

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matters of:

ELECTRONIC APPLICATION OF KENTUCKY)
UTILITIES CO. FOR AN ADJUSTMENT OF ITS)
ELECTRIC RATES, A CERTIFICATE OF PUBLIC) CASE No.
CONVENIENCE AND NECESSITY TO DEPLOY) 2020-00349
ADVANCED METERING INFRASTRUCTURE,)
APPROVAL OF CERTAIN REGULATORY AND)
ACCOUNTING TREATMENTS, AND ESTABLISH-)
MENT OF A ONE-YEAR SURCREDIT)

-and-

ELECTRONIC APPLICATION OF LOUISVILLE)
GAS & ELECTRIC CO. FOR AN ADJUSTMENT)
OF ITS ELECTRIC AND GAS RATES, A CERTIFI-)
CATE OF PUBLIC CONVENIENCE AND NECESSITY) CASE No.
TO DEPLOY ADVANCED METERING INFRA-) 2020-00350
STRUCTURE, APPROVAL OF CERTAIN)
REGULATORY AND ACCOUNTING TREATMENTS,)
AND ESTABLISHMENT OF A ONE-YEAR SURCREDIT)

**JOINT RESPONSES OF THE ATTORNEY GENERAL AND KIUC TO DATA
REQUESTS OF LOUISVILLE GAS & ELECTRIC CO. AND KENTUCKY
UTILITIES CO.**

The intervenors, the Attorney General of the Commonwealth of Kentucky, by and through his Office of Rate Intervention (“AG”), and the Kentucky Industrial Utility Customers, Inc. (“KIUC”) submit the following responses to data requests of Louisville Gas & Electric Co. And Kentucky Utilities Co. in the above-styled matters.

Respectfully submitted,

DANIEL CAMERON
ATTORNEY GENERAL



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—and—

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Certificate of Service and Filing

Pursuant to the Commission's Orders in Case No. 2020-00085, and in accord with all other applicable law, Counsel certifies that an electronic copy of the forgoing was served and filed by e-mail to the parties of record. Further, counsel for OAG will submit the paper originals of the foregoing to the Commission within 30 days after the Governor lifts the current state of emergency. Counsel further certifies that the responses set forth herein are true and accurate to the best of their knowledge, information, and belief formed after a reasonable inquiry.

This 1st day of April, 2021



Assistant Attorney General

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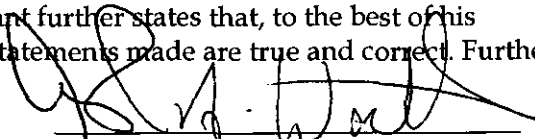
-and-

ELECTRONIC APPLICATION OF LOUISVILLE)
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AFFIDAVIT OF GLENN WATKINS

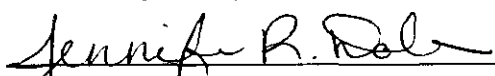
Commonwealth of Virginia)
)
)

Glenn Watkins, being first duly sworn, states the following:
The Data Request Responses are those of the Affiant in the above-styled cases. Affiant states that he would give the answers set forth in the Data Request Responses if asked the questions propounded therein. Affiant further states that, to the best of his knowledge, information and belief his statements made are true and correct. Further affiant sayeth not.



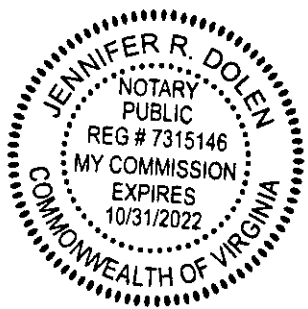
Glenn Watkins

SUBSCRIBED AND SWORN to before me this 18th day of March, 2021



NOTARY PUBLIC

My Commission Expires: 10/31/2022



COMMONWEALTH OF KENTUCKY
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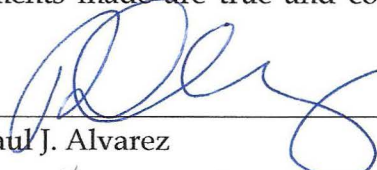
ELECTRONIC APPLICATION OF LOUISVILLE)
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REGULATORY AND ACCOUNTING TREATMENTS,)
AND ESTABLISHMENT OF A ONE-YEAR SURCREDIT)

AFFIDAVIT OF PAUL J. ALVAREZ

State of Colorado)
)
)

Paul J. Alvarez, being first duly sworn, states the following:

The Data Request Responses are those of the Affiant in the above-styled cases. Affiant states that he would give the answers set forth in the Data Request Responses if asked the questions propounded therein. Affiant further states that, to the best of his knowledge, information and belief his statements made are true and correct. Further affiant sayeth not.



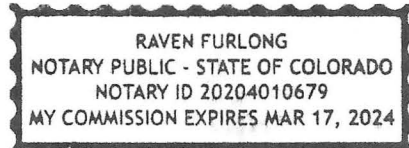
Paul J. Alvarez

SUBSCRIBED AND SWORN to before me this 18th day of March, 2021



NOTARY PUBLIC

My Commission Expires: March 17th, 2024



AFFIDAVIT


STATE OF GEORGIA)

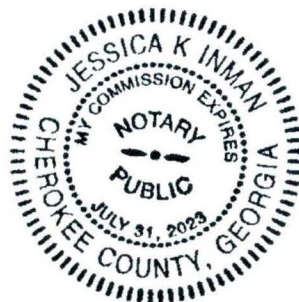
COUNTY OF FULTON)

STEPHEN J. BARON, being duly sworn, deposes and states: that the attached is his sworn testimony and that the statements contained are true and correct to the best of his knowledge, information and belief.


Stephen J. Baron

Sworn to and subscribed before me on this
1st day of April 2021.


Notary Public




AFFIDAVIT

STATE OF GEORGIA)

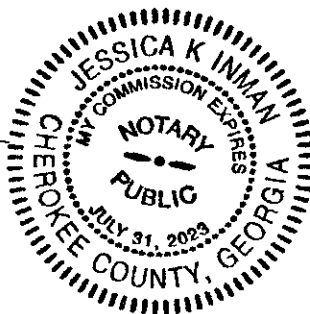
COUNTY OF FULTON)

RICHARD A. BAUDINO, being duly sworn, deposes and states: that the attached is his sworn testimony and that the statements contained are true and correct to the best of his knowledge, information and belief.


Richard A. Baudino

Sworn to and subscribed before me on this
1st day of April 2021.


Notary Public

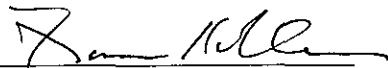


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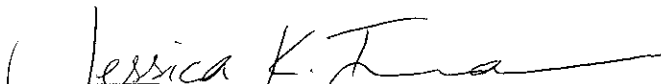
STATE OF GEORGIA)

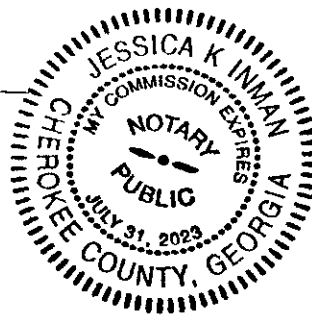
COUNTY OF FULTON)

LANE KOLLEN, being duly sworn, deposes and states: that the attached is his sworn testimony and that the statements contained are true and correct to the best of his knowledge, information and belief.


Lane Kollen

Sworn to and subscribed before me on this
1st day of April 2021.


Notary Public



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WITNESS / RESPONDENT RESPONSIBLE:
PAUL ALVAREZ

QUESTION No. 1
Page 1 of 1

Provide copies of all electronic files in native format with formulas intact used in your analysis. This includes copies of all workpapers supporting your testimony, analyses, and conclusions.

RESPONSE:

Mr. Alvarez prepared no workpapers in support of his testimony, analyses, or conclusions. Any calculations Mr. Alvarez completed are simple, and detailed in testimony either parenthetically and/or through the use of footnotes.

WITNESS / RESPONDENT RESPONSIBLE:
PAUL ALVAREZ

QUESTION No. 2
Page 1 of 1

See Alvarez Testimony, page 34. Please explain the phrases “bad phase” and “kWh billed on bad phases.”

RESPONSE:

A poly-phase meter measures consumption on all three phases for three-phase customers. By “bad phase”, Mr. Alvarez is referring to a meter malfunction which results in the failure to measure consumption on one of the phases. The bill for a customer with a meter which fails in this manner is only being billed for two-thirds of actual consumption. This can be difficult to detect, but offers an opportunity to use smart meters to reduce unbilled revenues. (Mr. Alvarez understands some utilities use the phase angle measurement features of smart poly-phase meters to detect this situation).

By “kWh billed on a bad phase”, Mr. Alvarez is referring to billings on a phase after a meter malfunctioning in the manner described above is replaced with a fully-functioning meter. In the context of performance reporting, reporting the billings on a phase after a malfunctioning meter is replaced is intended to quantify part of the revenue-assurance benefit of smart meters.

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WITNESS / RESPONDENT RESPONSIBLE:
PAUL ALVAREZ

QUESTION No. 3
Page 1 of 1

See Alvarez testimony at page 13, lines 2-4. Please confirm that \$5.6 million is the sum of VVO costs for the period from 2021 to 2025.

RESPONSE:

Confirmed. Per Companies' Exhibit JKW-1, page 28, chart titled "Capital funding allocated in the 2021 Business Plan" (for VVO), the amounts listed are as follows:

Year	Amount (millions of \$)
2021	\$0.6
2022	1.5
2023	1.4
2024	0.9
2025	1.2
TOTAL	\$5.6

WITNESS / RESPONDENT RESPONSIBLE:
PAUL ALVAREZ

QUESTION No. 4
Page 1 of 1

See Alvarez testimony at page 13, lines 10-11. Please provide the basis for the lower end of Mr. Alvarez's CVR energy savings range (0%). Under what circumstances would the Companies implement a CVR program and achieve 0% energy savings?

RESPONSE:

As described in Mr. Alvarez's testimony, pages 12-13, there are a variety of reasons why a CVR program might deliver no energy savings, from the shifting of resources to other priorities to simple human error. Mr. Alvarez notes the Companies are under no requirement to utilize VVO capabilities for the purposes of conservation, and that the Companies propose no CVR performance reporting. Absent CVR performance reporting, Mr. Alvarez notes that stakeholders would not even be aware of any potential failure of the Companies to employ VVO capabilities to secure conservation benefits. Mr. Alvarez also notes that VVO capabilities could conceivably be used to increase voltage unnecessarily. As a result of all of these circumstances, Mr. Alvarez concludes that CVR energy savings could conceivably be zero.

WITNESS / RESPONDENT RESPONSIBLE:
PAUL ALVAREZ

QUESTION No. 5
Page 1 of 1

See Alvarez testimony at page 15, lines 2-5. Please confirm that the 1.4% energy reduction identified by the Companies' consultant is an average reduction for all program participants and includes participants who, for example, never accessed their interval data.

RESPONSE:

Not confirmed. According to the Companies' consultant, the 1.4% energy reduction was identified among the population of customers who specifically sought out a smart meter and associated interval data. Mr. Alvarez agrees that among those customers who specifically sought out a smart meter, some number likely never accessed their interval data. A follow-on from this observation is that the 1.4% energy reduction incorporates the results of customers who never accessed their interval data. However, Mr. Alvarez wishes to make perfectly clear that this does not invalidate his claim that the application of the 1.4% energy reduction to the overall KU/LG&E customer population is inappropriate, leading to exaggerated benefit projections.

The fact remains that the customers with smart meters in the study conducted by the Companies' consultant are not representative of the overall customer population. As just one example of what this implies, the number of customers in the smart meter program who failed to access their interval data is undoubtedly smaller than the number of customers in the Companies' overall customer population who will fail to access their interval data in a full smart meter roll-out. Because the customers with smart meters in the study selected themselves, they are significantly more interested in their energy use than other customers, and are significantly more likely to access their interval data than other customers. As a result, these customers do not represent the Companies' overall customer population. Mr. Alvarez therefore stands by his claim that neither the 1.4% energy reduction, nor any benefit projection based on this reduction, should be used to estimate overall conservation from an ePortal populated by interval data from AMI.

WITNESS / RESPONDENT RESPONSIBLE:
PAUL ALVAREZ

QUESTION No. 6
Page 1 of 3

See Alvarez testimony regarding peak-time rebate programs at pages 20-23.

- a. To realize savings from a peak-time rebate program, please confirm that the Companies would retire generation capacity and simultaneously implement the peak-time rebate program with the assumption that a portion of customers would voluntarily curtail their usage during critical peak events.
- b. What constitutes a critical peak event? Do they occur every year? What happens in a year with no critical peak events?
- c. How would the Companies forecast customers' response to the peak-time rebate program? How would the Companies' determine whether their avoided generation costs (or any price) would provide a sufficient incentive for customers to curtail their usage during extreme hot and cold events to the point that reliability is maintained?
- d. What is the estimated cost of the analytical systems and personnel required for creating and operating a peak-time rebate program? How many years of interval data is needed to estimate summer and winter baselines and peak load reductions for a given customer?
- e. Are there consequences to system reliability if customers don't exercise the option to conserve energy during critical peak events?
- f. What impact will implementing a peak-time rebate program have on the rates for customers who don't want to curtail their usage during extreme hot and cold periods? Are the costs of the rebates collected before the potential event or after the event? Are the costs of the program also collected from the customers who participate?
- g. Given the size of the Companies' load and its generation fleet, what is a reasonable amount of reduced capacity that can be expected from a peaktime rebate program and how long will it take to reach such a level? Please provide all reports, analysis, and workpapers that support your opinion.

RESPONSE:

- a. Not confirmed. Ideally, a utility implements universal PTR first. Then, through off-system sales, avoided capacity purchases, or deferred investments in generation, transmission, and distribution, revenue requirements fall relative to a utility which has not implemented universal PTR.
- b. The number of critical peak events a utility can call annually are typically established during program design. For example, critical peak events might be limited to 8 per summer, or 4 per winter, or 12 per year. (Such details could conceivably be different for KU than for LG&E.) In Mr. Alvarez's experience, during peak months (mid-May to Mid-September, and/or

QUESTION No. 6

Page 2 of 3

December to February), the employees responsible for calling the peak events would meet daily in the afternoon to determine whether or not a peak event should be called the next day. These employees – typically including one each from energy market operations (trading), transmission system operations, and the PTR program manager – make a decision regarding whether or not an event should be called. Inputs into these decisions typically include:

- Projected peak demand the next day;
- Projected system capacity the next day (including reserves);
- Weather forecasts for the next few days (more extreme temperature-humidity indexes anticipated might call for “holding” an event in favor of an upcoming day, see next);
- Customer fatigue (for example, a utility might establish a policy not to call events three days in a row);
- Count of events remaining (for example, if it’s mid July, and only 2 events have been called of 8 available, event calls are made more readily; if it’s late June and 5 events have already been called of 8 available, event calls are made less readily).

Mr. Alvarez has never been involved in an event-day program in which no events were called in a year, but recommends that utilities target calling the number of events equal to at least 80% of the events permitted (in a season or year). In this manner, customers are made aware of a routine, beneficial usage habits are maintained, and a sense of complacency is avoided.

- c. In Mr. Alvarez’s experience, a utility rapidly gains experience with the amount of capacity it can secure by calling an event. Each utility’s customer population, promotional efforts, and weather differ, meaning that experience over time is the best indicator of event impact. Further, while universal PTR events can be called for reliability purposes as experience is gained, Mr. Alvarez recommends events be used initially for economic reasons. Mr. Alvarez does not recommend reducing system capacity before experience with events is built. In Maryland, the utilities have found they can reduce the size of the minimum required capacity procured from the PJM market by providing PJM with a historical record of capacity requirements which has proven appropriate with universal PTR in place.

Regarding pricing, the price at which the rebates are set is indeed an important part of initial and ongoing PTR program development (see response to subpart f). In Maryland, rebates paid plus program costs are reconciled to avoided costs on an annual basis, with any overpayment costs socialized to all customers, and any underpayment benefits credited to all customers.

- d. See Mr. Alvarez’s response to Staff DR AG-1-016 regarding up-front and ongoing program costs. Regarding customer-specific baselines, Mr. Alvarez does not have direct experience, but believes that baselines are established by each individual customer’s usage over the most recent few days (perhaps 5) which had weather similar to an event day (either hot or cold) during which an event was not called. The establishment of baselines, and the determination

QUESTION No. 6

Page 3 of 3

as to the amount of documented usage change which qualifies a customer for a rebate, are among the most important aspects of universal PTR program design. Mr. Alvarez suggests experienced rate design economists should be retained for these aspects of universal PTR program design, and that associated algorithms be refined over time as experience and data are gained.

- e. As indicated in the response to subpart (c), above, Mr. Alvarez does not recommend using universal PTR events as a replacement for reserve margins. Instead, Mr. Alvarez recommends using documented results from universal PTR programs over time as a guide to the amount of overall capacity a utility must have available, as utilities in Maryland have done.
- f. As indicated in the response to subpart c, above, rebate amounts should be established such that rebates paid, plus program costs, are approximately equal to avoided cost benefits. Over time, the difference between avoided costs benefits and program costs (rebates + administration) should amount to zero in a “revenue neutral” program design. An accurately-established rebate amount results in no impact to non-participating customers.

However, though not necessarily recommended by OAG, rebate amounts could conceivably be set to secure specific objectives. For example, if overpayments are a particular Commission concern, or if benefits to non-participants are of particular Commission interest, the Commission could elect to set rebate levels slightly lower than anticipated avoided costs. In such an instance, the risk of overpayment would fall, and the likelihood that non-participants would secure a benefit would increase, without jeopardizing the success or impact of the program.

- g. In a study conducted on peak-time rebate in Maryland,¹ researchers found that customers for whom a rebate was available reduced collective demand by 17.8%, and that customers with both an available rebate and enhancing technologies (a thermostat remotely-controllable by a smart phone would be an example) reduced collective demand even further. The researchers also found that reductions persisted (and even increased slightly) in PTR year two.² Another interesting finding was that demand reductions were the same magnitude for PTR (a ‘reward’ program) as they were for punitive pricing programs, for example Critical Peak Price.³

¹ See attachment to the AG’s Response to PSC Staff’s DR to AG Witness Alvarez, item no. 16: “Dynamic Pricing of Electricity in the mid-Atlantic Region: Econometric Results From the Baltimore Gas and Electric Company Experiment,” © Journal of Regulatory Economics, 22 June 2011 40:82–109, Ahmad Faruqui, Sanem Sergici. The Attorney General has obtained permission from the Journal of Regulatory Economics to include this article as an attachment to that response.

² Id. at pp. 103-104.

³ Id. at 98.

In Re: Applications of Kentucky Utilities Co. and Louisville Gas & Elec. Co. for Rate Changes, etc.

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WITNESS / RESPONDENT RESPONSIBLE:

GLENN WATKINS

QUESTION No. 7

Page 1 of 1

Provide copies of all electronic files in native format with formulas intact used in your analysis.
This includes copies of all workpapers supporting your testimony, analyses, and conclusions.

RESPONSE:

All of Mr. Watkins' electronic files were filed along with his direct testimony and are available on
the Commission's website.

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WITNESS / RESPONDENT RESPONSIBLE:
GLENN WATKINS

QUESTION No. 8
Page 1 of 1

Please provide a complete copy of the document excerpted in Schedule GAW-24.

RESPONSE:

The requested manual is available for download on the NARUC website at the following link:

<https://pubs.naruc.org/pub.cfm?id=536F0210-2354-D714-51CF-037E9E00A724>

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WITNESS / RESPONDENT RESPONSIBLE:
GLENN WATKINS

QUESTION No. 9
Page 1 of 1

See Watkins testimony at page 14, lines 16-17 and footnote 4. Please confirm that the capacity values for Trimble County Unit 2 are nameplate values.

RESPONSE:

Confirm.

In Re: Applications of Kentucky Utilities Co. and Louisville Gas & Elec. Co. for Rate Changes, etc.
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WITNESS / RESPONDENT RESPONSIBLE:
GLENN WATKINS

QUESTION No. 10
Page 1 of 1

See Watkins testimony at page 15, Table 1. Please confirm that the capacity values in Table 1 are nameplate values.

RESPONSE:

Confirm.

In Re: Applications of Kentucky Utilities Co. and Louisville Gas & Elec. Co. for Rate Changes, etc.
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WITNESS / RESPONDENT RESPONSIBLE:
GLENN WATKINS

QUESTION No. 11
Page 1 of 1

See Watkins testimony at page 15, lines 21-24 and footnote 9. Please confirm that “Sales for Resale” in the response to AG-KIUC 1-135 pertains to sales to non-firm wholesale customers only and not firm wholesale customers.

RESPONSE:

Confirm.

WITNESS / RESPONDENT RESPONSIBLE:
GLENN WATKINS

QUESTION No. 12
Page 1 of 1

See Watkins testimony at page 16, lines 1-2. Please confirm that Mr. Watkins is aware of the tariff requirements regarding unit commitment that must be met before physically curtailing CSR customers. Also, please confirm that – by subtracting CSR load from forecasted firm peak load – Mr. Watkins is assuming these tariff requirements are always met under normal peak load conditions.

RESPONSE:

Deny to the first question. Mr. Watkins is not aware of any tariff requirements regarding “unit commitment” that must be met before physically curtailing CSR customers. In fact, the tariff for CSR-1 and CSR-2 state as follows:

Company may request or cancel a curtailment at any time during any hour of the year.

Deny to the second question. Mr. Watkins’ testimony on page 16, lines 1-2 relates to a single hour; i.e., the forecasted annual peak load hour. In this regard, the forecasted annual system peak load is best suited for curtailment and as a basis for evaluating firm load requirements.

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WITNESS / RESPONDENT RESPONSIBLE:
GLENN WATKINS

QUESTION No. 13
Page 1 of 1

See Watkins testimony at page 16, lines 18-21 and the Companies' response to AG-KIUC 1-123. Please confirm that 8,881 MW is the sum of nameplate ratings for the Combined Companies' generating units.

RESPONSE:

Confirm.

In Re: Applications of Kentucky Utilities Co. and Louisville Gas & Elec. Co. for Rate Changes, etc.
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WITNESS / RESPONDENT RESPONSIBLE:
GLENN WATKINS

QUESTION No. 14
Page 1 of 1

See Watkins testimony at page 16 beginning at line 28. How are the reserve margins for neighboring regions calculated? Specifically, are the reserve margins in neighboring regions computed based on nameplate generator ratings?

RESPONSE:

Question 1: Target reserve margins are based on nameplate generator ratings with consideration of loss of load expectations. Question 2: Yes.

