, and is closely linked to the parent's name and reputation. We assess the issuer credit rating on LKE as 'A-', in line with PPL's group credit profile of 'a-'.

Issue Ratings - Subordination Risk Analysis

Capital structure

LKE's capital structure consists of about \$5 billion of debt of which priority debt is about \$4 billion.

Analytical conclusions

The unsecured debt at LKE is rated one notch below the issuer credit rating because priority debt exceeds 50% of the company's consolidated debt, after which point LKE's debt could be considered structurally subordinated.

Ratings Score Snapshot

Issuer Credit Rating

A-/Stable/–

Business risk: Excellent

- **Country risk:** Very low

- **Industry risk:** Very low
- **Competitive position:** Excellent

Financial risk: Significant

- **Cash flow/Leverage:** Significant

Anchor: a-

Modifiers

- **Diversification/Portfolio effect:** Neutral (no impact)
- **Capital structure:** Neutral (no impact)
- **Financial policy:** Neutral (no impact)
- **Liquidity:** Adequate (no impact)
- **Management and governance:** Satisfactory (no impact)
- **Comparable rating analysis:** Neutral (no impact)

Stand-alone credit profile : a-

- **Group credit profile:** a-
- **Entity status within group:** Core (no impact)

Related Criteria

- Criteria - Corporates - General: Reflecting Subordination Risk In Corporate Issue Ratings, March 28, 2018
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- Criteria - Corporates - General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Criteria - Corporates - General: Corporate Methodology: Ratios And Adjustments, Nov. 19, 2013
- Criteria - Corporates - General: Corporate Methodology, Nov. 19, 2013
- Criteria - Corporates - Utilities: Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Group Rating Methodology, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- Criteria - Corporates - Utilities: Collateral Coverage And Issue Notching Rules For '1+' And '1' Recovery Ratings On Senior Bonds Secured By Utility Real Property, Feb. 14, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities And Insurers, Nov. 13, 2012
- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009
- Criteria - Insurance - General: Hybrid Capital Handbook: September 2008 Edition, Sept. 15, 2008

Business And Financial Risk Matrix

Business Risk Profile	Financial Risk Profile					
	Minimal	Modest	Intermediate	Significant	Aggressive	Highly leveraged
Excellent	aaa/aa+	aa	a+/a	a-	bbb	bbb-/bb+
Strong	aa/aa-	a+/a	a-/bbb+	bbb	bb+	bb
Satisfactory	a/a-	bbb+	bbb/bbb-	bbb-/bb+	bb	b+
Fair	bbb/bbb-	bbb-	bb+	bb	bb-	b
Weak	bb+	bb+	bb	bb-	b+	b/b-
Vulnerable	bb-	bb-	bb-/b+	b+	b	b-

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KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 39

Responding Witness: Daniel K. Arbough

- Q-1-39. Please state whether KU's regulated electric retail operations has any off-balance sheet debt such as purchased power agreements and operating leases. If the answer is "yes," provide the amount of each off-balance sheet debt item and estimate the related imputed interest and amortization expense associated with these off-balance sheet debt equivalents specific to KU's jurisdictional regulated retail electric operations.
- A-1-39. KU does have one purchased power agreement with OVEC and a few small operating leases. The details are included in the attachment to Question No. 40.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 40

Responding Witness: Daniel K. Arbough

Q-1-40. To the extent not already provided, please provide in electronic format with all formulas intact, the calculation of KU's credit metric calculations by Standard and Poor's and Moody's.

A-1-40. See attachment being provided in Excel format.

The attachment is being provided in a separate file in Excel format.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 41

Responding Witness: Daniel K. Arbough

- Q-1-41. Please provide a detailed explanation of KU's dividend payment and debt financing plans through the test period.
- A-1-41. KU expects to pay dividends quarterly equal to 65% of the prior quarter's net income. Additional amounts may be paid to bring the capital structure to the targeted 53% equity structure. If the dividend payment results in the equity structure going well below the targeted 53%, an equity contribution is requested from LG&E and KU Energy. The company plans to finance its capital expenditures and working capital needs via the commercial paper market until the point in time when the balance of commercial paper is projected to remain significant enough to issue a long-term first mortgage bond. KU anticipates issuing \$200 million of long-term first mortgage bonds in June 2021.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 42

Responding Witness: Daniel K. Arbough

Q-1-42. Please confirm that PPL Corporation or KU are not on credit watch, review for downgrade, or have anything other than a “stable” outlook by any of the major ratings agencies. If this cannot be confirmed, please provide all reports in support of your response.

A-1-42. Confirmed.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 43

Responding Witness: Daniel K. Arbough

- Q-1-43. Please identify the most recent year the average authorized ROE for all electric utilities was 10.0% or higher.
- A-1-43. The Company has no way to determine when the average authorized ROE for all electric utilities was 10.0% or higher. However, based on the RRA Regulatory Focus dated October 20, 2020, the last time the full year average authorized ROE was 10% or higher for all electric utilities involved in a rate case proceeding was 2013 and the last time a quarterly report showed an average authorized ROE of 10% or higher for all electric utilities involved in a rate case proceeding was first quarter 2015.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 44

Responding Witness: Daniel K. Arbough

- Q-1-44. Please identify the most recent year the average authorized ROE for vertically integrated electric utilities was 10.0% or higher.
- A-1-44. The Company has no way to determine when the average authorized ROE for all vertically integrated electric utilities was 10.0% or higher. However, based on the RRA Regulatory Focus dated October 20, 2020, the last time the full year average authorized ROE was 10% or higher for all vertically integrated electric utilities involved in a rate case proceeding was 2012.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 45

Responding Witness: N/A

Q-1-45. This request is intentionally blank.

A-1-45. N/A

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 46

Responding Witness: Adrien M. McKenzie

- Q-1-46. For all of the subsidiary companies listed on pages 2-3 of Mr. McKenzie's Exhibit No. 12, please identify the most recently authorized common equity ratio and the date that it was approved.
- A-1-46. Mr. McKenzie did not conduct a research study to identify the common equity ratios currently approved by regulators for each of the utility operating companies listed on pages 2 and 3 of Exhibit No. 12; nor was such a study necessary to support his conclusions and recommendations.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 47

Responding Witness: Daniel K. Arbough

Q-1-47. Please confirm that the average authorized ROE for general rate cases for electric utilities through September 2020 was 9.44%. If this cannot be confirmed, please provide a detailed explanation and source documents proving otherwise.

A-1-47. Confirmed based on the RRA Regulatory Focus dated October 20, 2020.

KENTUCKY UTILITIES COMPANY

**Response to First Request for Information of the
United States Department of Defense and All Other Federal Executive Agencies
Dated January 8, 2021**

Case No. 2020-00349

Question No. 48

Responding Witness: N/A

Q-1-48. This request is intentionally blank.

A-1-48. N/A