For MISO, please see:

[MTEP18 Book 2 Resource Adequacy264875.pdf \(misoenergy.org\)](#)

For PJM, please see:

<https://www.pjm.com/-/media/documents/manuals/m20.ashx>

WITNESS / RESPONDENT RESPONSIBLE:
GLENN WATKINS

QUESTION No. 15
Page 1 of 1

See Watkins testimony at page 24, lines 8-14 and Table 3.

- a. Please confirm that the capacity values in hours 1300 through 1600 are model outputs and not input assumptions.
- b. Please confirm that Mr. Watkins is aware that due to NOx emission limits at the Mill Creek station, Mill Creek Unit 1 and Mill Creek Unit 2 cannot simultaneously operate during the period reflected in Table 3 except to ensure system reliability.
- c. Please confirm that peak demand is based on normal peak weather conditions and can be higher or lower depending on weather conditions and other factors impacting customer demand.
- d. Please confirm that LOLP calculations are based on a complete range of generator unit availability scenarios and not just one scenario.

RESPONSE:

- a. Deny. The capacity values in Table 3 are simply inputs provided in response to AG-KIUC 1-126.
- b. Mr. Watkins is not aware of this concern.
- c. Confirm. However, the forecasted hourly loads are those projected by the Companies and are utilized in conjunction with the output of individual generating units that serve as the basis for Mr. Seelye's LOLP calculations.
- d. It is Mr. Watkins' understanding that the black box LOLP simulation model utilized assumed planned outage occurrences, assumed forced outage rates, and forecasted system loads. The Companies have previously been able to provide the details of its LOLP calculations.

In Re: Applications of Kentucky Utilities Co. and Louisville Gas & Elec. Co. for Rate Changes, etc.
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WITNESS / RESPONDENT RESPONSIBLE:
STEPHEN J. BARON

QUESTION No. 16
Page 1 of 1

Provide copies of all electronic files in native format with formulas intact used in your analysis.
This includes copies of all workpapers supporting your testimony, analyses, and conclusions.

RESPONSE:

See the following attachments:

-  T-1, T-3 2020_AG-KIUC_DR1_LGE_Attach_to_Q188_-_att_1_LGE_6CP_COSS_with_Unit_Costs
 -  T-2, T-4 2020_AG-KIUC_DR1_KU_Attach_to_Q188_-_Att_1_KU_6CP_COSS_with_Unit_Costs
 -  T-5, T-6 TODP, RTS Rate Design-sjb
 -  T-7 2020_AG-KIUC_DR1_LGE_Attach_to_Q188_-_att_3_LGE_LOLP_COSS_with_Unit_Costs-sjb
 -  T-8 2020_AG-KIUC_DR1_KU_Attach_to_Q188_-_Att_3_KU_LOLP_COSS_with_Unit_Costs-sjb
 -  TODP, RTS Rate Design-sjb with Rev Energy Charges
 -  TODP, RTS Rate Design-sjb with Rev Energy Charges
-
-  Fig 1, 2 - 2020_AG-KIUC_DR1_KU_LGE_Attach_to_Q122a_-_LOLP_July2021toJune2022-sjb

Proposed TODP Increases

<u>LG&E</u>	<u>Current</u>	<u>Proposed</u>	<u>% Change</u>
Energy Charge	\$0.02744	\$0.02744	0.0%
Demand kVA Base	\$ 2.34	\$ 3.33	42.3%
Demand kVA Intermediate	\$ 7.15	\$ 8.34	16.6%
Demand kVA Peak	\$ 9.32	\$ 10.85	16.4%
 <u>KU</u>			
Energy Charge	0.02573	0.02573	0.0%
Demand kVA Base	\$ 2.03	\$ 2.79	37.4%
Demand kVA Intermediate	\$ 6.84	\$ 7.86	14.9%
Demand kVA Peak	\$ 8.52	\$ 9.80	15.0%

Proposed RTS Increases

<u>LG&E</u>	<u>Current</u>	<u>Proposed</u>	<u>% Change</u>
Energy Charge	\$0.02705	\$0.02705	0.0%
Demand kVA Base	\$ 0.90	\$ 1.93	114.4%
Demand kVA Intermediate	\$ 7.11	\$ 8.30	16.7%
Demand kVA Peak	\$ 9.27	\$ 10.82	16.7%
 <u>KU</u>			
Energy Charge	\$0.02513	\$0.02513	0.0%
Demand kVA Base	\$1.23000	\$2.16000	75.6%
Demand kVA Intermediate	\$6.74000	\$7.65000	13.5%
Demand kVA Peak	\$8.39000	\$9.53000	13.6%

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WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 17
Page 1 of 1

Provide copies of all electronic files in native format with formulas intact used in your analysis.
This includes copies of all workpapers supporting your testimony, analyses, and conclusions.

RESPONSE:

Mr. Baudino has already provided his electronic work papers to counsel for the Companies.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 18
Page 1 of 1

On page 3 of his testimony Mr. Baudino indicates that his recommendation “is primarily based on the results of a Discounted Cash Flow (“DCF”) model analysis.” Given that Mr. Baudino indicates on page 4 that “I did not directly incorporate the results of the CAPM in my recommendation,” please identify and explain all quantitative results and other factors that caused Mr. Baudino’s recommendation to differ from his DCF results and how each consideration influenced his recommendation.

RESPONSE:

As Mr. Baudino stated in his Direct Testimony, his ROE recommendation of 9.0% was based on the range of his DCF results. Please refer to Mr. Baudino's Direct Testimony, page 37, line 2 through page 40, line 13 for a complete discussion of the factors considered by Mr. Baudino in forming his recommended ROE to the Commission.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 19
Page 1 of 1

At pages 4-5, Mr. Baudino cites the “difficult economic environment facing Kentucky ratepayers today.” Does Mr. Baudino believe that this environment has an impact on the cost of equity demanded by investors in the capital markets? If so, please explain the link between Mr. Baudino’s statement and the cost of equity and provide copies of all supporting documentation.

RESPONSE:

At pages 4 through 5, Mr. Baudino was referring to the economic impact of LGE/KU's excessive requested return on equity ("ROE") and the additional revenue requirement needed to support it. As Mr. Baudino stated on page 5, ratepayers should support a fair ROE to the Companies. Mr. Baudino's analysis in this case is from the investor's perspective and the ROE required by investors. Mr. Baudino's analysis and review in this proceeding did not suggest that the difficult economic environment facing Kentucky ratepayers significantly affected the investor required ROE. LGE and KU have maintained their A-/A3 credit ratings from Standard and Poor's and Moody's and their credit outlooks are stable.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 20
Page 1 of 2

At page 21, Mr. Baudino concludes that the CAPM approach is “less reliable” than the DCF method.

- a. On what basis did Mr. Baudino assess the relative reliability of the DCF and CAPM methods? Please provide a complete explanation and include copies of all supporting documents.
- b. Please provide copies of any analyses or other research studies that Mr. Baudino undertook to support this conclusion.
- c. Please provide copies of any published studies in the financial research that Mr. Baudino relied on as the basis for his conclusion that the CAPM approach is “less reliable” than the DCF method.
- d. Does Mr. Baudino believe that the assumptions underlying his DCF method (e.g., a constant growth rate for dividends per share, earnings per share, book value per share; a stable dividend payout ratio; the discount rate exceeds the growth rate; a constant growth rate for book value and price; a constant earned rate of return on book value; no sales of stock at a price above or below book value; a constant price-earnings ratio; a constant discount rate [i.e., no changes in risk or interest rate levels and a flat yield curve]; and all of the above extend to infinity) reliably reflect circumstances in the capital markets and conform to investors actual expectations? If the answer is anything other than an unqualified “no,” please provide a complete explanation.
- e. Does Mr. Baudino believe that the earnings growth forecasts he employed to apply the DCF model reliably capture investors growth expectations? If so, how did he verify this? Please provide copies of all studies or supporting documentation.

RESPONSE:

- a. Mr. Baudino explained his position with respect to the relative reliability of the DCF and CAPM methods in his Direct Testimony. Refer to the section on the CAPM in Mr. Baudino's Direct Testimony beginning on page 29 for further explanation regarding the reliability and estimation problems with the CAPM.
- b. See the response to part (a) of this question.
- c. Mr. Baudino did not rely on published studies that compared the reliability of the DCF model and the CAPM to reach his conclusions regarding the greater reliability of the DCF model. His position is based on extensive experience in the area of cost of capital for regulated utilities.
- d. Like all models used to estimate the cost of equity, the constant growth DCF model relies on certain assumptions, which were enumerated in this part of the question. In the real world, not all of these assumptions are always met. However, it is Mr. Baudino's position

QUESTION No. 20
Page 2 of 2

that a properly specified DCF model using market data reasonably reflects circumstances in the capital markets and reasonably estimates investor expectations and the required ROE.

- e. It is reasonable to assume that published earnings growth forecasts influence investor expectations and, thus, are representative of investor expected earnings growth. Mr. Baudino did not undertake any studies to attempt to verify this with the proxy group he employed in his Direct Testimony. For a detailed discussion of the use of analysts' forecasts and historical growth rates in the DCF model, refer to book *New Regulatory Finance* by Dr. Roger Morin, pp. 297 - 303.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 21
Page 1 of 1

Is Mr. Baudino aware of any “shortcomings” associated with the constant growth form of the DCF model he relied on to establish his ROE recommendation in this case? If so, please identify each shortcoming.

RESPONSE:

Please refer to Mr. Baudino's answer to Question No. 20, part d, for a general response to this question. The DCF model, like all models, rests on a number of assumptions that are not always met in actual practice in financial markets. This is the case with the CAPM and risk premium models as well.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 22
Page 1 of 1

At page 39 of his testimony, Mr. Baudino states that the risk premium approach is “imprecise.”

- a. Please define the term “imprecise,” as used by Mr. Baudino in this context.
- b. Is the DCF Model also “imprecise?” If the answer is “no,” please provide a complete explanation and copies of all evidence Mr. Baudino relies on for this conclusion.

RESPONSE:

a. and b. In this context Mr. Baudino meant that the risk premium model is imprecise relative to the DCF model in estimating investor required returns. The DCF model is also imprecise in the sense that one cannot measure the investor required return precisely in the manner that one can calculate the yield on a utility bond. The investor required return must be estimated using financial market data, which by its nature involves some imprecision.

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WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 23
Page 1 of 1

At page 36 of his testimony Mr. Baudino cites a “[p]rior history of lower betas.” Please specify the specific historical period that Mr. Baudino is referring to in this statement.

RESPONSE:

Mr. Baudino was referring to betas prior to the pandemic, as stated on lines 1 and 2 of page 36.

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WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 24
Page 1 of 1

Has Mr. Baudino ever advised a regulatory commission not to place significant reliance on current beta values because they were lower than those experienced in a prior historical period? If so, please provide a complete copy of this testimony.

RESPONSE:

Yes. Please refer to the attached testimonies.

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-2, SUB 1219
DOCKET NO. E-7, SUB 1214

DOCKET NO. E-2, SUB 1219)	
)	
In the Matter of)	SUPPLEMENTAL
)	DIRECT TESTIMONY OF
)	
Application of Duke Energy Progress, LLC)	RICHARD A. BAUDINO
For Adjustment of Rates and Charges Applicable)	ON BEHALF OF
to Electric Service in North Carolina)	ATTORNEY GENERAL'S
)	OFFICE
DOCKET NO. E-7, SUB 1214)	
)	
In the Matter of)	
)	
Application of Duke Energy Carolinas, LLC,)	
For Adjustment of Rates and Charges)	
Applicable to Electric Service in North Carolina)	

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I. QUALIFICATIONS AND SUMMARY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Richard A. Baudino. My business address is J. Kennedy and Associates, Inc. (“Kennedy and Associates”), 570 Colonial Park Drive, Suite 305, Roswell, Georgia 30075.

Q. WHAT IS YOUR OCCUPATION AND BY WHOM ARE YOU EMPLOYED?

A. I am a consultant with Kennedy and Associates.

Q. DID YOU PREVIOUSLY FILE DIRECT TESTIMONY IN THESE DOCKETS?

A. Yes, I filed Direct Testimony in these dockets on behalf of the North Carolina Attorney General’s Office (“AGO”).

Q. PLEASE SUMMARIZE YOUR SUPPLEMENTAL DIRECT TESTIMONY IN THIS PROCEEDING.

A. My Supplemental Direct Testimony will cover the following areas:

1. I will provide an update of the return on equity (“ROE”) analyses for Duke Energy Carolinas (“DEC”) and Duke Energy Progress (“DEP”)¹ that were contained in my Direct Testimonies in Docket Nos. E-2, Sub 1219 and E-7, Sub 1214.
2. I will provide an updated analysis of economic conditions in North Carolina.

¹ I will refer to both DEC and DEP as "the Companies" later in my Supplemental Direct Testimony.

1 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND**
2 **RECOMMENDATIONS.**

3 **A.** Based on my updated ROE analyses, I continue to recommend a 9.0% ROE for
4 DEC and DEP. Consistent with my Direct Testimonies, I continue to
5 recommend that the Commission adopt a capital structure for both Companies
6 that contains a 51.5% common equity ratio. In addition, in light of the shocks
7 that have been delivered to the national and the North Carolina economies and
8 the attendant skyrocketing unemployment of North Carolina's work force due
9 to the COVID-19 pandemic, it is more important than ever that the North
10 Carolina Utilities Commission (“NCUC” or “Commission”) reject the
11 Companies' requested 10.30% ROE. My 9.0% ROE recommendation is
12 consistent with current investor required returns for low-risk regulated electric
13 companies like DEC and DEP and supports just and reasonable rates for the
14 Companies' North Carolina customers.

15 **II. UPDATE OF THE DCF AND CAPM ANALYSES**

16 **Q. PLEASE SUMMARIZE THE IMPACTS ON THE FINANCIAL**
17 **MARKETS DURING MARCH THROUGH JUNE OF THIS YEAR**
18 **FROM THE COVID-19 PANDEMIC.**

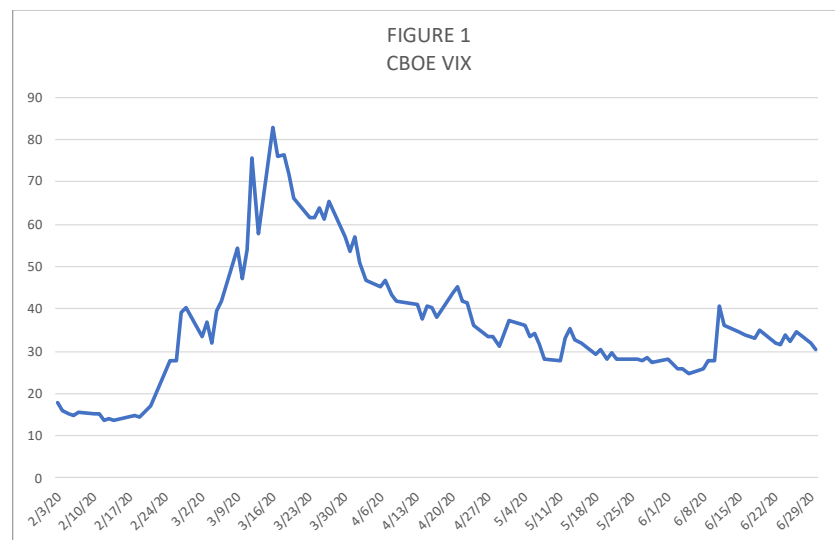
19 **A.** This section of my Supplemental Direct Testimony provides the Commission
20 with an update of the interest rate and bond yield data since the beginning of
21 March 2020, when concerns about the Covid-19 pandemic began to roil
22 financial markets with extreme volatility.

1 As I mentioned in my Direct Testimony for DEP filed April 13, the yield
2 on the 30-Year Treasury bond declined from 1.97% in February 2020 to 0.99%
3 on March 9, increased to 1.63% on March 17, and ended March at 1.46%. The
4 April ending yield on the 30-Year Treasury bond fell even further to 1.27%. As
5 of June 30, 2020 the yield was 1.41%.

6 Alternatively, the yield on the average public utility bond increased
7 dramatically in March, rising from 3.14% in February to 4.24% on March 18,
8 according to Moody's Credit Trends. At the end of March, the average public
9 utility bond yield fell to 3.59% according to the Mergent Bond Record. As of
10 June 30, 2020 Moody's Credit Trends reported that the yield on the average
11 public utility bond was 3.05%, even lower than the March 2020 yield. The
12 3.05% yield is now significantly lower than the pre-pandemic January 2020
13 average utility bond yield of 3.34%.

14 In March, the stock market underwent a steep, sharp decline of
15 approximately 19% due to the COVID-19 pandemic. Utilities also declined in
16 March, with the Dow Jones utility average declining from 886.52 on March 2
17 to a March low of 695, a decline of about 21.6% with substantial volatility, or
18 changes to the index's value, within the month. In April, however, the stock
19 market and the Dow Jones utility index began to recover. After falling to a low
20 in March of 695, the Dow Jones utility index recovered to finish April at 761.83,
21 an increase of 9.6% from the March low. As of June 30, 2020, the Dow Jones
22 Utility Index stood at 767.50, not much different from the end of April.

1 A widely used measure of market volatility is the Chicago Board
2 Options Exchange (“CBOE”) Volatility Index (“VIX”), also called the “fear
3 index” or “fear gauge.” Basically, the VIX measures the market's expectations
4 for volatility over the next 30-day period. The higher the VIX, the greater the
5 expectation of volatility and market risk. Figure 1 below presents the VIX from
6 February 1 through June 30, 2020. Figure 1 shows that the VIX was much lower
7 in February, shot up to a high of 82.69 on March 16, then generally declined
8 through June, with the VIX at 30.43 on June 30, 2020.



9
10 **Q. PLEASE SUMMARIZE RECENT FED ACTIONS WITH RESPECT**
11 **TO MONETARY POLICY.**

12 **A.** As I testified in my Direct Testimony filed April 13 in the DEP proceeding, on
13 March 3 and 15, 2020, the Fed lowered the federal funds rate in response to
14 mounting concerns associated with the spread of the coronavirus worldwide.
15 On June 10, 2020, the Fed issued a press release that stated the following:

1 The Federal Reserve is committed to using its full range of tools to
2 support the U.S. economy in this challenging time, thereby
3 promoting its maximum employment and price stability goals.
4

5 The coronavirus outbreak is causing tremendous human and
6 economic hardship across the United States and around the world.
7 The virus and the measures taken to protect public health have
8 induced sharp declines in economic activity and a surge in job
9 losses. Weaker demand and significantly lower oil prices are
10 holding down consumer price inflation. Financial conditions have
11 improved, in part reflecting policy measures to support the
12 economy and the flow of credit to U.S. households and businesses.
13 The ongoing public health crisis will weigh heavily on economic
14 activity, employment, and inflation in the near term, and poses
15 considerable risks to the economic outlook over the medium term.
16 In light of these developments, the Committee decided to maintain
17 the target range for the federal funds rate at 0 to 1/4 percent. The
18 Committee expects to maintain this target range until it is confident
19 that the economy has weathered recent events and is on track to
20 achieve its maximum employment and price stability goals.
21

22 The Committee will continue to monitor the implications of
23 incoming information for the economic outlook, including
24 information related to public health, as well as global developments
25 and muted inflation pressures, and will use its tools and act as
26 appropriate to support the economy.
27

28 Beginning in March 2020, the Federal Reserve also announced
29 expanded actions to support credit and financial markets. The Board of
30 Governors of the Federal Reserve System established a new resource on
31 its web site that contains the Fed's ongoing response to the Covid-19
32 pandemic: <https://www.federalreserve.gov/covid-19.htm>. Some of the
33 major actions undertaken by the Fed include the following:

- 34 • Creation of the Municipal Liquidity Facility to assist state and local
35 governments manage cash flow to better serve households and
36 businesses (April 9, 2020).

- 1 • Creation of the Main Street Lending Program to support small and
2 medium sized businesses. There are three facilities that comprise this
3 program: the Main Street New Loan Facility, the Main Street Priority
4 Loan Facility, and the Main Street Expanded Loan Facility.
- 5 • Design of the Commercial Paper Funding Facility to support the flow
6 of credit to households and businesses (March 17, 2020).
- 7 • Establishment of the Primary Dealer Credit Facility designed to support
8 households and businesses (March 17, 2020).
- 9 • Establishment of the Money Market Mutual Fund Liquidity Facility as
10 another program to facilitate the flow of credit to households and
11 businesses (March 18, 2020).
- 12 • Establishment of the Primary and Secondary Corporate Credit Facilities
13 that support credit to employers (March 23, 2020).
- 14 • Implementation of the Paycheck Protection Program Liquidity Facility
15 to support the Small Business Administration's Paycheck Protection
16 Program (April 9, 2020).
- 17 • Establishment of the Term Asset-Backed Securities Loan Facility
18 ("TALF"), again to support the flow of credit to consumers and
19 businesses (March 23, 2020).²

² For more information on the Fed's response to Covid-19, please see <https://www.federalreserve.gov/funding-credit-liquidity-and-loan-facilities.htm>

1 **Q. PLEASE UPDATE THE COMMENTS FROM VALUE LINE'S**
2 **REPORTS ON THE ELECTRIC UTILITY INDUSTRY THAT WERE**
3 **PUBLISHED SINCE YOUR DIRECT TESTIMONY WAS FILED.**

4 **A.** In its June 12, 2020 report on the Electric Utility (Central) Industry, Value Line
5 noted the following:

6 Electric utility stocks, as a group, have outperformed the broader market
7 averages in 2020. There has been a wider-than-usual disparity in the
8 performances of individual stocks. Electric company equities have exhibited
9 more volatility than usual, too.
10

11 The Value Line report also noted that perhaps the “economic problems
12 will result in a lower rate of dividend growth, but we do not expect the boards
13 of any companies reviewed here to cut the disbursement.”

14 Value Line also noted the following in its May 15, 2020 report on the
15 Electric Utility (East) Industry:

16 Utility stocks are seen as a safe (more accurately, less-risky) haven when the
17 markets are turbulent. Most of the equities in this group have declined far less
18 than the broader market averages since the market plummeted in late February.
19 However, the volatility these issues have exhibited has belied their high Price
20 Stability Indexes. The quotations of most stocks in the Electric Utility Industry
21 have fallen between 10% and 20% so far this year. The average dividend yield
22 for this group is 3.8%.
23

24 My conclusion from this discussion is that regulated electric utilities
25 like DEC and DEP continue to be safe, conservative, and relatively stable
26 investments even in the currently volatile financial market.

27 **Q. WHAT ARE THE CURRENT CREDIT RATINGS FOR DUKE**
28 **ENERGY PROGRESS AND DUKE ENERGY CAROLINAS?**

1 **A.** The credit ratings for DEC and DEP have not changed since I filed my Direct
2 Testimony. DEC has an A1 rating from Moody's and an A- rating from Standard
3 and Poor's ("S&P"). DEP has an A2 credit rating from Moody's and an A- rating
4 from S&P. These ratings all have stable outlooks.

5 **Q. PLEASE PRESENT YOUR UPDATED ROE CALCULATIONS.**

6 **A.** Supplemental Exhibits RAB-1 through RAB-4 present my updated ROE
7 calculations. Supplemental Exhibit RAB-1 contains updated dividend yields for
8 the companies in the Proxy Group that Companies witness Dylan D'Ascendis
9 used in his Rebuttal Testimony. This is the same proxy group I used in my
10 Direct Testimony, with the addition of Avista Corporation, a company that now
11 meets Mr. D'Ascendis' criteria for inclusion. Stock prices were updated for the
12 six-month period of January through June, 2020.

13 Supplemental Exhibit RAB-2 contains updated growth forecasts from
14 the Value Line Investment Survey, Zacks, and Yahoo! Finance. This exhibit
15 also contains updated ROE estimates using the Discounted Cash Flow ("DCF")
16 method.

17 Supplemental Exhibits RAB-3 and RAB-4 present updated calculations
18 for the Capital Asset Pricing Model ("CAPM"). Supplemental Direct Table 1
19 below provides a summary of the updated ROE results.

Supplemental Direct Table 1 SUMMARY OF ROE ESTIMATES	
<u>DCF Methodology</u>	
Average Growth Rates	
- High	8.98%
- Low	8.29%
- Average	8.75%
Median Growth Rates:	
- High	9.28%
- Low	8.41%
- Average	8.88%
<u>CAPM Methodology</u>	
Forward-looking Market Return:	
- Current 30-Year Treasury	9.25%
- D&P Normalized Risk-free Rate	9.61%
Historical Risk Premium:	
- Current 30-Year Treasury	6.19% - 6.98%
- D&P Normalized Risk-free Rate	7.56% - 8.35%

1

2 **Q. PLEASE DISCUSS THE DIFFERENCES IN THE RESULTS FROM**
3 **THE ANALYSES IN YOUR DIRECT TESTIMONY.**

4 A. With respect to the DCF results, the updated six-month dividend yield increased
5 to 3.32% from 2.88%. However, the average and median growth rates for
6 Zacks, Yahoo! Finance, and Value Line declined. The resulting updated DCF
7 ROEs increased slightly from those in my Direct Testimony, from 8.60% -
8 8.67% to 8.75% - 8.88%.

9 The CAPM results increased significantly due to a very large increase
10 in the Value Line average beta value, from 0.56 in my Direct Testimony to 0.74
11 in the update. This represents an increase of 32.1% in the average beta for the
12 proxy group. Indeed, my updated results for the forward-looking CAPM
13 increased markedly to 9.25% - 9.61%. My updated results for the historical
14 CAPM also increased significantly to 6.19% - 8.14%.

1 **Q. BASED ON YOUR UPDATED ROE CALCULATIONS, WHAT IS**
2 **YOUR ROE RECOMMENDATION IN THIS CASE?**

3 A. I continue to recommend that the Commission adopt a 9.0% ROE for the
4 Companies. Although the DCF results increased in the update, they did not
5 increase enough to suggest a higher required ROE on the part of investors for
6 low-risk regulated electric utility investments like DEC and DEP. Further, the
7 stability of the Companies' current credit ratings do not suggest that the
8 required ROE increased since I filed my Direct Testimonies. Likewise,
9 although the CAPM results also increased, the range of both historical and
10 forecasted ROE results continue to support 9.0% as just and reasonable.

11 **Q. DOES THE TREND IN BOND YIELDS, BOTH FOR THE 30-YEAR**
12 **TREASURY BOND AND AVERAGE UTILITY BONDS, SUGGEST AN**
13 **INCREASE IN THE REQUIRED ROE FOR DEC AND DEP?**

14 A. No. June 2020 yields were lower than they were in January 2020 for both the
15 30-Year Treasury Bond and for bonds of regulated utilities. This decline in bond
16 yields does not support higher ROEs for the Companies.

17 **Q. IS A SIX-MONTH PERIOD STILL APPROPRIATE FOR**
18 **CALCULATING THE DIVIDEND YIELD FOR THE PROXY GROUP?**

19 A. Yes. The updated six-month period of January through June 2020 is weighted
20 more toward the more volatile period of the pandemic (March through June).
21 Supplemental Exhibit RAB-1 shows that the monthly dividend yield for the
22 proxy group increased significantly in March through May, then declined from
23 May to June. March through June dividend yields are all much higher than

1 January and February. Given the volatility present in financial markets, I
2 believe it is still advisable to include the more stable months of January and
3 February in the average dividend yield calculation for the proxy group.

4 **Q. YOU MENTIONED THAT THE CAPM RESULTS INCREASED SINCE**
5 **YOU FILED YOUR DIRECT TESTIMONY AND THAT A LARGE**
6 **INCREASE IN AVERAGE BETA FOR THE PROXY GROUP WAS**
7 **RESPONSIBLE. PLEASE ADDRESS WHETHER THE COMMISSION**
8 **SHOULD INCLUDE THE HIGHER CAPM RESULTS IN ITS**
9 **CONSIDERATION OF THE ALLOWED ROE FOR DEC AND DEP IN**
10 **THIS CASE.**

11 A. I continue to recommend that the Commission rely on the DCF model for its
12 ROE determination in this case. In my view, the sharp increase in betas for the
13 companies in the proxy group was influenced by the extreme market volatility
14 due to the Covid-19 pandemic. It is likely the increases in beta were due to
15 greater volatility in the stock prices for regulated electric utilities relative to the
16 movement of the market in general since the last Value Line reports that I relied
17 on in my Direct Testimony. The question now is whether investors believe that
18 regulated electric utilities are more risky relative to the general market than they
19 were before the volatile period since March 2020. I believe the sharp increase
20 in betas could be a short-term phenomenon and, as such, I would not advise
21 placing much reliance on the CAPM results at this time. Certainly, the DCF
22 results do not suggest a sharp increase in investor required ROEs for regulated
23 electric companies.

1 The increase in the average beta factor for the proxy group underscores
2 the shortcomings of the CAPM that I described in detail in my Direct Testimony
3 in the DEP case. I point to pages 29 - 30 of my Direct Testimony where the
4 problems with beta were set forth. The recent increase in the average beta for
5 the proxy group is not consistent with the decline in average utility bond yields
6 from January to June 2020. Also, given the decline in the Volatility Index (the
7 “VIX” that I presented earlier), I believe it is highly unlikely that a 32% increase
8 in expected betas for electric utilities since earlier in the year is accurate and
9 reliable. In conclusion, the CAPM results should be viewed with even more
10 caution and skepticism than when I filed my Direct Testimony in this
11 proceeding.

12 **Q. ARE YOU AWARE OF A RECENT ROE AWARD THAT WAS**
13 **GRANTED TO DUKE ENERGY KENTUCKY BY THE KENTUCKY**
14 **PUBLIC SERVICE COMMISSION?**

15 A. Yes, I am aware of this Order, as I was involved in this case on behalf of the
16 Attorney General of the Commonwealth of Kentucky. In its Order in Case No.
17 2019-00271 dated April 27, 2020 the Kentucky Public Service Commission
18 (“KPSC”) authorized an allowed ROE for Duke Energy Kentucky (“DEK”) of
19 9.25%. The KPSC also authorized a common equity ratio of 48.23%. Further,
20 the KPSC denied DEK's request for rehearing on the ROE issue in an Order
21 dated June 4, 2020. In terms of credit ratings, DEK has a Moody's rating of
22 Baa1 with a stable outlook and a S&P rating of A- with a stable outlook. These
23 credit ratings are fairly similar to those of DEC and DEP. In fact, the Companies

1 have slightly higher Moody's credit ratings (A2 and A1 for DEP and DEC,
2 respectively). My recommendation of a 9.0% ROE with a 51.50% common
3 equity ratio compares favorably with the KPSC Order for DEK.

4 I would like to add that I'm also aware that the KPSC made its ROE
5 determination based on data that preceded the Covid-19 pandemic and the
6 associated market volatility that I described earlier in this testimony. However,
7 my updated DCF analyses show the investor required return for regulated
8 electric companies did not change significantly since I filed my Direct
9 Testimony in the DEP case on April 13. I'm also aware that the NCUC will
10 base its ROE decision in this case on the evidence presented to it and not on the
11 ROE awards from other state commissions. Nevertheless, I wanted to provide
12 this additional recent information from the KPSC Order for the Commission's
13 consideration.

14 **II. ECONOMIC CONDITIONS IN NORTH CAROLINA**

15 **Q. PLEASE SUMMARIZE THE CHANGES IN ECONOMIC**
16 **CONDITIONS SINCE YOU FILED YOUR DIRECT TESTIMONY FOR**
17 **DEC AND DEP.**

18 **A.** The Covid-19 pandemic and the economic shutdowns that accompanied it,
19 including that in North Carolina, caused an unprecedented economic
20 contraction and skyrocketing unemployment. According to the U.S. Bureau of
21 Labor Statistics, the unemployment rate for the United States rose from 3.5%
22 in February 2020 to a high of 14.7% in April 2020. The unemployment rate for
23 May 2020 was 13.3% and declined further in June 2020 to 11.1%. For North

1 Carolina, the unemployment rate rose from 3.6 in February 2020 to 12.9% in
2 May the same as the rate for April.³

3 Nationally, real Gross Domestic Product (“GDP”) declined in the first
4 quarter of 2020 by -5.0%, according to the Bureau of Economic Analysis
5 (“BEA”).⁴ The BEA also reported that profits from current production
6 (corporate profits with inventory valuation and capital consumption
7 adjustments) decreased \$262.8 billion in the first quarter, in contrast to an
8 increase of \$53.0 billion in the fourth quarter of 2019.

9 **Q. HOW DO THESE CHANGED ECONOMIC CONDITIONS AFFECT**
10 **YOUR ROE RECOMMENDATION IN THESE PROCEEDINGS?**

11 **A.** The ongoing Covid-19 pandemic continues to significantly affect economic
12 activity, as well as the employment and incomes of North Carolinians. As I
13 stated in my Direct Testimony on page 48, it is more important than ever for
14 the Commission to consider the impacts of the Companies’ requested ROE of
15 10.3% - 10.5% on North Carolina ratepayers. The Companies’ ratepayers
16 simply cannot afford to be saddled with an excessive ROE in this range. Based
17 on current economic conditions and on my updated analyses, I continue to
18 recommend that the Commission authorize the Companies a ROE of 9.0%.

³ The May 2020 unemployment rate for North Carolina is preliminary. Data from *North Carolina Labor Market Conditions, May 2020*, North Carolina Department of Commerce. The June 2020 North Carolina unemployment rate was not available at the time I prepared my Supplemental Direct Testimony.

⁴ <https://www.bea.gov/news/2020/gross-domestic-product-1st-quarter-2020-third-estimate-corporate-profits-1st-quarter-2020>.

1 **Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL DIRECT**
2 **TESTIMONY?**

3 **A. Yes.**

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
ALLETE, Inc.	High Price (\$)	84.710	84.170	77.390	63.350	59.270	64.900
	Low Price (\$)	79.400	67.990	50.010	53.290	48.220	51.600
	Avg. Price (\$)	82.055	76.080	63.700	58.320	53.745	58.250
	Dividend (\$)	0.588	0.618	0.618	0.618	0.618	0.618
	Mo. Avg. Div.	2.86%	3.25%	3.88%	4.24%	4.60%	4.24%
	6 mos. Avg.	3.84%					
Alliant Energy Corp.	High Price (\$)	59.740	60.280	58.150	54.450	49.720	52.470
	Low Price (\$)	53.320	51.250	37.660	43.610	44.360	46.150
	Avg. Price (\$)	56.530	55.765	47.905	49.030	47.040	49.310
	Dividend (\$)	0.380	0.380	0.380	0.380	0.380	0.380
	Mo. Avg. Div.	2.69%	2.73%	3.17%	3.10%	3.23%	3.08%
	6 mos. Avg.	3.00%					
Ameren Corp.	High Price (\$)	82.410	87.330	87.660	81.250	75.270	77.420
	Low Price (\$)	75.540	77.190	58.740	65.900	66.330	67.140
	Avg. Price (\$)	78.975	82.260	73.200	73.575	70.800	72.280
	Dividend (\$)	0.495	0.495	0.495	0.495	0.495	0.495
	Mo. Avg. Div.	2.51%	2.41%	2.70%	2.69%	2.80%	2.74%
	6 mos. Avg.	2.64%					
American Electric Power Co.	High Price (\$)	104.430	104.970	100.650	88.290	85.850	88.120
	Low Price (\$)	92.940	86.420	65.140	71.200	76.230	77.150
	Avg. Price (\$)	98.685	95.695	82.895	79.745	81.040	82.635
	Dividend (\$)	0.700	0.700	0.700	0.700	0.700	0.700
	Mo. Avg. Div.	2.84%	2.93%	3.38%	3.51%	3.46%	3.39%
	6 mos. Avg.	3.25%					
Avista Corp.	High Price (\$)	50.910	52.430	53.000	45.760	42.530	40.840
	Low Price (\$)	46.180	45.940	32.090	38.780	34.520	33.340
	Avg. Price (\$)	48.545	49.185	42.545	42.270	38.525	37.090
	Dividend (\$)	0.388	0.405	0.405	0.405	0.405	0.405
	Mo. Avg. Div.	3.20%	3.29%	3.81%	3.83%	4.21%	4.37%
	6 mos. Avg.	3.78%					
Avangrid, Inc.	High Price (\$)	53.935	57.240	53.995	46.830	44.610	47.080
	Low Price (\$)	50.210	47.240	35.620	39.720	38.780	40.650
	Avg. Price (\$)	52.073	52.240	44.807	43.275	41.695	43.865
	Dividend (\$)	0.440	0.440	0.440	0.440	0.440	0.440
	Mo. Avg. Div.	3.38%	3.37%	3.93%	4.07%	4.22%	4.01%
	6 mos. Avg.	3.83%					

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
CMS Energy Corp.	High Price (\$)	68.980	69.170	68.990	64.080	58.960	61.190
	Low Price (\$)	61.570	59.120	46.030	53.960	52.350	55.800
	Avg. Price (\$)	65.275	64.145	57.510	59.020	55.655	58.495
	Dividend (\$)	0.383	0.408	0.408	0.408	0.408	0.408
	Mo. Avg. Div.	2.34%	2.54%	2.83%	2.76%	2.93%	2.79%
	6 mos. Avg.	2.70%					
DTE Energy Co.	High Price (\$)	134.720	135.670	119.490	113.300	108.730	117.910
	Low Price (\$)	127.620	110.200	71.210	85.530	92.390	102.190
	Avg. Price (\$)	131.170	122.935	95.350	99.415	100.560	110.050
	Dividend (\$)	1.013	1.013	1.013	1.013	1.013	1.013
	Mo. Avg. Div.	3.09%	3.29%	4.25%	4.07%	4.03%	3.68%
	6 mos. Avg.	3.74%					
Evergy, Inc.	High Price (\$)	72.620	76.570	73.160	64.700	62.680	65.400
	Low Price (\$)	62.930	63.180	42.010	50.640	54.000	57.600
	Avg. Price (\$)	67.775	69.875	57.585	57.670	58.340	61.500
	Dividend (\$)	0.505	0.505	0.505	0.505	0.505	0.505
	Mo. Avg. Div.	2.98%	2.89%	3.51%	3.50%	3.46%	3.28%
	6 mos. Avg.	3.27%					
Hawaiian Electric Ind.	High Price (\$)	49.630	50.550	55.150	46.660	39.920	40.760
	Low Price (\$)	45.040	42.030	33.510	38.790	34.930	34.790
	Avg. Price (\$)	47.335	46.290	44.330	42.725	37.425	37.775
	Dividend (\$)	0.320	0.330	0.330	0.330	0.330	0.330
	Mo. Avg. Div.	2.70%	2.85%	2.98%	3.09%	3.53%	3.49%
	6 mos. Avg.	3.11%					
NextEra Energy, Inc.	High Price (\$)	270.660	283.350	282.570	250.870	256.510	262.260
	Low Price (\$)	237.950	243.080	174.800	213.040	222.620	233.760
	Avg. Price (\$)	254.305	263.215	228.685	231.955	239.565	248.010
	Dividend (\$)	1.250	1.400	1.400	1.400	1.400	1.400
	Mo. Avg. Div.	1.97%	2.13%	2.45%	2.41%	2.34%	2.26%
	6 mos. Avg.	2.26%					
Northwestern Corp.	High Price (\$)	77.340	80.520	78.080	65.380	61.420	64.170
	Low Price (\$)	69.690	69.490	45.060	52.470	52.100	51.000
	Avg. Price (\$)	73.515	75.005	61.570	58.925	56.760	57.585
	Dividend (\$)	0.575	0.575	0.600	0.600	0.600	0.600
	Mo. Avg. Div.	3.13%	3.07%	3.90%	4.07%	4.23%	4.17%
	6 mos. Avg.	3.76%					

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
OGE Energy Corp.	High Price (\$)	46.330	46.430	40.320	33.770	32.940	34.910
	Low Price (\$)	43.220	37.160	23.010	26.370	27.960	29.220
	Avg. Price (\$)	44.775	41.795	31.665	30.070	30.450	32.065
	Dividend (\$)	0.388	0.388	0.388	0.388	0.388	0.388
	Mo. Avg. Div.	3.46%	3.71%	4.89%	5.15%	5.09%	4.83%
	6 mos. Avg.	4.52%					
Otter Tail Corp.	High Price (\$)	54.300	56.900	51.990	48.220	45.080	44.610
	Low Price (\$)	50.830	47.560	30.950	41.070	36.700	36.800
	Avg. Price (\$)	52.565	52.230	41.470	44.645	40.890	40.705
	Dividend (\$)	0.350	0.370	0.370	0.370	0.370	0.370
	Mo. Avg. Div.	2.66%	2.83%	3.57%	3.32%	3.62%	3.64%
	6 mos. Avg.	3.27%					
Pinnacle West Capital Corp.	High Price (\$)	98.810	105.510	100.730	84.690	78.670	82.290
	Low Price (\$)	88.100	88.600	60.050	67.290	69.560	69.960
	Avg. Price (\$)	93.455	97.055	80.390	75.990	74.115	76.125
	Dividend (\$)	0.783	0.783	0.783	0.783	0.783	0.783
	Mo. Avg. Div.	3.35%	3.22%	3.89%	4.12%	4.22%	4.11%
	6 mos. Avg.	3.82%					
PNM Resources, Inc.	High Price (\$)	55.240	56.140	52.240	46.820	41.380	43.500
	Low Price (\$)	48.520	45.470	27.080	35.390	34.240	36.930
	Avg. Price (\$)	51.880	50.805	39.660	41.105	37.810	40.215
	Dividend (\$)	0.308	0.308	0.308	0.308	0.308	0.308
	Mo. Avg. Div.	2.37%	2.42%	3.10%	2.99%	3.25%	3.06%
	6 mos. Avg.	2.87%					
Portland General Electric Co.	High Price (\$)	61.710	63.080	59.810	53.420	47.500	48.730
	Low Price (\$)	54.550	53.270	37.830	44.580	39.510	40.200
	Avg. Price (\$)	58.130	58.175	48.820	49.000	43.505	44.465
	Dividend (\$)	0.385	0.385	0.385	0.385	0.385	0.385
	Mo. Avg. Div.	2.65%	2.65%	3.15%	3.14%	3.54%	3.46%
	6 mos. Avg.	3.10%					
Southern Company	High Price (\$)	71.100	70.780	68.560	61.860	57.710	60.470
	Low Price (\$)	62.240	59.070	41.960	49.260	51.990	50.400
	Avg. Price (\$)	66.670	64.925	55.260	55.560	54.850	55.435
	Dividend (\$)	0.620	0.620	0.620	0.620	0.640	0.640
	Mo. Avg. Div.	3.72%	3.82%	4.49%	4.46%	4.67%	4.62%
	6 mos. Avg.	4.30%					

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
WEC Energy Group, Inc.	High Price (\$)	101.370	103.280	109.530	101.000	91.960	95.820
	Low Price (\$)	90.340	90.160	68.010	80.560	81.490	83.840
	Avg. Price (\$)	95.855	96.720	88.770	90.780	86.725	89.830
	Dividend (\$)	0.590	0.633	0.633	0.633	0.633	0.633
	Mo. Avg. Div.	2.46%	2.62%	2.85%	2.79%	2.92%	2.82%
	6 mos. Avg.	2.74%					
Xcel Energy	High Price (\$)	69.620	72.140	70.680	67.440	65.310	67.540
	Low Price (\$)	61.970	61.250	46.580	56.960	56.070	61.580
	Avg. Price (\$)	65.795	66.695	58.630	62.200	60.690	64.560
	Dividend (\$)	0.405	0.405	0.430	0.430	0.430	0.430
	Mo. Avg. Div.	2.46%	2.43%	2.93%	2.77%	2.83%	2.66%
	6 mos. Avg.	2.68%					
Monthly Avg. Dividend Yield		2.84%	2.92%	3.48%	3.50%	3.66%	3.54%
6-month Avg. Dividend Yield		3.32%					

Source: Yahoo! Finance

PROXY GROUP
DCF Growth Rate Analysis

<u>Company</u>	(1) Value Line <u>DPS</u>	(2) Value Line <u>EPS</u>	(3) <u>Zacks</u>	(4) Yahoo! <u>Finance</u>
ALLETE, Inc.	4.50%	5.50%	7.00%	7.00%
Alliant Energy Corporation	5.50%	6.50%	5.50%	5.30%
Ameren Corp.	5.00%	6.00%	6.80%	5.90%
American Electric Power Co.	5.50%	5.00%	5.80%	5.88%
Avangrid, Inc.	2.50%	6.00%	5.50%	6.40%
Avista Corp.	4.00%	1.00%	5.20%	6.00%
CMS Energy Corporation	7.00%	7.50%	6.90%	7.16%
DTE Energy Company	6.50%	5.00%	5.50%	5.84%
Energy, Inc.	5.50%	3.00%	5.00%	3.90%
Hawaiian Electric	4.00%	3.50%	1.70%	3.30%
NextEra Energy, Inc.	10.50%	10.00%	7.80%	8.07%
Northwestern Corporation	4.00%	2.50%	3.40%	3.70%
OGE Energy Corp.	6.00%	3.00%	3.70%	2.40%
Otter Tail Corporation	5.00%	3.50%	9.00%	9.00%
Pinnacle West Capital Corp.	5.50%	4.50%	5.20%	4.48%
PNM Resources, Inc.	5.50%	6.00%	6.10%	5.65%
Portland General Electric Company	6.00%	4.00%	5.30%	4.15%
Southern Company	3.00%	3.00%	4.00%	4.52%
WEC Energy Group	6.50%	6.00%	5.90%	5.90%
Xcel Energy Inc.	<u>6.00%</u>	<u>6.00%</u>	<u>5.90%</u>	<u>6.00%</u>
Average	5.40%	4.88%	5.56%	5.53%
Median	5.50%	5.00%	5.50%	5.86%

Sources: Value Line Investment Survey, April 24, May 15, and June 12, 2020
Yahoo! Finance and Zacks growth rates retrieved June 23, 2020
Yahoo! Finance growth rates used for Zacks growth rates for ALLETE, Otter Tail

**PROXY GROUP
DCF RETURN ON EQUITY**

	(1) Value Line Dividend Gr.	(2) Value Line Earnings Gr.	(3) Zack's Earning Gr.	(4) Yahoo! Earning Gr.	(5) Average of All Gr. Rates
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Method 1:

Dividend Yield	3.32%	3.32%	3.32%	3.32%	3.32%
Average Growth Rate	5.40%	4.88%	5.56%	5.53%	5.34%
Expected Div. Yield	<u>3.41%</u>	<u>3.41%</u>	<u>3.42%</u>	<u>3.42%</u>	<u>3.41%</u>
DCF Return on Equity	8.81%	8.29%	8.98%	8.95%	8.75%

Method 2:

Dividend Yield	3.32%	3.32%	3.32%	3.32%	3.32%
Median Growth Rate	5.50%	5.00%	5.50%	5.86%	5.47%
Expected Div. Yield	<u>3.42%</u>	<u>3.41%</u>	<u>3.42%</u>	<u>3.42%</u>	<u>3.41%</u>
DCF Return on Equity	8.92%	8.41%	8.92%	9.28%	8.88%

**PROXY GROUP
Capital Asset Pricing Model Analysis**

30-Year Treasury Bond, Value Line Beta

<u>Line No.</u>		<u>Value Line</u>
1	Market Required Return Estimate	11.90%
2	Risk-free Rate of Return, 30-Year Treasury Bond	
3	Average of Last Six Months	1.63%
4	Risk Premium	
5	(Line 1 minus Line 3)	10.26%
6	Comparison Group Beta	0.74
7	Comparison Group Beta * Risk Premium	
8	(Line 5 * Line 6)	7.62%
9	CAPM Return on Equity	
10	(Line 3 plus Line 8)	9.25%

Duff and Phelps Normalized Risk-free Rate

1	Market Required Return Estimate	11.90%
2	Duff and Phelps Normalized Risk-free Rate	3.00%
3	Risk Premium	
4	(Line 1 minus Line 2)	8.90%
5	Proxy Group Beta	0.74
6	Proxy Group Beta * Risk Premium	
7	(Line 4 * Line 5)	6.61%
8	CAPM Return on Equity	
9	(Line 2 plus Line 7)	9.61%

PROXY GROUP
Capital Asset Pricing Model Analysis

Supporting Data for CAPM Analyses

30 Year Treasury Bond Data

	<u>Avg. Yield</u>
January-20	2.22%
February-20	1.97%
March-20	1.46%
April-20	1.27%
May-20	1.38%
June-20	<u>1.49%</u>
6 month average	1.63%
Source: www.federalreserve.gov	

<u>Value Line Market Return Data:</u>	<u>Comparison Group Betas:</u>	<u>Value Line</u>
Forecasted Data:	ALLETE, Inc.	0.85
	Alliant Energy Corporation	0.80
	Ameren Corp.	0.80
Value Line Median Growth Rates:	American Electric Power Co.	0.75
Earnings	Avangrid, Inc.	0.80
Book Value	Avista Corp.	0.60
Average	CMS Energy Corporation	0.80
Average Dividend Yield	DTE Energy Company	0.90
Estimated Market Return	Evergy, Inc.	1.05
	Hawaiian Electric	0.55
Value Line Projected 3-5 Yr.	NextEra Energy, Inc.	0.85
Median Annual Total Return	Northwestern Corporation	0.55
Average Annual Total Return	OGE Energy Corp.	1.05
Average	Otter Tail Corporation	0.85
	Pinnacle West Capital Corp.	0.45
Average of Projected Mkt.	PNM Resources, Inc.	0.50
Returns	Portland General Electric Company	0.55
	Southern Company	0.90
Source: Value Line Investment Analyzer,	WEC Energy Group	0.80
June 24, 2020	Xcel Energy Inc.	<u>0.45</u>
	Average	0.74

PROXY GROUP
Capital Asset Pricing Model Analysis
Historic Market Premium

	<u>Arithmetic Mean</u>	<u>Adjusted Arithmetic Mean</u>
CAPM with Current 30-Year Treasury Yield		
Long-Term Annual Return on Stocks	12.10%	
Long-Term Annual Income Return on Long-Term Treas. Bonds	<u>4.90%</u>	
Historical Market Risk Premium	7.20%	6.14%
Proxy Group Beta, Value Line	<u>0.74</u>	<u>0.74</u>
Beta * Market Premium	5.35%	4.56%
Current 30-Year Treasury Bond Yield	<u>1.63%</u>	<u>1.63%</u>
CAPM Cost of Equity, Value Line Beta	<u>6.98%</u>	<u>6.19%</u>
CAPM with D&P Normalized Risk-Free Rate		
Historical Market Risk Premium	7.20%	6.14%
Proxy Group Beta, Value Line	0.74	0.74
Beta * Market Premium	5.35%	4.56%
D&P Normalized Risk-Free Rate	3.00%	3.00%
CAPM Cost of Equity, Normalized Risk-Free Rate	<u>8.35%</u>	<u>7.56%</u>

Source: Duff and Phelps Cost of Capital Navigator
2020 Cost of Capital: Annual U.S. Guidance and Examples, Chapter 2, Exhibit 2.3,
2019 Cost of Capital: Annual U.S. Guidance and Examples, Chapter 3, pages 45-47

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

**ELECTRONIC APPLICATION OF KENTUCKY)
POWER COMPANY FOR (1) A GENERAL)
ADJUSTMENT OF ITS RATES FOR ELECTRIC)
SERVICE; (2) APPROVAL OF TARIFFS AND)
RIDERS; (3) APPROVAL OF ACCOUNTING)
PRACTICES TO ESTABLISH REGULATORY) CASE NO. 2020-00174
ASSETS AND LIABILITIES; (4) APPROVAL OF)
A CERTIFICATE OF PUBLIC CONVENIENCE)
AND NECESSITY; AND (5) ALL OTHER)
REQUIRED APPROVALS AND RELIEF)**

**DIRECT TESTIMONY
AND EXHIBITS
OF
RICHARD A. BAUDINO**

**ON BEHALF OF
THE KENTUCKY OFFICE OF THE ATTORNEY GENERAL
KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.**

**J. KENNEDY AND ASSOCIATES, INC.
ROSWELL, GEORGIA**

OCTOBER 2020

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

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POWER COMPANY FOR (1) A GENERAL)
ADJUSTMENT OF ITS RATES FOR ELECTRIC)
SERVICE; (2) APPROVAL OF TARIFFS AND)
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PRACTICES TO ESTABLISH REGULATORY) CASE NO. 2020-00174
ASSETS AND LIABILITIES; (4) APPROVAL OF)
A CERTIFICATE OF PUBLIC CONVENIENCE)
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REQUIRED APPROVALS AND RELIEF)**

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POWER COMPANY FOR (1) A GENERAL)
ADJUSTMENT OF ITS RATES FOR ELECTRIC)
SERVICE; (2) APPROVAL OF TARIFFS AND)
RIDERS; (3) APPROVAL OF ACCOUNTING)
PRACTICES TO ESTABLISH REGULATORY) CASE NO. 2020-00174
ASSETS AND LIABILITIES; (4) APPROVAL OF)
A CERTIFICATE OF PUBLIC CONVENIENCE)
AND NECESSITY; AND (5) ALL OTHER)
REQUIRED APPROVALS AND RELIEF)**

DIRECT TESTIMONY OF RICHARD A. BAUDINO

I. QUALIFICATIONS AND SUMMARY

1 **Q. Please state your name and business address.**

2 A. My name is Richard A. Baudino. My business address is J. Kennedy and Associates,
3 Inc. (“Kennedy and Associates”), 570 Colonial Park Drive, Suite 305, Roswell,
4 Georgia 30075.

5 **Q. What is your occupation and by whom are you employed?**

6 A. I am a consultant with Kennedy and Associates.

7 **Q. Please describe your education and professional experience.**

8 A. I received my Master of Arts degree with a major in Economics and a minor in
9 Statistics from New Mexico State University in 1982. I also received my Bachelor of
10 Arts Degree with majors in Economics and English from New Mexico State in 1979.

11

1 I began my professional career with the New Mexico Public Service Commission Staff
2 in October 1982 and was employed there as a Utility Economist. During my
3 employment with the Staff, my responsibilities included the analysis of a broad range
4 of issues in the ratemaking field. Areas in which I testified included cost of service,
5 rate of return, rate design, revenue requirements, analysis of sale/leasebacks of
6 generating plants, utility finance issues, and generating plant phase-ins.

7
8 In October 1989, I joined the utility consulting firm of Kennedy and Associates as a
9 Senior Consultant where my duties and responsibilities covered substantially the same
10 areas as those during my tenure with the New Mexico Public Service Commission
11 Staff. I became Manager in July 1992 and was named Director of Consulting in
12 January 1995. Currently, I am a consultant with Kennedy and Associates.

13
14 Exhibit No. ___(RAB-1) summarizes my expert testimony experience.

15 **Q. On whose behalf are you testifying?**

16 A. I am testifying on behalf of the Kentucky Office of the Attorney General ("AG") and
17 the Kentucky Industrial Utility Customers, Inc. ("KIUC").

18 **Q. What is the purpose of your Direct Testimony?**

19 A. The purpose of my Direct Testimony is to address the allowed return on equity and
20 capital structure for the regulated electric operations for Kentucky Power Company
21 ("KPC", or "Company"). I will also respond to the Direct Testimony of Mr. Adrien
22 McKenzie, witness for KPC.

1 **Q. Please summarize your conclusions and recommendations.**

2 A. Based on current financial market conditions, I recommend that the Kentucky Public
3 Service Commission ("KPSC" or "Commission") adopt a range of 8.93% - 9.25% for
4 the return on equity ("ROE") for Kentucky Power Company in this proceeding. My
5 recommended ROE range is based on the results of a Discounted Cash Flow ("DCF")
6 model analysis. My DCF analysis incorporates my standard approach to estimating
7 the investor required return on equity and includes a proxy group of 21 companies and
8 dividend and earnings growth forecasts from the Value Line Investment Survey,
9 Yahoo! Finance, and Zacks.

10

11 My recommended range of ROE results fully incorporates the impact on financial
12 markets from the economic upheaval caused by the COVID-19 pandemic. I will
13 provide more information on this later in my testimony.

14

15 Mr. Lane Kollen, witness for the AG and KIUC, recommends that the Commission
16 adopt a 9.0% ROE in this case. Mr. Kollen explains the additional regulatory policy
17 considerations for the adoption of a 9.0% ROE. Mr. Kollen's recommendation falls
18 within my recommended range of DCF and CAPM ROE results and I support his
19 recommendation.

20

21 I also included two Capital Asset Pricing Model ("CAPM") analyses that employed
22 both forward-looking and historical market risk premiums. I did not directly
23 incorporate the results of the CAPM in my recommendation, although the range of
24 results from the CAPM support my ROE recommendation for KPC.

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In Section IV, I will respond to the testimony and ROE recommendation of the Company's witness Mr. McKenzie. I will demonstrate that his recommended ROE of 10.30% significantly overstates the current investor required return for KPC. Today's financial environment of low interest rates has been deliberately and methodically supported by Federal Reserve policy actions since 2009. A 10.30% ROE is inconsistent with investor required returns for low-risk regulated utilities like KPC.

Mr. McKenzie evaluated KPC's requested ROE of 10.0% and found it to be "a reasonable compromise between balancing the impact on customers and the need to provide the Company with a return that is adequate to compensate investors."¹ Based on my analysis, the Company's requested ROE is still too high and fails to balance the impact on customers with a fair return to investors. A 10.0% ROE would inflate the Company's revenue requirement and contribute to an unnecessary additional rate increase for Kentucky ratepayers. Compared to the AG/KIUC recommended ROE of 9.0%, a 10.0% ROE would increase the revenue requirement by \$8.33 million per year based on the Company's requested capital structure and rate base. This is an especially important consideration in the currently difficult economic environment. Ratepayers should support a fair rate of return to the Company and not be burdened with excessive costs from an inflated 10.0% ROE.

¹ McKenzie Direct Testimony, page 4, lines 11 through 13.

II. REVIEW OF ECONOMIC AND FINANCIAL CONDITIONS

1
2 **Q. What are the main guidelines to which you adhere in estimating the cost of**
3 **equity?**

4 A. Generally speaking, the estimated cost of equity should be comparable to the returns
5 of other firms with similar risk structures and should be sufficient for the firm to attract
6 capital. These are the basic standards set out by the United States Supreme Court in
7 *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) and *Bluefield*
8 *W.W. & Improv. Co. v. Public Service Comm'n*, 262 U.S. 679 (1922).

9
10 From an economist's perspective, the notion of "opportunity cost" plays a vital role in
11 estimating the ROE. One measures the opportunity cost of an investment equal to
12 what one would have obtained in the next best alternative. For example, let us suppose
13 that an investor decides to purchase the stock of a publicly-traded regulated gas utility.
14 That investor will make the decision based on the expectation of dividend payments
15 and perhaps some appreciation in the stock's value over time; however, that investor's
16 opportunity cost is measured by what she or he could have invested in as the next best
17 alternative. That alternative could have been another utility stock, a utility bond, a
18 mutual fund, a money market fund, or any other number of investment vehicles.

19
20 The key determinant in deciding whether to invest, however, is based on comparative
21 levels of risk. Our hypothetical investor would not invest in a particular electric
22 company stock if it offered a return lower than other investments of similar risk. The
23 opportunity cost simply would not justify such an investment. Thus, the task for the

1 rate of return analyst is to estimate a return that is equal to the return being offered by
2 other risk-comparable firms.

3 **Q. Does the level of interest rates affect the allowed ROE for regulated utilities?**

4 A. Yes. The common stock of regulated utilities is considered to be interest rate sensitive.
5 This means that the cost of equity for regulated utilities tends to rise and fall with
6 changes in interest rates. For example, as interest rates rise, the cost of equity will also
7 rise, and vice versa when interest rates fall. This relationship is due in large part to the
8 capital intensive nature of the utility industry, which relies heavily on both debt and
9 equity to finance its regulated investments.

10 **Q. Before you continue, please provide a brief explanation of how the Fed uses**
11 **interest rates to affect conditions in the financial markets.**

12 A. Generally, the Fed uses monetary policy to implement certain economic goals. The
13 Fed explained its monetary policy as follows:

14 Monetary policy in the United States comprises the Federal Reserve's
15 actions and communications to promote maximum employment, stable
16 prices, and moderate long-term interest rates--the three economic goals
17 the Congress has instructed the Federal Reserve to pursue.²

18 One of the Fed's primary tools for conducting monetary policy is setting the federal
19 funds rate. The federal funds rate is the interest rate set by the Fed that banks and
20 credit unions charge each other for overnight loans of reserve balances. Traditionally
21 the federal funds rate directly influences short-term interest rates, such as the Treasury
22 bill rate and interest rates on savings and checking accounts. The federal funds rate
23 has a more indirect effect on long-term interest rates, such as the 30-Year Treasury

² <https://www.federalreserve.gov/monetarypolicy.htm>

1 bond and private and corporate long-term debt. Long-term interest rates are set more
2 by market forces that influence the supply and demand of loanable funds.

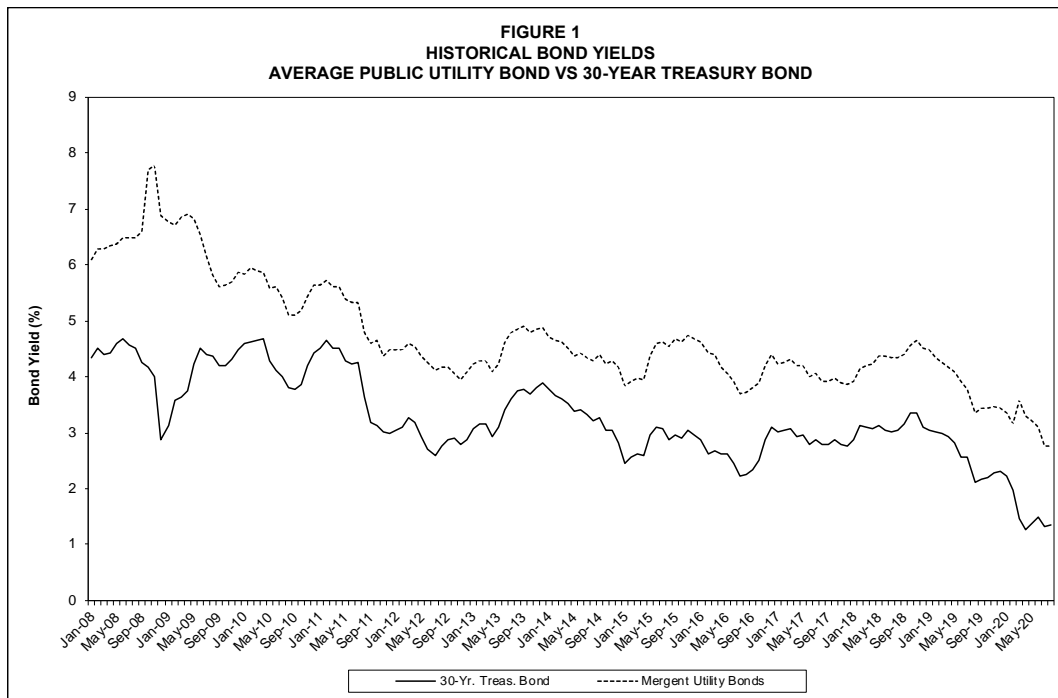
3 **Q. Describe the trend in interest rates over the last 10 or so years.**

4 A. Since 2007 and 2008, the overall trend in interest rates in the U.S. and the world
5 economy has been lower and this trend continued this year as governments and central
6 banks instituted programs in response to the economic shocks brought about the
7 Covid-19 pandemic. The trend of lower interest rates was precipitated by the 2007
8 financial crisis and severe recession that followed in December 2007. In response to
9 this economic crisis, the Federal Reserve ("Fed") undertook an unprecedented series
10 of steps to stabilize the economy, ease credit conditions, and lower unemployment and
11 interest rates. These steps are commonly known as Quantitative Easing ("QE") and
12 were implemented in three distinct stages: QE1, QE2, and QE3. The Fed's stated
13 purpose of QE was "to support the liquidity of financial institutions and foster
14 improved conditions in financial markets."³

15

16 Figure 1 below presents a graph that tracks the 30-Year Treasury bond yield and the
17 Mergent average utility bond yield. The time period covered is January 2008 through
18 August 2020.

³ https://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm



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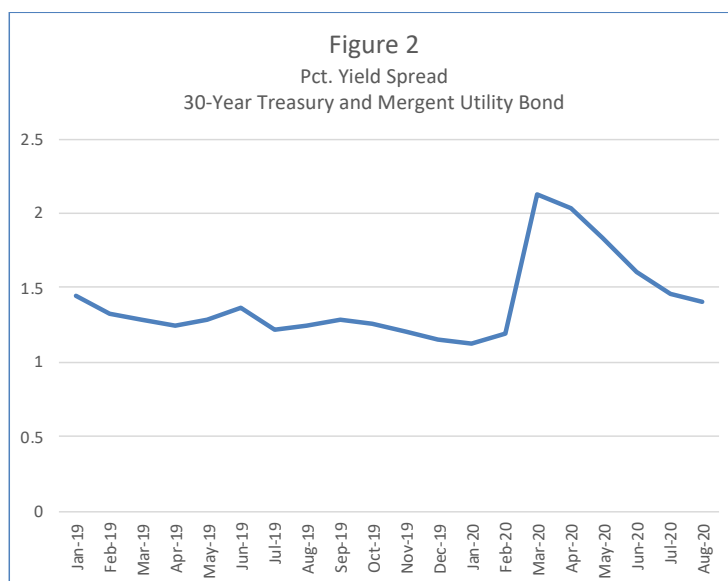
We can see from the graph in Figure 1 that since 2008, the trend in long-term bond yields has been lower. In January 2008, the yield on the 30-Year Treasury bond was 4.33% and the yield on the average public utility bond was 6.08%. As of August 2020, the 30-Year Treasury yield was 1.36% and the average utility bond yield was 2.76%.

I note that March and April 2020 were months of severe financial market volatility stemming from the COVID-19 pandemic and the attendant world-wide economic shutdowns. The yield on the 30-Year Treasury bond declined from an already low 1.97% in February 2020 to 0.99% on March 9, increased to 1.63% on March 17, and ended March at 1.46%.

Alternatively, the yield on the average public utility bond increased dramatically in March, rising from 3.14% in February to 4.24% on March 18, according to Moody's

1 Credit Trends. At the end of March, the average public utility bond yield fell to 3.59%
 2 according to the Mergent Bond Record. As of August 2020 the yield on the average
 3 public utility bond has declined even further to 2.76%. This August 2020 yield is
 4 significantly lower than the pre-pandemic January 2020 average utility bond yield of
 5 3.34% and is the lowest yield of the entire historical period covered in Figure 1.

6
 7 Figure 2 below presents the percentage yield spread between 30-Year Treasury Bonds
 8 and the Mergent average utility bond from January 2019 through August 2020. Figure
 9 2 shows that the yield spread in January 2019 was 1.44%, meaning that the average
 10 utility bond yield was 1.44% higher than the 30-Year Treasury Bond yield. The yield
 11 spread declined through 2019 and into February 2020, then spiked up to 2.13% in
 12 March and 2.03% in April. The yield spread then declined from May through August,
 13 finishing August at 1.40%. The behavior of the monthly yield spreads depicted in
 14 Figure 2 suggests that the market's perception of the relative risk of regulated utility
 15 bond increased substantially in March and April of 2020, but has subsided
 16 significantly since then.



1 **Q. Please summarize recent Fed actions with respect to monetary policy that led to**
2 **lower interest rates this year.**

3 A. In 2019, the Fed lowered the federal funds rate three times. On March 3, 2020, and
4 March 15, 2020, the Fed again lowered the federal funds rate in response to mounting
5 concerns associated with the spread of the coronavirus worldwide and the associated
6 lockdowns of the economy. Beginning in March 2020, the Fed also announced
7 expanded actions to support credit and financial markets. The Board of Governors of
8 the Fed system established a new resource on its web site that contains the Fed's
9 ongoing response to the COVID-19 pandemic: [https://www.federalreserve.gov/covid-](https://www.federalreserve.gov/covid-19.htm)
10 [19.htm](https://www.federalreserve.gov/covid-19.htm). Some of the major actions undertaken by the Fed include the following:

- 11 • Created the Municipal Liquidity Facility to assist state and local governments
12 manage cash flow to better serve households and businesses (April 9, 2020).
- 13 • Created the Main Street Lending Program to support small and medium sized
14 businesses (April 9, 2020). There are three facilities that comprise this
15 program: the Main Street New Loan Facility, the Main Street Priority Loan
16 Facility, and the Main Street Expanded Loan Facility.
- 17 • Established the Commercial Paper Funding Facility designed to support the
18 flow of credit to households and businesses (March 17, 2020).
- 19 • Established the Primary Dealer Credit Facility designed to support households
20 and businesses (March 17, 2020).
- 21 • Established the Money Market Mutual Fund Liquidity Facility as another
22 program to facilitate the flow of credit to households and businesses (March
23 18, 2020).

- 1 • Established the Primary and Secondary Corporate Credit Facilities that support
2 credit to employers (March 23, 2020).
- 3 • Implemented the Paycheck Protection Program Liquidity Facility to support
4 the Small Business Administration's Paycheck Protection Program (April 9,
5 2020).
- 6 • Established the Term Asset-Backed Securities Loan Facility ("TALF"), again
7 to support the flow of credit to consumers and businesses (March 23, 2020).⁴

8
9 On September 16, 2020, the Fed issued its most recent statement regarding its
10 continued support of the U.S. economy:

11 "The Federal Reserve is committed to using its full range of tools to support the U.S.
12 economy in this challenging time, thereby promoting its maximum employment and
13 price stability goals.

14
15 The COVID-19 pandemic is causing tremendous human and economic hardship across
16 the United States and around the world. Economic activity and employment have
17 picked up in recent months but remain well below their levels at the beginning of the
18 year. Weaker demand and significantly lower oil prices are holding down consumer
19 price inflation. Overall financial conditions have improved in recent months, in part
20 reflecting policy measures to support the economy and the flow of credit to U.S.
21 households and businesses.

22
23 The path of the economy will depend significantly on the course of the virus. The
24 ongoing public health crisis will continue to weigh on economic activity, employment,
25 and inflation in the near term, and poses considerable risks to the economic outlook
26 over the medium term.

27
28 The Committee seeks to achieve maximum employment and inflation at the rate of 2
29 percent over the longer run. With inflation running persistently below this longer-run
30 goal, the Committee will aim to achieve inflation moderately above 2 percent for some
31 time so that inflation averages 2 percent over time and longer-term inflation
32 expectations remain well anchored at 2 percent. The Committee expects to maintain
33 an accommodative stance of monetary policy until these outcomes are achieved. The

⁴ For more information on the Fed's response to COVID-19, please see
<https://www.federalreserve.gov/funding-credit-liquidity-and-loan-facilities.htm>.

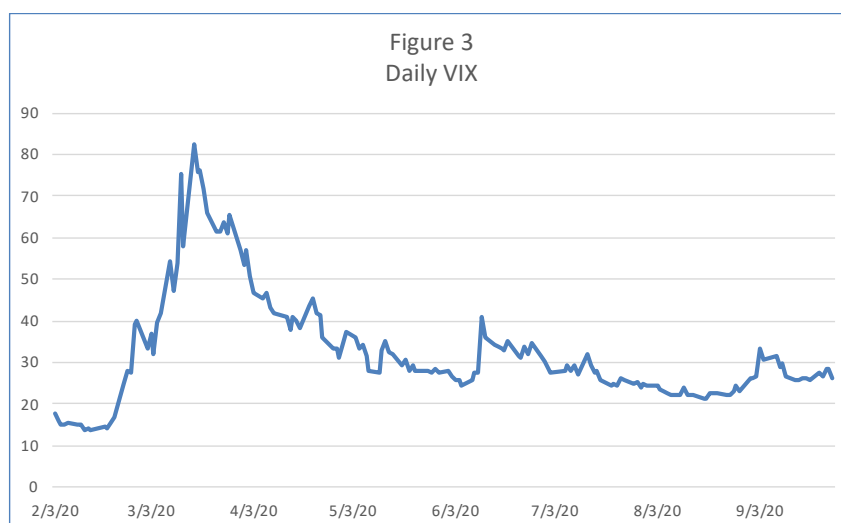
1 Committee decided to keep the target range for the federal funds rate at 0 to 1/4 percent
2 and expects it will be appropriate to maintain this target range until labor market
3 conditions have reached levels consistent with the Committee's assessments of
4 maximum employment and inflation has risen to 2 percent and is on track to
5 moderately exceed 2 percent for some time. In addition, over coming months the
6 Federal Reserve will increase its holdings of Treasury securities and agency mortgage-
7 backed securities at least at the current pace to sustain smooth market functioning and
8 help foster accommodative financial conditions, thereby supporting the flow of credit
9 to households and businesses."

10 **Q. Please summarize the impact on the stock market during the period of March**
11 **through September of this year.**

12 A. In March the stock market underwent a steep, sharp decline of approximately 19% as
13 investors reacted to the economic impact of COVID-19. Utilities also declined in
14 March, with the Dow Jones utility average declining from 886.52 on March 2 to a
15 March low of 695, a decline of about 21.6% with substantial volatility, or changes to
16 the index's value, within the month. In April, however, the Dow Jones Industrial
17 Average ("DJIA"), the Standard and Poor's 500 ("S&P 500") and the Dow Jones
18 Utility Average ("DJUA") began to recover. The Dow Jones utility index recovered
19 to finish April at 761.83, an increase of 9.6% from the March low. As of September
20 25, 2020, the Dow Jones Utility Index stood at 808.13. This represents a recovery of
21 16.3% from the March low of 695.

22 **Q. Please provide the Commission with some additional background information**
23 **regarding the substantial market volatility you just mentioned.**

24 A. A widely used measure of market volatility is the Chicago Board Options Exchange
25 ("CBOE") Volatility Index ("VIX"), also called the "fear index" or "fear gauge."
26 Basically, the VIX measures the market's expectations for volatility over the next 30-
27 day period. The higher the VIX, the greater the expectation of volatility and market
28 risk. Figure 3 below presents the VIX from February 1 through September 25, 2020.



1
2 Figure 3 shows that the VIX was much lower at the beginning of February (17.97),
3 shot up to a high of 82.69 on March 16, then generally declined through the year so
4 far, with the VIX at 26.38 on September 25, 2020. Figure 3 shows us that stock market
5 volatility has decline substantially since the March - April period, but is still elevated
6 compared to February. It is also elevated compared to the daily average for 2019,
7 which was 15.39.

8 **Q. How does the investment community regard the electric utility industry as a**
9 **whole?**

10 A. The September 11, 2020 Value Line Investment Survey report on the Electric Utility
11 (Central) Industry stated the following:

12 When companies in the Electric Utility Industry reported first-quarter earnings, the
13 major topic was the coronavirus and the weak economy. Utilities disclosed their
14 expectations about how the lockdowns, stay-at-home orders, and coronavirus-related
15 costs would affect their results. Some companies cut their earnings guidance for 2020,
16 and ALLETE temporarily withdrew its target for this year. To assist customers in this
17 troubled time, utilities (voluntarily or by state order) suspended disconnections for
18 nonpayment and waived late fees.

19
20 By the second week of June, every state had lifted its stay-at-home order, although
21 numerous restrictions (such as bans on indoor dining) are still in effect in some states.
22 With many people working from home and many businesses shut—temporarily or
23 permanently—it was obvious that residential kilowatt-hour sales would rise

1 considerably and commercial and industrial volume would decline sharply. Now that
2 the data are in, for some companies, the problems weren't as severe as management
3 originally feared.

4 * * *

5 As for costs associated with the coronavirus (direct and indirect such as a rise in bad-
6 debt expense), many states are allowing utilities to defer these for recovery in their
7 next general rate cases. Beginning in September, utilities in some states will resume
8 disconnecting customers for nonpayment and imposing late fees.

9 **Q. Please summarize the electric industry's 2020 credit rating situation as reported**
10 **by the Edison Electric Institute ("EEI").**

11 A. EEI's most recent assessment of the electric industry's credit fundamentals is contained
12 in its publication entitled *Credit Ratings Q2 2020*, which contains data and analysis
13 through June 30, 2020. The EEI publication noted the following with respect to the
14 industry's credit rating through the second quarter of this year:

- 15 • The electric utility industry credit remained generally strong, although overall
16 ratings activity was relatively light, with only 16 total actions: 6 upgrades and
17 10 downgrades.
- 18 • The average parent company credit rating was BBB+, a level that has held
19 since 2014. 80% of parent company outlooks were "stable", 4.4% were
20 "positive" or "watch-positive", and only 15.6% were "negative" or "watch-
21 negative."
- 22 • Although the economic impact of COVID-19 caused S&P to revise the
23 industry's outlook from stable to negative, Moody's and Fitch maintained a
24 stable outlook for their broad U.S. regulated utility sectors.

25 **Q. Please present the latest comments from Fitch Ratings with respect to the**
26 **earnings of the regulated utility industry.**

27 A. On September 3, 2020 Fitch Ratings announced the following with respect to the
28 second quarter earnings for the U.S. Utilities sector:

1 Strong 2Q20 Earnings Median earnings per share (EPS) at U.S. electric and natural
2 gas utilities covered by Fitch Ratings increased by 5.0% in 2Q20 from 2Q19. More
3 than 65% of Fitch's sample universe of utilities reported a yoy EPS increase for the
4 second quarter. The median change in EPS for 1H20 increased 1.4% compared with
5 1H19. Strong residential sales and favorable weather this year combined with mild
6 weather last year provided a strong boost to earnings, helping offset commercial and
7 industrial sales declines due to the coronavirus pandemic. 2020 Guidance Largely
8 Affirmed. The vast majority of utility companies affirmed full-year 2020 EPS
9 guidance during the 2Q20 earnings call, citing cost-cutting initiatives, rate base growth
10 and favorable weather as counterweights to pandemic-related declines in retail sales.⁵

11 **Q. What are the current credit ratings and bond ratings for KPC?**

12 A. KPC's current credit ratings are Baa3 from Moody's and A- from Standard and Poor's
13 ("S&P"). The ratings outlook from both agencies is stable.

14

15 S&P noted the following credit strengths in its April 8, 2020 credit report on KPC⁶:

- 16 • Lower-risk vertically integrated regulated electric utility.
- 17 • Credit-supportive and constructive regulatory framework in Kentucky.
- 18 • Balanced capital structure supports overall credit quality.

19 With respect to the Commission's credit-supportive framework, S&P pointed to timely
20 recovery of capital expenditures as well as the Company's fuel cost adjustment
21 mechanism.

22

23 Key risks cited by S&P were:

- 24 • Limited geographic diversity and small customer base.
- 25 • Coal-fired generation increases environmental compliance exposure.

⁵ <https://www.fitchratings.com/research/corporate-finance/us-utilities-residential-sales-favorable-weather-offset-coronavirus-slowdown-second-quarter-2020-earnings-wrap-up-03-09-2020>

⁶ The S&P and Moody's reports referred to in this section were provided by KPC in response to the Office of the Attorney General & KIUC's First Set of Data Requests dated August 12, 2020, Item No. 79.

- 1 • Customer concentration, with industrial customers contributing about one-half
2 of energy sales.

3
4 Moody's April 14, 2020 Credit Opinion cited a "reasonable regulatory relationship"
5 and KPC's position as part of the American Electric Power ("AEP") system as credit
6 strengths. Credit challenges cited by Moody's are:

- 7 • Increasing capital expenditures and cash deferrals will continue to pressure
8 already low credit metrics.
- 9 • Relatively weak service territory in eastern Kentucky.
- 10 • Elevated carbon transition risk.

11 **Q. Has KPC's parent company, American Electric Power ("AEP") provided**
12 **investors with recent guidance regarding its expected earnings growth and total**
13 **return?**

14 A. Yes. AEP recently provided its *UBS Roadshow* presentation dated September 17,
15 2020 on its web site. This presentation touted AEP's "strong profile" consisting of
16 investment pipeline, incentive compensation tied to earnings per share, steady growth,
17 consistent dividends, and low risk regulated assets. AEP provided its expectation of
18 total expected investor returns in the range of 8% - 10% based on a dividend yield of
19 approximately 3% and earnings per share growth of 5% - 7%. Please refer to Exhibit
20 No. ___(RAB-2) for relevant excerpts from this presentation.

21 **Q. Based on your review of the financial markets and the electric utility industry's**
22 **credit fundamentals to date, what are your observations with respect to**
23 **estimating the cost of equity for KPC in this case?**

24 A. The current economic environment holds some challenges for estimating the ROE
25 using the DCF, CAPM, and risk premium models. With respect to the DCF, the

1 decline in utility stock prices since February 2020 significantly raised the dividend
2 yield portion of the DCF, suggesting higher required ROEs on the part of investors.
3 Alternatively, falling Treasury and utility bond yields would tend to lower the CAPM
4 and risk premium models results, other things being equal. Increased stock market
5 volatility is also a factor for stock prices in the DCF model as well as the CAPM, as I
6 will show in the next section. All things considered, it is still my view that the DCF
7 will provide the Commission more accurate results than the CAPM and can be relied
8 upon to estimate the investor required ROE for KPC.

9

III. DETERMINATION OF FAIR RATE OF RETURN

1
2 **Q. Please describe the methods you employed in estimating a fair rate of return for**
3 **KPC.**

4 A. I employed a Discounted Cash Flow (“DCF”) analysis using a proxy group of
5 regulated electric utilities. My DCF analysis is my standard constant growth form of
6 the model that employs four different growth rate forecasts from the Value Line
7 Investment Survey, Yahoo! Finance, and Zacks. I also employed Capital Asset Pricing
8 Model (“CAPM”) analyses using both historical and forward-looking data. Although
9 I did not rely on the CAPM for my recommended ROE range of 8.93% - 9.25% for
10 KPC, the CAPM provides an alternative approach to estimating the ROE for KPC,
11 albeit a less reliable one.

12
13 In Section II of my Direct Testimony, I described the unusual circumstances
14 surrounding the financial markets caused by the COVID-19 pandemic. In the
15 Recommendation portion of this Section (Section III), I will offer my observations on
16 how these highly unusual circumstances may be affecting the DCF and CAPM and
17 will also offer my conclusions and recommendations to the Commission as to how to
18 take these circumstances into account in setting the allowed ROE for KPC in this
19 proceeding.

20 **Discounted Cash Flow (“DCF”) Model**

21 **Q. Please describe the basic DCF approach.**

22 A. The basic DCF approach is rooted in valuation theory. It is based on the premise that
23 the value of a financial asset is determined by its ability to generate future net cash
24 flows. In the case of a common stock, those future cash flows generally take the form

1 of dividends and appreciation in stock price. The value of the stock to investors is the
 2 discounted present value of future cash flows. The general equation then is:

$$3 \quad V = \frac{R}{(1+r)} + \frac{R}{(1+r)^2} + \frac{R}{(1+r)^3} + \dots + \frac{R}{(1+r)^n}$$

4 Where: *V = asset value*
 5 *R = yearly cash flows*
 6 *r = discount rate*

7 This is no different from determining the value of any asset from an economic point
 8 of view; however, the commonly employed DCF model makes certain simplifying
 9 assumptions. One is that the stream of income from the equity share is assumed to be
 10 perpetual; that is, there is no salvage or residual value at the end of some maturity date
 11 (as is the case with a bond). Another important assumption is that financial markets
 12 are reasonably efficient; that is, they correctly evaluate the cash flows relative to the
 13 appropriate discount rate, thus rendering the stock price efficient relative to other
 14 alternatives. Finally, the model I typically employ also assumes a constant growth rate
 15 in dividends. The fundamental relationship employed in the DCF method is described
 16 by the formula:

$$17 \quad k = D_1/P_0 + g$$

18 Where: *D₁ = the next period dividend*
 19 *P₀ = current stock price*
 20 *g = expected growth rate*
 21 *k = investor-required return*

22 Under the formula, it is apparent that “k” must reflect the investors’ expected return.
 23 Use of the DCF method to determine an investor-required return is complicated by the
 24 need to express investors’ expectations relative to dividends, earnings, and book value
 25 over an infinite time horizon. Financial theory suggests that stockholders purchase
 26 common stock on the assumption that there will be some change in the rate of dividend

1 payments over time. We assume that the rate of growth in dividends is constant over
2 the assumed time horizon, but the model could easily handle varying growth rates if
3 we knew what they were. Finally, the relevant time frame is prospective rather than
4 retrospective.

5 **Q. What was your first step in conducting your DCF analysis for KPC?**

6 A. My first step was to construct a comparison group of companies with a risk profile that
7 is reasonably similar to KPC. Since KPC is a subsidiary of American Electric Power,
8 it does not have publicly traded stock. Thus, one cannot estimate a DCF cost of equity
9 on the Company directly. It is necessary to use a group of companies that are similarly
10 situated and have reasonably similar risk profiles to KPC.

11 **Q. Please describe your approach for selecting a group of electric companies.**

12 A. For purposes of this case, I chose to rely on the proxy group that Company witness
13 McKenzie used for his analysis. Mr. McKenzie described the criteria he used to select
14 companies for his proxy group beginning on page 38 of his Direct Testimony. These
15 criteria are:

- 16 • Companies included in the Electric Utility Industry groups compiled by Value
17 Line.
- 18 • Electric utilities that paid common dividends over the last six months and have
19 not announced a dividend cut since that time.
- 20 • No ongoing involvement in a major merger or acquisition that would distort
21 quantitative results.
- 22 • Credit rating screens of BBB+ to A from S&P and Baa3 to Baa1 from Moody's.

23

1 The constituent members of Mr. McKenzie's proxy group comprise a reasonable basis
2 for purposes of estimating the ROE for the Company. I updated the credit ratings of
3 Mr. McKenzie's proxy group and found that all the companies had the same S&P credit
4 ratings, while two companies had lower Moody's credit ratings (American Electric
5 Power and Sempra Energy). Although these companies had lower credit ratings, they
6 were still within the credit rating band used by Mr. McKenzie. In updating the proxy
7 group, I also eliminated the following companies:

- 8 • Dominion Resources: Dominion Resources announced an expected dividend
9 cut for its 2020 4th quarter dividend. This expected cut was also mentioned in
10 the most recent Value Line report for Dominion. I note that this announcement
11 came after Mr. McKenzie filed his Direct Testimony in this case.
- 12 • PPL Corp.: On August 10, 2020 PPL Corp. announced its intention to divest
13 itself of its electric operations in the United Kingdom. PPL Corp. derives
14 significant earnings from its U.K. operations (\$1.40 of \$2.45 total earnings per
15 share in 2019). Given this significant potential change in PPL's operations, it
16 is prudent to exclude this company from the proxy group.

17
18 The resulting comparison group of 21 companies that I used in my analysis is shown
19 in the Table 1 below.

TABLE 1
Credit Ratings
Proxy Group and Kentucky Power

	<u>S&P</u>	<u>Moody's</u>
Alliant Energy Corporation	A-	Baa2
Ameren Corp.	BBB+	Baa1
American Electric Power Co.	A-	Baa2
Avangrid, Inc.	BBB+	Baa1
Black Hills Corp.	BBB+	Baa2
CMS Energy Corporation	BBB+	Baa1
Consolidated Edison	A-	Baa2
DTE Energy Company	BBB+	Baa2
Duke Energy Corp.	A-	Baa1
Entergy Corp.	BBB+	Baa2
Eversource Energy	A-	Baa2
Exelon Corp.	BBB+	Baa1
Fortis, Inc.	A-	Baa3
NextEra Energy	A-	Baa1
OGE Energy	BBB+	Baa1
Public Service Enterprise Group	BBB+	Baa1
Sempra Energy	BBB+	Baa2
Southern Company	A-	Baa2
WEC Energy Group	A-	Baa1
Xcel Energy Inc.	A-	Baa1
Kentucky Power	A-	Baa3

Ratings retrieved Sept. 16, 2020

1

2 **Q. What was your first step in determining the DCF return on equity for the**
3 **comparison group?**

4 A. I first determined the current dividend yield, D_1/P_0 , from the basic equation. My
5 general practice is to use six months as the most reasonable period over which to
6 estimate the dividend yield. The six-month period I used covered the months from
7 April through September 2020. I obtained historical prices and dividends from Yahoo!
8 Finance. The annualized dividend divided by the average monthly price represents
9 the average dividend yield for each month in the period.

10

11 The resulting average dividend yield for the comparison group is 3.52%. These
12 calculations are shown in Exhibit No. ___(RAB-3). Note that the monthly average

1 dividend yield declined from 3.64% in May to 3.52% in September, with a six-month
2 average of 3.52%.

3 **Q. Having established the average dividend yield, how did you determine the**
4 **investors' expected growth rate for the electric comparison group?**

5 A. The investors' expected growth rate, in theory, correctly forecasts the constant rate of
6 growth in dividends. The dividend growth rate is a function of earnings growth and
7 the payout ratio, neither of which is known precisely for the future. We refer to a
8 perpetual growth rate since the DCF model has no arbitrary cut-off point. We must
9 estimate the investors' expected growth rate because there is no way to know with
10 absolute certainty what investors expect the growth rate to be in the short term, much
11 less in perpetuity.

12
13 For my analysis in this proceeding, I used three major sources of analysts' forecasts
14 for growth. These sources are The Value Line Investment Survey, Zacks, and IBES.
15 This is the method I typically use for estimating growth for my DCF calculations.

16 **Q. Please briefly describe Value Line, Zacks, and Yahoo! Finance.**

17 A. The Value Line Investment Survey is a widely used and respected source of investor
18 information that covers approximately 1,700 companies in its Standard Edition and
19 several thousand in its Plus Edition. It is updated quarterly and probably represents
20 the most comprehensive of all investment information services. It provides both
21 historical and forecasted information on a number of important data elements. Value
22 Line neither participates in financial markets as a broker nor works for the utility
23 industry in any capacity of which I am aware.

1

2 Zacks gathers opinions from a variety of analysts on earnings growth forecasts for
3 numerous firms including regulated electric utilities. The estimates of the analysts
4 responding are combined to produce consensus average estimates of earnings growth.
5 I obtained Zacks' earnings growth forecasts from its web site.

6

7 Like Zacks, Yahoo! Finance also compiles and reports consensus analysts' forecasts
8 of earnings growth.

9 **Q. Why did you rely on analysts' forecasts in your analysis?**

10 A. Return on equity analysis is a forward-looking process. Five-year or ten-year
11 historical growth rates may not accurately represent investor expectations for future
12 dividend growth. Analysts' forecasts for earnings and dividend growth provide better
13 proxies for the expected growth component in the DCF model than historical growth
14 rates. Analysts' forecasts are also widely available to investors and one can reasonably
15 assume that they influence investor expectations.

16 **Q. Please explain how you used analysts' dividend and earnings growth forecasts in**
17 **your constant growth DCF analysis.**

18 Q. Columns (1) through (4) of Exhibit No. ___(RAB-4) shows the forecasted dividend
19 and earnings growth rates from Value Line and the earnings growth forecasts from
20 Zacks and Yahoo! Finance for the companies in the proxy group. It is important to
21 include dividend growth forecasts in the DCF model since the model calls for
22 forecasted cash flows and Value Line is the only source of which I am aware that
23 forecasts dividend growth. Please note that I substituted the Zacks earnings growth

1 rate for the Yahoo! Finance earnings growth rate for Exelon Corp. which was negative.
2 I did this because Zacks' growth rates are consensus analysts' forecasts and, as such,
3 form a reasonable substitute for the negative growth rate from Yahoo! Finance.
4 Negative growth rates cannot be expected to continue in perpetuity and so should be
5 excluded from the proxy group constant growth DCF analysis.

6 **Q. How did you proceed to determine the DCF return of equity for the proxy group?**

7 A. To estimate the expected dividend yield (D_1), the current dividend yield must be
8 moved forward in time to account for dividend increases over the next twelve months.
9 I estimated the expected dividend yield by multiplying the current dividend yield by
10 one plus one-half the expected growth rate.

11
12 Exhibit No. ___(RAB-4) presents my standard method of calculating dividend yields,
13 growth rates, and return on equity for the comparison group of companies. The proxy
14 group DCF Return on Equity section shows the application of each of four growth
15 rates to the current group dividend yield of 3.52% to calculate the expected dividend
16 yield. I then added the expected growth rates to the expected dividend yield. My
17 DCF return on equity was calculated using two different methods. Method 1 uses the
18 average growth rates shown in the upper section of Exhibit No. ___(RAB-4) and
19 Method 2 utilizes the median growth rates shown in that section.

20 **Q. What are the results of your constant growth DCF model?**

21 A. For Method 1 (average growth rates), the results range from 8.75% to 9.05%, with the
22 average of these results being 8.93%. For Method 2 (median growth rates), the results
23 range from 8.61% to 9.63%, with the average of these results being 9.25%.

1 **Capital Asset Pricing Model**

2 **Q. Briefly summarize the Capital Asset Pricing Model (“CAPM”) approach.**

3 A. The theory underlying the CAPM approach is that investors, through diversified
4 portfolios, may combine assets to minimize the total risk of the portfolio.
5 Diversification allows investors to diversify away all risks specific to a particular
6 company and be left only with market risk that affects all companies. Thus, the CAPM
7 theory identifies two types of risks for a security: company-specific risk and market
8 risk. Company-specific risk includes such events as strikes, management errors,
9 marketing failures, lawsuits, and other events that are unique to a particular firm.
10 Market risk includes inflation, business cycles, war, variations in interest rates, and
11 changes in consumer confidence. Market risk tends to affect all stocks and cannot be
12 diversified away. The idea behind the CAPM is that diversified investors are rewarded
13 with returns based on market risk.

14
15 Within the CAPM framework, the expected return on a security is equal to the risk-
16 free rate of return plus a risk premium that is proportional to the security’s market, or
17 non-diversifiable, risk. Beta is the factor that reflects the inherent market risk of a
18 security and measures the volatility of a particular security relative to the overall
19 market for securities. For example, a stock with a beta of 1.0 indicates that if the market
20 rises by 15%, that stock will also rise by 15%. This stock moves in tandem with
21 movements in the overall market. Stocks with a beta of 0.5 will only rise or fall 50%
22 as much as the overall market. So with an increase in the market of 15%, this stock
23 will only rise 7.5%. Stocks with betas greater than 1.0 will rise and fall more than the

1 overall market. Thus, beta is the measure of the relative risk of individual securities
2 vis-à-vis the market.

3
4 Based on the foregoing discussion, the equation for determining the return for a
5 security in the CAPM framework is:

$$6 \quad K = Rf + \beta(MRP)$$

7 *Where: K = Required Return on equity*

8 *Rf = Risk-free rate*

9 *MRP = Market risk premium*

10 *β = Beta*

11 This equation tells us about the risk/return relationship posited by the CAPM.
12 Investors are risk averse and will only accept higher risk if they expect to receive
13 higher returns. These returns can be determined in relation to a stock's beta and the
14 market risk premium. The general level of risk aversion in the economy determines
15 the market risk premium. If the risk-free rate of return is 3.0% and the required return
16 on the total market is 15%, then the risk premium is 12%. Any stock's risk premium
17 can be determined by multiplying its beta by the market risk premium. Its total return
18 may then be estimated by adding the risk-free rate to that risk premium. Stocks with
19 betas greater than 1.0 are considered riskier than the overall market and will have
20 higher required returns. Conversely, stocks with betas less than 1.0 will have required
21 returns lower than the market as a whole.

22 **Q. In general, are there concerns regarding the use of the CAPM in estimating the**
23 **return on equity?**

24 **A.** Yes. There is some controversy surrounding the use of the CAPM and its accuracy

1 regarding expected returns. There is substantial evidence that beta is not the primary
2 factor for determining the risk of a security. For example, Value Line's "Safety Rank"
3 is a measure of total risk, not its calculated beta coefficient. Beta coefficients usually
4 describe only a small amount of total investment risk. Dr. Burton Malkiel, author of *A*
5 *Random Walk Down Wall Street* noted the following in his best-selling book on
6 investing:

7 Second, as Professor Richard Roll of UCLA has argued, we must keep
8 in mind that it is very difficult (indeed probably impossible) to measure
9 beta with any degree of precision. The S&P 500 Index is not "the
10 market." The Total Stock Market contains many thousands of
11 additional stocks in the United States and thousands more in foreign
12 countries. Moreover, the total market includes bonds, real estate,
13 commodities, and assets of all sorts, including one of the most
14 important assets any of us has - the human capital built up by education,
15 work, and life experience. Depending on exactly how you measure "the
16 market" you can obtain very different beta values.⁷

17 Pratt and Grabowski also stated the following with respect to the CAPM:⁸

18 Even though the capital asset pricing model (CAPM) is the most widely
19 used method of estimating the cost of equity capital, the accuracy and
20 predictive power of beta as the sole measure of risk have increasingly
21 come under attack. As a result, alternative measures of risk have been
22 proposed and tested. That is, despite its wide adoption, academics and
23 practitioners alike have questioned the usefulness of CAPM in
24 accurately estimating the cost of equity capital and the use of beta as a
25 reliable measure of risk.

26 As a practical matter, there is substantial judgment involved in estimating the required
27 market return and market risk premium. In theory, the CAPM requires an estimate of
28 the return on the total market for investments, including stocks, bonds, real estate, etc.
29 It is nearly impossible for the analyst to estimate such a broad-based return. Often in

⁷ *A Random Walk Down Wall Street*, Burton G. Malkiel, page 218, 2019 edition.

⁸ *Cost of Capital*, Shannon Pratt and Roger Grabowski, 5th Edition, page 288, published by Wiley.

1 utility cases, a market return is estimated using the S&P 500. However, as Dr. Malkiel
2 pointed out, this is a limited source of information with respect to estimating the
3 investor's required return for all investments. In practice, the total market return
4 estimate faces significant limitations to its estimation and, ultimately, its usefulness in
5 quantifying the investor required ROE.

6
7 In the final analysis, a considerable amount of judgment must be employed in
8 determining the market return and expected risk premium elements of the CAPM
9 equation. The analyst's application of judgment can significantly influence the results
10 obtained from the CAPM. My past experience with the CAPM indicates that it is
11 prudent to use a wide variety of data in estimating investor-required returns. Of course,
12 the range of results may also be wide, indicating the difficulty in obtaining a reliable
13 estimate from the CAPM.

14 **Q. How did you estimate the market return and market risk premium of the CAPM?**

15 A. I used two approaches to estimate the market risk premium portion of the CAPM
16 equation. One approach uses the expected return on the market and is forward-looking.
17 The other approach employs an historical risk premium based on actual stock and bond
18 returns from 1926 through 2019.

19 **Q. Please describe your forward-looking approach to estimating the market risk**
20 **premium.**

21 A. The first source I used was the Value Line Investment Analyzer Plus Edition, for
22 September 18, 2020. The Value Line Investment Analyzer provides a summary
23 statistical report detailing, among other things, forecasted growth rates for earnings

1 and book value for the companies Value Line follows as well as the projected total
2 annual return over the next 3 to 5 years. I present these growth rates and Value Line's
3 projected annual returns on page 2 of Exhibit No. ___(RAB-5). I included median
4 earnings and book value growth rates. The estimated market returns using Value
5 Line's market data range from 8.91% to 13.18%. The average of these market returns
6 is 11.05%.

7 **Q. Why did you use median growth rate estimates rather than the average growth**
8 **rate estimates for the Value Line companies?**

9 A. Using median growth rates is likely a more accurate approach to estimating the central
10 tendency of Value Line's large data set compared to the average growth rates. Average
11 earnings and book value growth rates may be unduly influenced by very high or very
12 low 3–5-year growth rates that are unsustainable in the long run. For example, Value
13 Line's Statistical Summary shows both the highest and lowest value for earnings and
14 book value growth forecasts. For earnings growth, Value Line showed the highest
15 earnings growth forecast to be 95% and the lowest growth rate to be -20%. With
16 respect to book value, the highest growth rate was 82% and the lowest was a -32.5%.
17 None of these growth rate projections is compatible with long-run growth prospects
18 for the market as a whole. The median growth rate is not influenced by such extremes
19 because it represents the middle value of a very wide range of earnings growth rates.

20 **Q. Please continue with your market return analysis.**

21 A. I also considered a supplemental check to the Value Line projected market return
22 estimates. Duff and Phelps compiled a study of historical returns on the stock market
23 in its *2020 Valuation Handbook - U.S. Guide to Cost of Capital*, which is now part of

1 its Cost of Capital Navigator subscription service. Some analysts employ this
2 historical data to estimate the market risk premium of stocks over the risk-free rate.
3 The assumption is that a risk premium calculated over a long period of time is
4 reflective of investor expectations going forward. Exhibit No. ___(RAB-6) presents
5 the calculation of the market returns and market risk premiums using the historical
6 data from Duff and Phelps.

7 **Q. Please explain how this historical risk premium is calculated.**

8 A. Exhibit No. ___(RAB-6) shows the arithmetic average of yearly historical stock
9 market returns over the historical period from 1926 – 2019. The average annual
10 income return for 20-year Treasury bond is subtracted from these historical stock
11 returns to obtain the historical market risk premium of stock returns over long-term
12 Treasury bond income returns. The resulting historical market risk premium is 7.2%.

13 **Q. Did you add an additional measure of the historical risk premium in this case?**

14 A. Yes. Duff and Phelps reported the results of a study by Dr. Roger Ibbotson and Dr.
15 Peng Chen indicating that the historical risk premium of stock returns over long-term
16 government bond returns has been significantly influenced upward by substantial
17 growth in the price/earnings (“P/E”) ratio.⁹ Duff and Phelps noted that this growth in
18 the P/E ratio for stocks was subtracted out of the historical risk premium to arrive at
19 an adjusted “supply side” historical arithmetic market risk premium is 6.14%, which I
20 have also included in Exhibit No. ___(RAB-6).

⁹ 2019 *Cost of Capital: Annual U.S. Guidance and Examples*, Duff and Phelps, Cost of Capital Navigator, Chapter 3, pp. 45 - 47.

1 **Q. How did you determine the risk free rate?**

2 A. I used two different measures for the risk-free rate. The first measure is the average
3 30-year Treasury Bond yield for the six-month period from March through August
4 2020. This represents a current measure of the risk-free rate based on actual current
5 Treasury yields, which is 1.38%.

6

7 The second measure comes from Duff and Phelps' most recent "normalized" risk-free
8 rate of June 30, 2020.¹⁰ Duff and Phelps developed this normalized risk-free rate using
9 its measure of the "real risk free rate" and expected inflation. The Duff and Phelps
10 normalized risk-free rate is 2.5%. I note that this updated normalized risk-free rate
11 was lowered from 3.0%, which was in effect prior to June 30, 2020.

12 **Q. Please summarize your calculated market risk premium estimates with the**
13 **forward-looking data from Value Line and the historical Duff and Phelps equity**
14 **risk premiums.**

15 **A.** My market risk premiums from Exhibit Nos. ___(RAB-5) and (RAB-6) are as follows:

16 • Forward-looking risk premiums 8.55% - 9.67%

17 • Historical risk premium 6.14% - 7.20%

18 By way of comparison, Duff and Phelps currently recommends an equity risk premium
19 of 6.0%, which resulted in a base U.S. cost of capital estimate of 8.5%. Based on this
20 comparison, my range of equity risk premium estimates are certainly not overly
21 conservative or understated.

¹⁰ <https://www.duffandphelps.com/insights/publications/cost-of-capital/us-normalized-risk-free-rate-lowered-june-30-2020>

1 **Q. How did you determine the value for beta?**

2 **A.** I obtained the betas for the companies in the proxy group from most recent Value Line
3 reports. The average of the Value Line betas for the proxy group is 0.87.

4 **Q. Mr. Baudino, have the Value Line betas for regulated utility companies increased**
5 **since Mr. McKenzie filed his Direct Testimony?**

6 **A.** Yes, the betas for the companies in the proxy group have all increased substantially.
7 Please refer to Table 2 below, which presents a comparison of betas from Mr.
8 McKenzie's testimony and the betas I used in my Exhibit No. ___(RAB-5).

	<u>McKenzie Testimony</u>	<u>Baudino Testimony</u>	<u>Pct. Change</u>
Alliant Energy Corporation	0.55	0.85	55%
Ameren Corp.	0.50	0.80	60%
American Electric Power Co.	0.50	0.75	50%
Avangrid, Inc.	0.40	0.80	100%
Black Hills Corp.	0.65	1.00	54%
CMS Energy Corporation	0.50	0.80	60%
Consolidated Edison	0.40	0.75	88%
DTE Energy Company	0.50	0.90	80%
Duke Energy Corp.	0.45	0.85	89%
Entergy Corp.	0.60	0.95	58%
Evergy Inc.	N/A	1.00	N/A
Eversource Energy	0.55	0.90	64%
Exelon Corp.	0.65	0.95	46%
Fortis, Inc.	0.60	0.80	33%
NextEra Energy	0.50	0.85	70%
OGE Energy	0.70	1.05	50%
Public Service Enterprise Group	0.60	0.90	50%
Sempra Energy	0.65	0.95	46%
Southern Company	0.50	0.90	80%
WEC Energy Group	0.45	0.80	78%
Xcel Energy Inc.	<u>0.45</u>	<u>0.75</u>	<u>67%</u>
Average	0.54	0.87	63%

9

10 Table 2 demonstrates that the betas for the companies in the proxy group increased
11 sharply from earlier in 2020. Indeed, the average for the group increased by 63%.

12 Three companies now have betas at or near 1.0, suggesting that they are now as risky
13 as the overall stock market.

14

1 In my view, the sharp increase in betas for the companies in the proxy group was
2 influenced by the extreme market volatility due to the COVID-19 pandemic. It is
3 likely the increases in beta were due to greater volatility in the stock prices for
4 regulated electric utilities relative to the movement of the market in general compared
5 to the prior betas that were used by Mr. McKenzie. The question now is whether
6 investors believe that regulated electric utilities are substantially more risky than they
7 were before the volatile period since March 2020. I believe the sharp increase in betas
8 could be a short-term phenomenon and, as such, I would not advise placing significant
9 reliance on current betas at this time. Prior history of lower utility betas suggests
10 caution with respect to their current betas. I believe it is highly unlikely that a 63%
11 increase in expected betas for electric utilities since earlier in the year is accurate and
12 reliable or is necessarily reflective of investor expectations over the longer term.
13 Moreover, the increase in the average beta factor for the proxy group underscores the
14 shortcomings of the CAPM that I described in detail earlier in my Direct Testimony.

15 **Q. Please summarize the CAPM results.**

16 **A.** For my forward-looking CAPM return on equity estimates, the CAPM results range
17 from 9.80% to 9.95%. Using historical risk premiums, the CAPM results range from
18 6.73% to 8.77%.

19 **Conclusions and Recommendations**

20 **Q. Please summarize the cost of equity results for your DCF and CAPM analyses.**

21 **A.** Table 3 below summarizes my return on equity results using the DCF and CAPM for
22 my comparison group of companies.

**TABLE 3
SUMMARY OF ROE ESTIMATES**

<u>DCF Methodology</u>	
Average Growth Rates	
- High	9.05%
- Low	8.75%
- Average	8.93%
Median Growth Rates:	
- High	9.63%
- Low	8.61%
- Average	9.25%
<u>CAPM Methodology</u>	
Forward-lookng Market Return:	
- Current 30-Year Treasury	9.80%
- D&P Normalized Risk-free Rate	9.95%
Historical Risk Premium:	
- Current 30-Year Treasury	6.73% - 7.65%
- D&P Normalized Risk-free Rate	7.85% - 8.77%

1

2 **Q. What is your recommended return on equity range for KPC?**

3 A. I recommend that the KPSC adopt a ROE range of 8.93% - 9.25% for KPC. My
 4 recommendation is consistent with the DCF results and falls within the range of my
 5 CAPM results as well. As can be seen in Exhibit No. ___(RAB-3), the monthly
 6 dividend yields for the proxy group have been relatively stable since May of 2020,
 7 ranging from 3.42% in August to 3.64% in May. The six-month average dividend
 8 yield of 3.52% is reasonably representative of current investor expectations in the
 9 current environment. As I demonstrated in my Figure 1, stock market volatility has
 10 substantially decreased from March and April of this year, although is still elevated
 11 from the beginning of 2020. All of this provides additional support for relying on the
 12 DCF model's results in this case. In addition, current interest rates are low and the
 13 long-term utility bond yield has fallen substantially from January 2020. This does not
 14 support a significant increase in the ROE from pre-pandemic levels.

15

1 Finally, the ROE range of 8.93% -9.25% is consistent with AEP's September 17, 2020
2 UBS Roadshow presentation of forecasted expected shareholder returns in the range
3 of 8% - 10%.

4

5 Mr. Kollen will provide his AG/KIUC recommended ROE of 9.0% based on my
6 recommended ROE range as well as other important regulatory policy considerations
7 in this case.

8 **Q. Do you agree with KPC's requested capital structure?**

9 A. I agree with the Company's requested common equity ratio of 43.25%. Mr. Kollen
10 addresses the inclusion of short-term debt in the Company's capital structure.

11

1 **IV. RESPONSE TO KENTUCKY POWER TESTIMONY**

2 **Q. Have you reviewed the Direct Testimony of Mr. McKenzie?**

3 A. Yes.

4 **Q. Please summarize your conclusions with respect to his testimony and return on**
5 **equity recommendation.**

6 A. Mr. McKenzie's recommended 10.3% return on equity is overstated and inconsistent with
7 the current financial market evidence and the low interest rate environment I have
8 described earlier in my Direct Testimony. As I shall demonstrate later in this section of
9 my testimony, Mr. McKenzie made judgments that served to inflate his ROE results,
10 particularly for the DCF and CAPM.

11 **Considerations for Current Capital Markets and KPC's ROE**

12 **Q. Before you address the specifics of Mr. McKenzie's ROE analyses, please address**
13 **certain conclusions he made on page 9 of his Direct Testimony.**

14 A. Mr. McKenzie made the following statement on page 9, lines 18 through 22 of his
15 Direct Testimony:

16 The threat posed by the global pandemic has clearly led to a fundamental reevaluation
17 of risks and required returns, including for utility common stocks, but the high degree
18 of uncertainty, extreme short-term volatility, and lack of consistent data greatly
19 complicates any ability to account for this heightened risk through the application of
20 standard market based methods (e.g., DCF, CAPM) at this time.
21

22 I agree with Mr. McKenzie's statement to an extent. Utility stock prices have certainly
23 been revalued since February 2020 and have been quite volatile, like the stock market
24 has been as I described earlier in my testimony. It also appears that increased betas
25 for electric utility stocks may point to increased risk for this sector relative to the stock
26 market as a whole, although this short-term shift should be viewed with some caution

1 given the extreme volatility earlier this year that both Mr. McKenzie and I have
2 described.

3
4 Utility stock prices have also recovered significantly since March 2020, as has the
5 stock market generally. Exhibit No. ___(RAB-3) shows a decline in the proxy group
6 dividend yield from May through September, which underscores that recovery. As I
7 pointed out in Section II, although stock market volatility has subsided since March
8 2020, it is still higher than January and February of 2020 and higher than in 2019. In
9 this regard, it is prudent to use a six-month average dividend yield for purposes of
10 estimating the DCF ROE in this case, as this period assists in smoothing out the month-
11 to-month volatility.

12
13 Having said this, I certainly agree with Mr. McKenzie that uncertainty and associated
14 risk is greater now than it was prior to March 2020. Nevertheless, prudent and
15 reasonable efforts can still be made to estimate the investor required ROE for a low
16 risk regulated electric utility like KPC. Based on the data I reviewed and relied upon,
17 I still recommend the DCF as the superior model to the CAPM.

18 **Q. On page 10, Mr. McKenzie stated that "[u]nprecedented Federal Reserve**
19 **monetary policies have placed downward pressure on interest rates, and**
20 **emphasized the need to consider the impact of projected bond yields in evaluating**
21 **the results of quantitative methods." Please address this statement.**

22 A. I would agree that current monetary policy is unprecedented. However, one should
23 not abandon current interest rates altogether, as they represent current investor
24 risk/return requirements for debt instruments, including Treasury and utility debt.
25 Indeed, after increasing sharply in March, utility bond yields have declined

1 significantly as I reported in Section II. This indicates a lower cost of capital for utility
2 debt. Also, a falling cost of utility debt directly translates into a lower risk premium
3 ROE using Mr. McKenzie's risk premium analysis. I will address this in more detail
4 later in this section.

5 **Q. On page 34 of his Direct Testimony, Mr. McKenzie presented Table AMM-3,**
6 **which contains average forecasted interest rates for the 2021 - 2025 time period.**
7 **Please address this data contained in this table.**

8 A. I continue to oppose the use of forecasts of long-term interest rates to measure the
9 ROE using the CAPM and risk premium models. These forecasts are often overstated
10 and should not be given preference over current interest rates. In addition, one of the
11 sources Mr. McKenzie used for his forecasted interest rates in this table is the Value
12 Line Investment Survey, Forecast for the U.S. Economy dated February 28, 2020.
13 This forecast was updated by Value Line in its August 28, 2020 Selection and Opinion
14 publication. For the 2021 - 2024 time period, Value Line now forecasts the following:

- 15 • 10-Year Treasury Note: 0.8% - 1.5%.
- 16 • Long-term Treasury Bond rate: 1.5% - 2.5%.

17
18 Table AMM-3 shows forecasted yields for the 10-Year and 30-Year Treasuries of
19 2.93% and 3.25%, respectively. Obviously, Value Line's updated forecasts no longer
20 support the numbers in Table AMM-3.

21 **Q. Considering the additional risks described by Mr. McKenzie, how does his**
22 **recommended ROE in this case compare to his recommended ROE in KPC's last**
23 **rate case, Case No. 2017-00179?**

24 A. Mr. McKenzie's ROE recommendation in Case No. 2017-00179 was 10.31%, virtually
25 identical to his recommended 10.30% in this case.

1 **DCF Model**

2 **Q. Briefly summarize Mr. McKenzie's approach to the DCF model.**

3 A. In Section III of my Direct Testimony I described Mr. McKenzie's selection criteria
4 for his proxy group. I agreed with his selection of companies except for Dominion
5 Resources and PPL Corp. Mr. McKenzie used several sources of growth rate
6 forecasts, which included IBES, Zacks, and Value Line as well as an estimate of
7 sustainable growth. I agree with Mr. McKenzie's use of analysts' forecasts for growth,
8 although I did not use the sustainable growth calculation.

9

10 In his Exhibit AMM-4, Mr. McKenzie adjusted his DCF ROE results by excluding
11 certain company ROE results that, in his view, were too low. These ROE results
12 ranged from 1.8% to 6.5%. Mr. McKenzie did not exclude any ROE results that were
13 too high and saw fit to include ROE results ranging from 12.0% to 13.6%. After
14 making these exclusions, his resulting DCF range was 8.6% to 9.7% using an average
15 of the remaining results. The midpoints ranged from 8.7% to 10.2%.

16 **Q. Please comment on Mr. McKenzie's approach to formulating his DCF**
17 **recommendation to the Commission.**

18 A. Mr. McKenzie conducted a biased approach in formulating his DCF
19 recommendations. He applied a test for excluding ROE results that, in his view, were
20 too low but failed to exclude other results that are excessively high. For example, the
21 average Commission-allowed ROE for 2019 that was reported by Mr. McKenzie in
22 his Exhibit AMM-8, page 3 of 4, was 9.65%. However, Mr. McKenzie included ROEs
23 in his Exhibit AMM-4 that are 235 - 395 basis points higher than 9.65%. My review
24 of Commission allowed returns contained in Mr. McKenzie's Exhibit AMM-8 reveals

1 that 2002 was the last year that allowed returns on equity were as high as 11% and that
2 the last Commission allowed return near 13% was in 1989.

3
4 It is abundantly clear that Mr. McKenzie's approach to excluding ROE results from
5 his DCF analysis had the effect of inflating his DCF ROE recommendation.

6 **Q. Have you conducted an alternative analysis that includes all the DCF results from**
7 **Mr. McKenzie's Exhibit AMM-4?**

8 A. Yes. Table 5 below presents the average and median ROEs utilizing all the DCF
9 results from Mr. McKenzie's Exhibit AMM-4, page 3 of 4.

<u>Company</u>	<u>V Line</u>	<u>IBES</u>	<u>Zacks</u>	<u>br+sv Growth</u>
Alliant Energy	9.6%	8.8%	8.6%	7.4%
Ameren Corp.	8.8%	9.3%	9.5%	9.0%
American Elec Pwr	8.6%	9.6%	9.3%	8.3%
Avangrid, Inc.	12.6%	10.4%	9.4%	5.6%
Black Hills Corp.	7.0%	9.3%	9.4%	7.3%
CMS Energy Corp.	10.4%	10.2%	9.8%	9.9%
Consolidated Edison	6.8%	6.2%	5.8%	7.0%
Dominion Energy	12.0%	9.9%	9.7%	9.6%
DTE Energy Co.	9.3%	10.2%	9.8%	9.3%
Duke Energy Corp.	10.6%	8.8%	9.3%	7.7%
Entergy Corp.	7.0%	10.0%	9.9%	9.1%
Evergy Inc.	n/a	7.5%	8.6%	6.5%
Eversource Energy	8.3%	8.5%	8.9%	7.6%
Exelon Corp.	12.2%	1.8%	8.2%	8.8%
Fortis Inc.	7.8%	10.4%	11.3%	6.8%
NextEra Energy, Inc.	12.4%	10.2%	10.2%	7.6%
OGE Energy Corp.	9.8%	7.0%	8.7%	8.7%
PPL Corp.	9.3%	7.3%	n/a	12.3%
Pub Sv Enterprise Grp.	10.1%	6.4%	7.5%	9.1%
Sempra Energy	13.6%	7.8%	10.4%	11.0%
Southern Company	8.7%	9.0%	8.7%	8.9%
WEC Energy Group	8.8%	8.8%	8.8%	7.0%
Xcel Energy Inc.	<u>8.8%</u>	<u>8.2%</u>	<u>8.6%</u>	<u>7.8%</u>
Average	9.7%	8.5%	9.1%	8.4%
Median	9.3%	8.8%	9.3%	8.3%

10
11 Rather than arbitrarily excluding low-end results and keeping implausibly high results,
12 I recommend that the median be used as an alternative measure of central tendency.

13 As I testified in Section III, the median is not affected by extremely high or low ROE

1 results, but instead represents the middle value of the data set. If there are concerns
2 about results that are either too high or too low, the median may be used as an
3 additional reference for the investor required ROE.

4
5 Table 5 shows that when all results are considered, the average and median results
6 from Mr. McKenzie's Exhibit AMM-5 are closer to my DCF results.

7 **Q. Mr. McKenzie applied a low-end threshold adjustment based on Orders from the**
8 **Federal Energy Regulatory Commission ("FERC") as well as a risk premium**
9 **adjustment that purports to incorporate lower current bond yields. Should the**
10 **Commission adopt this adjustment?**

11 A. No. Selectively eliminating so-called low-end DCF results without any consideration
12 of also eliminating implausibly high results will lead to an outcome that is biased and
13 overstated. I strongly recommend that the Commission reject Mr. McKenzie's
14 approach.

15 CAPM and ECAPM

16 **Q. Beginning on page 64 of his Direct Testimony, Mr. McKenzie described the**
17 **Empirical CAPM ("ECAPM") analysis he employed as an alternative to the**
18 **traditional CAPM. Is this a reasonable method to use to estimate the investor**
19 **required ROE for KPC?**

20 A. No. The ECAPM is designed to account for the possibility that the CAPM understates
21 the return on equity for companies with betas less than 1.0. Mr. McKenzie explained
22 on page 65 of his Direct Testimony how he applied the adjustment to his CAPM data,
23 which was based on the formula included in *New Regulatory Finance* by Dr. Roger
24 Morin.

25

1 The argument that an adjustment factor is needed to “correct” the CAPM results for
2 companies with betas less than 1.0 is further evidence of the lack of accuracy inherent
3 in the CAPM itself and with beta in particular, as I pointed out earlier in my Direct
4 Testimony. The ECAPM adjustment also suggests that published betas by such
5 sources as Value Line are incorrect and that investors should not rely on them in
6 formulating their estimates using the CAPM. In fact, Mr. McKenzie testified on page
7 62, lines 13 through 15 of his Direct Testimony that Value Line is “the most widely
8 referenced source for beta in regulatory proceedings.” Finally, although Mr.
9 McKenzie cited the source of the ECAPM formula he used, he provided no evidence
10 that investors favor this version of the ECAPM over the standard CAPM.

11 **Q. Please continue your evaluation of the results of Mr. McKenzie’s CAPM and**
12 **ECAPM analysis.**

13 A. I disagree with Mr. McKenzie’s general formulation of the CAPM and ECAPM and
14 in particular with his estimate of the expected market return. He estimated the market
15 return portion of the CAPM and ECAPM by estimating the current market return for
16 dividend paying stocks in the S&P 500. The market return portion of the CAPM
17 should represent the most comprehensive estimate of the total return for all investment
18 alternatives, not just a small subset of publicly traded stocks that pay dividends. In
19 practice, of course, finding such an estimate is difficult and is one of the thornier
20 problems in estimating an accurate ROE when using the CAPM. If one limits the
21 market return to stocks, then there are more comprehensive measures of the stock
22 market available, such as the Value Line Investment Survey that I used in my CAPM
23 analysis. Value Line's projected earnings growth used a sample of 1,738 stocks and
24 its book value growth estimate used 1,486 stocks. Value Line's projected annual

1 percentage return included 1,653 stocks. These are much broader samples than Mr.
2 McKenzie's limited sample of dividend paying stocks from the S&P 500.

3 **Q. Did Mr. McKenzie overstate the expected market return component of the**
4 **CAPM and ECAPM.**

5 A. Yes. My forward-looking market returns show an expected return on the market of
6 11.05%, far less than the 12.5% expected return result for the limited sample of
7 companies Mr. McKenzie used for his ECAPM and CAPM market return. I
8 acknowledge that Mr. McKenzie's expected market return does fall within the range
9 of market returns I used in my analysis.

10 **Q. Beginning on page 62 of his Direct Testimony, Mr. McKenzie explained that he**
11 **incorporated a size adjustment to his CAPM and ECAPM results. This increased**
12 **his average CAPM results by about 26 basis points, or 0.26%. Is this size**
13 **adjustment appropriate?**

14 A. No. The data that Mr. McKenzie relied upon to make this adjustment came from the
15 2020 Decile Size Study - Supplementary Data Exhibits, Cost of Capital Navigator
16 published by Duff and Phelps. The groups of companies from which he took this
17 significant upward adjustment to his CAPM and ECAPM results contain many
18 unregulated companies. Further, the decile groups from which these adjustments were
19 taken had average betas ranging from 0.92 to 1.17¹¹. These betas are greater than my
20 utility proxy group average beta of 0.87, indicating that the unregulated companies
21 that Mr. McKenzie used to make his size adjustment are riskier than regulated utilities.
22 There is no evidence to suggest that the size premium used by Mr. McKenzie applies

¹¹ Duff and Phelps, 2020 *CRSP Deciles Size Study - Supplementary Data Exhibits*, Cost of Capital Navigator.

1 to regulated utility companies, which on average are quite different from the group of
2 companies included in the Duff and Phelps research on size premiums. I recommend
3 that the Commission reject Mr. McKenzie's size premium in the CAPM and ECAPM
4 ROE.

5 **Q. On page 64 of his Direct Testimony, Mr. McKenzie recommended using**
6 **projected bond yields in the CAPM ROE models. Should the Commission use**
7 **forecasted bond yields in its ROE analysis in this proceeding?**

8 A. No. Current interest rates and bond yields embody all the relevant market data and
9 expectations of investors, including expectations of changing future interest rates, in
10 any. Current interest rates present tangible market evidence of investor return
11 requirements today, and these are the interest rates and bond yields that should be used
12 in the CAPM, ECAPM, and in the bond yield plus risk premium analyses.

13
14 As Dr. Roger Morin pointed out in *New Regulatory Finance*:

15 A considerable body of empirical evidence indicates that U.S. capital
16 markets are efficient with respect to a broad set of information,
17 including historical and publicly available information.¹²

18 Dr. Morin also noted the following:

19 There is extensive literature concerning the prediction of interest rates.
20 From this evidence, it appears that the no-change model of interest rates
21 frequently provides the most accurate forecasts of future interest rates
22 while at other times, the experts are more accurate. Naïve
23 extrapolations of current interest rates frequently outperform published
24 forecasts. The literature suggests that on balance, the bond market is
25 very efficient in that it is difficult to consistently forecast interest rates
26 with greater accuracy than a no-change model. The latter model
27 provides similar, and in some cases, superior accuracy than

¹² Morin, Roger A., *New Regulatory Finance*, Public Utilities Reports, Inc. (2006) at 279.

1 professional forecasts.¹³

2 It is important to realize that investor expectations of changes in future interest rates,
3 if any, are likely already embodied in current securities prices, which include debt
4 securities and stock prices. Moreover, as a practical matter Mr. McKenzie's forecasted
5 30-Year Treasury Bond yield of 3.2% is so far above current 30-Year Treasury yields
6 that it is highly unlikely investors expect this yield in the near term.

7 **Q. What does a 3.2% forecasted interest rate suggest with regards to investors**
8 **holding 30-year Treasury bonds currently?**

9 A. It suggests that investors today are expecting to incur huge losses in the value of their
10 investments in long-term Treasury bonds, which makes no economic sense
11 whatsoever.

12
13 The price of a bond moves in the opposite direction of its yield. In other words, given
14 a certain current bond coupon and price, if the required yield on that bond increases
15 then the price of the bond goes down. Alternatively, if the required yield declines,
16 then the price of the bond increases. This relationship can be illustrated with the
17 following simplified example. Assume a current 30-year Treasury bond has a coupon
18 of \$1.40 and a price of \$100, resulting in a current yield of 1.40%. This is the
19 approximate six-month average yield for 30-year Treasury bonds I used in my CAPM
20 analyses. If interest rates were to rise in the economy such that the required yield on
21 the 30-year Treasury increased to 3.2%, then the price of our existing 30-year Treasury

¹³ *Id.* at 172.

1 bond would fall to \$43.75 from \$100, given the coupon of \$1.40. This represents a
2 capital loss to our bond investor of 56.25%.

3
4 The point here is that if investors were certain that there would soon be a substantial
5 increase in interest rates, the rational response would be to immediately discount what
6 they were willing to pay currently for the 30-year Treasury bond rather than pay \$100
7 and suffer certain significant losses to the value of their bonds. The fact that the 30-
8 Year Treasury bond is currently yielding about 1.40% suggests that investors do not
9 expect Treasury Bonds yields to drastically increase and, as a result, cause dramatic
10 losses in their investments.

11 **Q. Wouldn't this also be the case with the 2.5% normalized risk-free rate that you**
12 **used?**

13 A. Yes, to an extent it would be. The Duff and Phelps normalized risk-free rate attempts
14 to capture a risk free rate plus expected inflation and it was my intention to offer this
15 2.5% rate as an additional source of information for the CAPM calculations. Duff
16 and Phelps actually lowered its normalized risk-free rate this year from 3.0% to 2.5%
17 and it is my view that it offers a superior alternative to the dated 3.2% forecasted 30-
18 Year Treasury yield used by Mr. McKenzie. I also note that the current six-month
19 average 30-Year Treasury yield of 1.40% is much lower than the 1.9% current yield
20 used by Mr. McKenzie in his analyses.

21 **Utility Risk Premium**

22 **Q. Please summarize Mr. McKenzie's utility risk premium approach.**

1 A. Mr. McKenzie developed an historical risk premium using Commission-allowed
2 returns for regulated utility companies from 1974 through 2019. He also used
3 regression analysis to estimate the value of the inverse relationship between interest
4 rates and risk premiums during that period. On page 71 of his Direct Testimony, Mr.
5 McKenzie calculated the risk premium ROE to be 9.60% using the current yield on
6 Baa utility bonds. Using a forecasted utility bond yield of 5.09%, the resulting risk
7 premium ROE was 10.46%.

8 **Q. Please respond to the Company witnesses' risk premium analysis.**

9 A. Generally, the bond yield plus risk premium approach is imprecise and can only
10 provide very general guidance on the current authorized ROE for a regulated electric
11 utility. Risk premiums can change substantially over time and with varying risk
12 perceptions of investors. As such, this approach is a "blunt instrument", if you will,
13 for estimating the ROE in regulated proceedings. In my view, a properly formulated
14 DCF model using current stock prices and growth forecasts is far more reliable and
15 accurate than the bond yield plus risk premium approach, which relies on an historical
16 risk premium analysis over a certain period of time.

17

18 Furthermore, Mr. McKenzie's 10.46% risk premium ROE was inflated by using a
19 forecasted utility bond yield of 5.09%. This bond yield is grossly overstated and
20 exceeds the August 2019 Baa Mergent utility bond yield of 3.06% by 203 basis points,
21 or 2.03%. Looking at this another way, Mr. McKenzie's forecasted 5.09% Baa utility
22 bond yield is 66% higher than the current Baa utility bond yield. I strongly recommend

1 that the Commission reject this unreasonable forecasted Baa bond yield used by Mr.
2 McKenzie.

3 **Q. What would Mr. McKenzie's risk premium ROE result be using the current**
4 **3.06% Baa utility bond yield from Mergent?**

5 A. I calculate that the risk premium ROE using Mr. McKenzie's methodology would be
6 9.16%. Please refer to Exhibit No. ____ (RAB-7) for the supporting calculations.

7 **Expected Earnings Approach**

8 **Q. Beginning on page 74 of his Direct Testimony, Mr. McKenzie presented an**
9 **expected earnings approach based on expected returns on equity using Value**
10 **Line's rates of return on common equity for electric utilities over its forecast**
11 **horizon. Is this a reasonable method for estimating the current required return**
12 **on equity in this proceeding?**

13 A. No. The Commission should not rely on forecasted utility ROEs for the same reasons
14 that it should not rely on interest rate forecasts. These forecasted ROEs have little
15 value in today's market, especially considering that current DCF returns are
16 significantly lower than these forecasts. Recent allowed ROEs for electric utilities
17 averaged 9.60% in 2018 and 9.65% in 2019. EEI also reported in its 2020 2nd Quarter
18 Rate Review that the average allowed ROEs for the 1st and 2nd quarters of 2020 were
19 9.58% and 9.52%, respectively. Compare these actual allowed ROEs to the "adjusted
20 ROEs" in Mr. McKenzie's expected earnings model, which range from 10.6% to
21 11.0%. The adjusted expected ROEs presented by Mr. McKenzie are so far removed
22 from recent allowed returns that the Commission should reject them out of hand.

23 **Flotation Costs**

1 **Q. Beginning on page 74 of his Direct Testimony, Mr. McKenzie discussed flotation**
2 **costs. Are flotation costs a legitimate consideration for the Commission's**
3 **determination of ROE in this proceeding?**

4 A. No. Mr. McKenzie recommended that the Commission consider adding an adjustment
5 of 10 basis points to recognize flotation costs. A flotation cost adjustment attempts to
6 recognize and collect the costs of issuing common stock. Such costs typically include
7 legal, accounting, and printing costs as well as well as broker fees and discounts.

8
9 In my opinion, it is likely that flotation costs are already accounted for in current stock
10 prices and that adding an adjustment for flotation costs amounts to double counting. A
11 DCF model using current stock prices should already account for investor expectations
12 regarding the collection of flotation costs. Multiplying the dividend yield by a 4%
13 flotation cost adjustment, for example, essentially assumes that the current stock price is
14 wrong and that it must be adjusted downward to increase the dividend yield and the
15 resulting cost of equity. This is an appropriate assumption regarding investor
16 expectations. Current stock prices most likely already account for flotation costs, to the
17 extent that such costs are even accounted for by investors.

18 **Non-Utility Benchmark**

19 **Q. Beginning of page 79 of his Direct Testimony, Mr. McKenzie presented the results**
20 **of a low-risk non-utility DCF model. Is it appropriate to use a group of**
21 **unregulated companies to estimate a fair return on equity for KPC?**

22 A. No. Mr. McKenzie's use of unregulated non-utility companies to estimate a fair rate
23 of return for KPC is completely inappropriate and should be rejected by the
24 Commission.

25

1 Utilities have protected markets, e.g. service territories, and may increase the prices
2 they charge in the face of falling demand or loss of customers. They also have the
3 ability to raise prices in the face of the current COVID-19 pandemic, a luxury that
4 many industries certainly do not have. This is contrary to competitive, unregulated
5 companies who often lower their prices when demand for their products decline.
6 Obviously, the non-utility companies face risks that a lower risk electric company like
7 KPC does not face. As a consequence, non-utility companies will have higher required
8 returns from their shareholders. The average DCF results for Mr. McKenzie's non-
9 utility group range from 9.5% - 10.5%. The midpoint results range from 10.6% -
10 18.8%. These results are substantially greater than the utility proxy group DCF results
11 for both myself and Mr. McKenzie and shows that investors expect higher return for
12 this group of unregulated companies.

13
14 Although Mr. McKenzie stated that he did not directly consider the non-utility group
15 DCF results in arriving at this recommendation, he stated that it was "an important
16 benchmark in evaluating a fair and reasonable ROE for Kentucky Power." (McKenzie
17 Direct Testimony, page 82, Lines 17 - 19). I disagree. The relevant consideration
18 should be the DCF results for the proxy group that I employed in my analysis.

19 **Q. Does this complete your Direct Testimony?**

20 **A. Yes.**

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

**ELECTRONIC APPLICATION OF KENTUCKY)
POWER COMPANY FOR (1) A GENERAL)
ADJUSTMENT OF ITS RATES FOR ELECTRIC)
SERVICE; (2) APPROVAL OF TARIFFS AND)
RIDERS; (3) APPROVAL OF ACCOUNTING)
PRACTICES TO ESTABLISH REGULATORY) CASE NO. 2020-00174
ASSETS AND LIABILITIES; (4) APPROVAL OF)
A CERTIFICATE OF PUBLIC CONVENIENCE)
AND NECESSITY; AND (5) ALL OTHER)
REQUIRED APPROVALS AND RELIEF)**

**EXHIBITS
OF
RICHARD A. BAUDINO**

ON BEHALF OF

**THE KENTUCKY OFFICE OF THE ATTORNEY GENERAL
KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.**

**J. KENNEDY AND ASSOCIATES, INC.
ROSWELL, GEORGIA**

OCTOBER 2020

RESUME OF RICHARD A. BAUDINO

EDUCATION

New Mexico State University, M.A.

Major in Economics
Minor in Statistics

New Mexico State University, B.A.

Economics
English

Thirty-seven years of experience in utility ratemaking and the application of principles of economics to the regulation of electric, gas, and water utilities. Broad based experience in revenue requirement analysis, cost of capital, rate of return, cost and revenue allocation, and rate design.

REGULATORY TESTIMONY

Preparation and presentation of expert testimony in the areas of:

Cost of Capital for Electric, Gas and Water Companies
Electric, Gas, and Water Utility Cost Allocation and Rate Design
Revenue Requirements
Gas and Electric industry restructuring and competition
Fuel cost auditing
Ratemaking Treatment of Generating Plant Sale/Leasebacks

RESUME OF RICHARD A. BAUDINO

EXPERIENCE

1989 to

Present: Kennedy and Associates: **Director of Consulting, Consultant** - Responsible for consulting assignments in revenue requirements, rate design, cost of capital, economic analysis of generation alternatives, electric and gas industry restructuring/competition and water utility issues.

1982 to

1989: New Mexico Public Service Commission Staff: **Utility Economist** - Responsible for preparation of analysis and expert testimony in the areas of rate of return, cost allocation, rate design, finance, phase-in of electric generating plants, and sale/leaseback transactions.

CLIENTS SERVED

Regulatory Commissions

Louisiana Public Service Commission
Georgia Public Service Commission
New Mexico Public Service Commission

Other Clients and Client Groups

Ad Hoc Committee for a Competitive Electric Supply System	Northwest Arkansas Gas Consumers
Air Products and Chemicals, Inc.	Maryland Energy Group
Arkansas Electric Energy Consumers	Occidental Chemical
Arkansas Gas Consumers	PSI Industrial Group
AK Steel	Large Power Intervenors (Minnesota)
Armco Steel Company, L.P.	Tyson Foods
Aqua Large Users Group	West Virginia Energy Users Group
Assn. of Business Advocating Tariff Equity	The Commercial Group
Atmos Cities Steering Committee	Wisconsin Industrial Energy Group
Canadian Federation of Independent Businesses	South Florida Hospital and Health Care Assn.
CF&I Steel, L.P.	PP&L Industrial Customer Alliance
Cities of Midland, McAllen, and Colorado City	Philadelphia Area Industrial Energy Users Gp.
Cities Served by Texas-New Mexico Power Co.	Philadelphia Large Users Group
Cities Served by AEP Texas	West Penn Power Intervenors
City of New York	Duquesne Industrial Intervenors
Climax Molybdenum Company	Met-Ed Industrial Users Gp.
Connecticut Industrial Energy Consumers	Penelec Industrial Customer Alliance
Crescent City Power Users Group	Penn Power Users Group
Cripple Creek & Victor Gold Mining Co.	Columbia Industrial Intervenors
General Electric Company	U.S. Steel & Univ. of Pittsburg Medical Ctr.
Holcim (U.S.) Inc.	Multiple Intervenors
IBM Corporation	Maine Office of Public Advocate
Industrial Energy Consumers	Missouri Office of Public Counsel
Kentucky Industrial Utility Consumers	University of Massachusetts - Amherst
Kentucky Office of the Attorney General	WCF Hospital Utility Alliance
Lexington-Fayette Urban County Government	West Travis County Public Utility Agency
Large Electric Consumers Organization	Steering Committee of Cities Served by Oncor
Newport Steel	Utah Office of Consumer Services
North Carolina Attorney General's Office	Healthcare Council of the National Capital Area
	Vermont Department of Public Service
	Texas Industrial Energy Consumers

**Expert Testimony Appearances
of
Richard A. Baudino
As of October 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
10/83	1803, 1817	NM	New Mexico Public Service Commission	Southwestern Electric Coop.	Rate design.
11/84	1833	NM	New Mexico Public Service Commission Palo Verde	El Paso Electric Co.	Service contract approval, rate design, performance standards for nuclear generating system
1983	1835	NM	New Mexico Public Service Commission	Public Service Co. of NM	Rate design.
1984	1848	NM	New Mexico Public Service Commission	Sangre de Cristo Water Co.	Rate design.
02/85	1906	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
09/85	1907	NM	New Mexico Public Service Commission	Jomada Water Co.	Rate of return.
11/85	1957	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
04/86	2009	NM	New Mexico Public Service Commission	El Paso Electric Co.	Phase-in plan, treatment of sale/leaseback expense.
06/86	2032	NM	New Mexico Public Service Commission	El Paso Electric Co.	Sale/leaseback approval.
09/86	2033	NM	New Mexico Public Service Commission	El Paso Electric Co.	Order to show cause, PVNGS audit.
02/87	2074	NM	New Mexico Public Service Commission	El Paso Electric Co.	Diversification.
05/87	2089	NM	New Mexico Public Service Commission	El Paso Electric Co.	Fuel factor adjustment.
08/87	2092	NM	New Mexico Public Service Commission	El Paso Electric Co.	Rate design.
10/87	2146	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Financial effects of restructuring, reorganization.
07/88	2162	NM	New Mexico Public Service Commission	El Paso Electric Co.	Revenue requirements, rate design, rate of return.

**Expert Testimony Appearances
of
Richard A. Baudino
As of October 2020**

Date	Case	Jurisdiction	Party	Utility	Subject
01/89	2194	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Economic development.
1/89	2253	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Financing.
08/89	2259	NM	New Mexico Public Service Commission	Homestead Water Co.	Rate of return, rate design.
10/89	2262	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Rate of return.
09/89	2269	NM	New Mexico Public Service Commission	Ruidoso Natural Gas Co.	Rate of return, expense from affiliated interest.
12/89	89-208-TF	AR	Arkansas Electric Energy Consumers	Arkansas Power & Light Co.	Rider M-33.
01/90	U-17282	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
09/90	90-158	KY	Kentucky Industrial Utility Consumers	Louisville Gas & Electric Co.	Cost of equity.
09/90	90-004-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Cost of equity, transportation rate.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
04/91	91-037-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Transportation rates.
12/91	91-410-EL-AIR	OH	Air Products & Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Cost of equity.
05/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Cost of equity, rate of return.
09/92	92-032-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost of equity, rate of return, cost-of-service.
09/92	39314	ID	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co.	Cost of equity, rate of return.

**Expert Testimony Appearances
of
Richard A. Baudino
As of October 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
09/92	92-009-U	AR	Tyson Foods	General Waterworks	Cost allocation, rate design.
01/93	92-346	KY	Newport Steel Co.	Union Light, Heat & Power Co.	Cost allocation.
01/93	39498	IN	PSI Industrial Group	PSI Energy	Refund allocation.
01/93	U-10105	MI	Association of Businesses Advocating Tariff Equality (ABATE)	Michigan Consolidated Gas Co.	Return on equity.
04/93	92-1464-EL-AIR	OH	Air Products and Chemicals, Inc., Armco Steel Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Return on equity.
09/93	93-189-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Transportation service terms and conditions.
09/93	93-081-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost-of-service, transportation rates, rate supplements; return on equity; revenue requirements.
12/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Historical reviews; evaluation of economic studies.
03/94	10320	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Trimble County CWIP revenue refund.
4/94	E-015/GR-94-001	MN	Large Power Intervenors	Minnesota Power Co.	Evaluation of the cost of equity, capital structure, and rate of return.
5/94	R-00942993	PA	PG&W Industrial Intervenors	Pennsylvania Gas & Water Co.	Analysis of recovery of transition costs.
5/94	R-00943001	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania charge proposals.	Evaluation of cost allocation, rate design, rate plan, and carrying
7/94	R-00942986	PA	Armco, Inc., West Penn Power Industrial Intervenors	West Penn Power Co.	Return on equity and rate of return.
7/94	94-0035-E-42T	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Return on equity and rate of return.

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8/94	8652	MD	Westvaco Corp. Co.	Potomac Edison	Return on equity and rate of return.
9/94	930357-C	AR	West Central Arkansas Gas Consumers	Arkansas Oklahoma Gas Corp.	Evaluation of transportation service.
9/94	U-19904	LA	Louisiana Public Service Commission	Gulf States Utilities	Return on equity.
9/94	8629	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Transition costs.
11/94	94-175-U	AR	Arkansas Gas Consumers	Arkla, Inc.	Cost-of-service, rate design, rate of return.
3/95	RP94-343- 000	FERC	Arkansas Gas Consumers	NorAm Gas Transmission	Rate of return.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Return on equity.
6/95	U-10755	MI	Association of Businesses Advocating Tariff Equity	Consumers Power Co.	Revenue requirements.
7/95	8697	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Cost allocation and rate design.
8/95	95-254-TF U-2811	AR	Tyson Foods, Inc.	Southwest Arkansas Electric Cooperative	Refund allocation.
10/95	ER95-1042 -000	FERC	Louisiana Public Service Commission	Systems Energy Resources, Inc.	Return on Equity.
11/95	I-940032	PA	Industrial Energy Consumers of Pennsylvania	State-wide - all utilities	Investigation into Electric Power Competition.
5/96	96-030-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Revenue requirements, rate of return and cost of service.
7/96	8725	MD	Maryland Industrial Group	Baltimore Gas & Electric Co., Potomac Electric Power Co. and Constellation Energy Corp.	Return on Equity.
7/96	U-21496	LA	Louisiana Public Service Commission	Central Louisiana Electric Co.	Return on equity, rate of return.
9/96	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.

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1/97	RP96-199-000	FERC	The Industrial Gas Users Conference	Mississippi River Transmission Corp.	Revenue requirements, rate of return and cost of service.
3/97	96-420-U	AR	West Central Arkansas Gas Corp.	Arkansas Oklahoma Gas Corp.	Revenue requirements, rate of return, cost of service and rate design.
7/97	U-11220	MI	Association of Business Advocating Tariff Equity	Michigan Gas Co. and Southeastern Michigan Gas Co.	Transportation Balancing Provisions.
7/97	R-00973944	PA	Pennsylvania American Water Large Users Group	Pennsylvania-American Water Co.	Rate of return, cost of service, revenue requirements.
3/98	8390-U	GA	Georgia Natural Gas Group and the Georgia Textile Manufacturers Assoc.	Atlanta Gas Light	Rate of return, restructuring issues, unbundling, rate design issues.
7/98	R-00984280	PA	PG Energy, Inc. Intervenors	PGE Industrial	Cost allocation.
8/98	U-17735	LA	Louisiana Public Service Commission	Cajun Electric Power Cooperative	Revenue requirements.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric Co.	Return on equity, rate of return.
10/98	U-23327	LA	Louisiana Public Service Commission	SWEPSCO, CSW and AEP	Analysis of proposed merger.
12/98	98-577	ME	Maine Office of the Public Advocate	Maine Public Service Co.	Return on equity, rate of return.
12/98	U-23358	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity, rate of return.
3/99	98-426	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co	Return on equity.
3/99	99-082	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Return on equity.
4/99	R-984554	PA	T. W. Phillips Users Group	T. W. Phillips Gas and Oil Co.	Allocation of purchased gas costs.
6/99	R-0099462	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Balancing charges.
10/99	U-24182	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Cost of debt.

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10/99	R-00994782	PA	Peoples Industrial Intervenor	Peoples Natural Gas Co.	Restructuring issues.
10/99	R-00994781	PA	Columbia Industrial Intervenor	Columbia Gas of Pennsylvania	Restructuring, balancing charges, rate flexing, alternate fuel.
01/00	R-00994786	PA	UGI Industrial Intervenor	UGI Utilities, Inc.	Universal service costs, balancing, penalty charges, capacity Assignment.
01/00	8829	MD	Maryland Industrial Gr.	Baltimore Gas & Electric Co.	Revenue requirements, cost allocation, rate design.
02/00	R-00994788	PA	Penn Fuel Transportation	PFG Gas, Inc., and	Tariff charges, balancing provisions.
05/00	U-17735	LA	Louisiana Public Service Comm.	Louisiana Electric Cooperative	Rate restructuring.
07/00	2000-080	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric Co.	Cost allocation.
07/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket E)	LA	Louisiana Public Service Commission	Southwestern Electric Power Co.	Stranded cost analysis.
09/00	R-00005654	PA	Philadelphia Industrial And Commercial Gas Users Group.	Philadelphia Gas Works	Interim relief analysis.
10/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring, Business Separation Plan.
11/00	R-00005277 (Rebuttal)	PA	Penn Fuel Transportation Customers	PFG Gas, Inc. and North Penn Gas Co.	Cost allocation issues.
12/00	U-24993	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/01	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Stranded cost analysis.
04/01	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B) (Addressing Contested Issues)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring issues.
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.

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11/01	U-25687	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/02	14311-U	GA	Georgia Public Service Commission	Atlanta Gas Light	Capital structure.
08/02	2002-00145	KY	Kentucky Industrial Utility Customers	Columbia Gas of Kentucky	Revenue requirements.
09/02	M-00021612	PA	Philadelphia Industrial And Commercial Gas Users Group	Philadelphia Gas Works	Transportation rates, terms, and conditions.
01/03	2002-00169	KY	Kentucky Industrial Utility Customers	Kentucky Power	Return on equity.
02/03	02S-594E	CO	Cripple Creek & Victor Gold Mining Company	Aquila Networks – WPC	Return on equity.
04/03	U-26527	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
10/03	CV020495AB	GA	The Landings Assn., Inc.	Utilities Inc. of GA	Revenue requirement & overcharge refund
03/04	2003-00433	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric	Return on equity, Cost allocation & rate design
03/04	2003-00434	KY	Kentucky Industrial Utility Customers	Kentucky Utilities	Return on equity
4/04	04S-035E	CO	Cripple Creek & Victor Gold Mining Company, Goodrich Corp., Holcim (U.S.) Inc., and The Trane Co.	Aquila Networks – WPC	Return on equity.
9/04	U-23327, Subdocket B	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Fuel cost review
10/04	U-23327 Subdocket A	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on Equity
06/05	050045-EI	FL	South Florida Hospital and HealthCare Assoc.	Florida Power & Light Co.	Return on equity
08/05	9036	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Revenue requirement, cost allocation, rate design, Tariff issues.
01/06	2005-0034	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity.

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03/06	05-1278-E-PC-PW-42T	WV	West Virginia Energy Users Group	Appalachian Power Company	Return on equity.
04/06	U-25116 Commission	LA	Louisiana Public Service	Entergy Louisiana, LLC	Transmission Issues
07/06	U-23327 Commission	LA	Louisiana Public Service	Southwestern Electric Power Company	Return on equity, Service quality
08/06	ER-2006-0314	MO	Missouri Office of the Public Counsel	Kansas City Power & Light Co.	Return on equity, Weighted cost of capital
08/06	06S-234EG	CO	CF&I Steel, L.P. & Climax Molybdenum	Public Service Company of Colorado	Return on equity, Weighted cost of capital
01/07	06-0960-E-42T Users Group	WV	West Virginia Energy	Monongahela Power & Potomac Edison	Return on Equity
01/07	43112	AK	AK Steel, Inc.	Vectren South, Inc.	Cost allocation, rate design
05/07	2006-661	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric	Return on equity, weighted cost of capital.
09/07	07-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power	Return on equity, weighted cost of capital
10/07	05-UR-103	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Co.	Return on equity
11/07	29797	LA	Louisiana Public Service Commission	Cleco Power :LLC & Southwestern Electric Power	Lignite Pricing, support of settlement
01/08	07-551-EL-AIR	OH	Ohio Energy Group	Ohio Edison, Cleveland Electric, Toledo Edison	Return on equity
03/08	07-0585, 07-0585, 07-0587, 07-0588, 07-0589, 07-0590, (consol.)	IL	The Commercial Group	Ameren	Cost allocation, rate design
04/08	07-0566	IL	The Commercial Group	Commonwealth Edison	Cost allocation, rate design
06/08	R-2008-2011621	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Cost and revenue allocation, Tariff issues
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues

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07/08	R-2008-2039634	PA	PPL Gas Large Users Group	PPL Gas	Retainage, LUFG Pct.
08/08	6680-UR-116	WI	Wisconsin Industrial Energy Group	Wisconsin P&L	Cost of Equity
08/08	6690-UR-119	WI	Wisconsin Industrial Energy Group	Wisconsin PS	Cost of Equity
09/08	ER-2008-0318	MO	The Commercial Group	AmerenUE	Cost and revenue allocation
10/08	R-2008-2029325	PA	U.S. Steel & Univ. of Pittsburgh Med. Ctr.	Equitable Gas Co.	Cost and revenue allocation
10/08	08-G-0609	NY	Multiple Intervenors	Niagara Mohawk Power	Cost and Revenue allocation
12/08	27800-U	GA	Georgia Public Service Commission	Georgia Power Company	CWIP/AFUDC issues, Review financial projections
03/09	ER08-1056	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Capital Structure
04/09	E002/GR-08-1065	MN	The Commercial Group	Northern States Power	Cost and revenue allocation and rate design
05/09	08-0532	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation
07/09	080677-EI	FL	South Florida Hospital and Health Care Association	Florida Power & Light	Cost of equity, capital structure, Cost of short-term debt
07/09	U-30975	LA	Louisiana Public Service Commission	Cleco LLC, Southwestern Public Service Co.	Lignite mine purchase
10/09	4220-UR-116	WI	Wisconsin Industrial Energy Group	Northern States Power	Class cost of service, rate design
10/09	M-2009-2123945	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Smart Meter Plan cost allocation
10/09	M-2009-2123944	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Company	Smart Meter Plan cost allocation
10/09	M-2009-2123951	PA	West Penn Power Industrial Intervenors	West Penn Power	Smart Meter Plan cost allocation
11/09	M-2009-2123948	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Smart Meter Plan cost allocation
11/09	M-2009-2123950	PA	Met-Ed Industrial Users Group Penelec Industrial Customer Alliance, Penn Power Users Group	Metropolitan Edison, Pennsylvania Electric Co., Pennsylvania Power Co.	Smart Meter Plan cost allocation

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03/10	09-1352-E-42T	WV	West Virginia Energy Users Group	Monongahela Power	Return on equity, rate of return Potomac Edison
03/10	E015/GR-09-1151	MN	Large Power Intervenors	Minnesota Power	Return on equity, rate of return
04/10	2009-00459	KY	Kentucky Industrial Utility Consumers	Kentucky Power	Return on equity
04/10	2009-00548 2009-00549	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
05/10	10-0261-E-GI	WV	West Virginia Energy Users Group	Appalachian Power Co./ Wheeling Power Co.	EE/DR Cost Recovery, Allocation, & Rate Design
05/10	R-2009-2149262	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Class cost of service & cost allocation
06/10	2010-00036	KY	Lexington-Fayette Urban County Government	Kentucky American Water Company	Return on equity, rate of return, revenue requirements
06/10	R-2010-2161694	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Rate design, cost allocation
07/10	R-2010-2161575	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Return on equity
07/10	R-2010-2161592	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Cost and revenue allocation
07/10	9230	MD	Maryland Energy Group	Baltimore Gas and Electric	Electric and gas cost and revenue allocation; return on equity
09/10	10-70	MA	University of Massachusetts-Amherst	Western Massachusetts Electric Co.	Cost allocation and rate design
10/10	R-2010-2179522	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Cost and revenue allocation, rate design
11/10	P-2010-2158084	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Transmission rate design
11/10	10-0699-E-42T	WV	West Virginia Energy Users Group	Appalachian Power Co. & Wheeling Power Co.	Return on equity, rate of Return
11/10	10-0467	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation and rate design
04/11	R-2010-2214415	PA	Central Pen Gas Large Users Group	UGI Central Penn Gas, Inc.	Tariff issues, revenue allocation
07/11	R-2011-2239263	PA	Philadelphia Area Energy Users Group	PECO Energy	Retainage rate

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08/11	R-2011-2232243	PA	AK Steel	Pennsylvania-American Water Company	Rate Design
08/11	11AL-151G	CO	Climax Molybdenum	PS of Colorado	Cost allocation
09/11	11-G-0280	NY	Multiple Intervenors	Corning Natural Gas Co.	Cost and revenue allocation
10/11	4220-UR-117	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
02/12	11AL-947E	CO	Climax Molybdenum, CF&I Steel	Public Service Company of Colorado	Return on equity, weighted cost of capital
07/12	120015-EI	FL	South Florida Hospitals and Health Care Association	Florida Power and Light Co.	Return on equity, weighted cost of capital
07/12	12-0613-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal for Century Aluminum
07/12	R-2012-2290597	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities Corp.	Cost allocation
09/12	05-UR-106	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Class cost of service, cost and revenue allocation, rate design
09/12	2012-00221 2012-00222	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
10/12	9299	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design Cost of equity, weighted cost of capital
10/12	4220-UR-118	WI	Wisconsin Industrial Energy Group	Northern States Power Company	Class cost of service, cost and revenue allocation, rate design
10/12	473-13-0199	TX	Steering Committee of Cities Served by Oncor	Cross Texas Transmission, LLC	Return on equity, capital structure
01/13	R-2012-2321748 et al.	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation
02/13	12AL-1052E	CO	Cripple Creek & Victor Gold Mining, Holcim (US) Inc.	Black Hills/Colorado Electric Utility Company	Cost and revenue allocations
06/13	8009	VT	IBM Corporation	Vermont Gas Systems	Cost and revenue allocation, rate design
07/13	130040-EI	FL	WCF Hospital Utility Alliance	Tampa Electric Co.	Return on equity, rate of return
08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider

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08/13	P-2012-2325034	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities, Corp.	Distribution System Improvement Charge
09/13	4220-UR-119	WI	Wisconsin Industrial Energy Group	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
11/13	13-1325-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal, Felman Production
06/14	R-2014-2406274	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation, rate design
08/14	05-UR-107	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
10/14	ER13-1508 et al.	FERC	Louisiana Public Service Comm.	Entergy Services, Inc.	Return on equity
11/14	14AL-0660E	CO	Climax Molybdenum Co. and CFI Steel, LP	Public Service Co. of Colorado	Return on equity, weighted cost of capital
11/14	R-2014-2428742	PA	AK Steel	West Penn Power Company	Cost and revenue allocation
12/14	42866	TX	West Travis Co. Public Utility Agency	Travis County Municipal Utility District No. 12	Response to complain of monopoly power
3/15	2014-00371 2014-00372	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
3/15	2014-00396	KY	Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity, weighted cost of capital
6/15	15-0003-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Cost and revenue allocation, Infrastructure Replacement Program
9/15	15-0676-W-42T	WV	West Virginia Energy Users Gp.	West Virginia-American Water Company	Appropriate test year, Historical vs. Future
9/15	15-1256-G-390P	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Rate design for Infrastructure Replacement and Expansion Program
10/15	4220-UR-121	WI	Wisconsin Industrial Energy Gp.	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
12/15	15-1600-G-390P	WV	West Virginia Energy Users Gp.	Dominion Hope	Rate design and allocation for Pipeline Replacement & Expansion Prog.
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital

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2/16	9406	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design, proposed Rider 5
3/16	39971	GA	GA Public Service Comm. Staff	Southern Company / AGL Resources	Credit quality and service quality issues
04/16	2015-00343	KY	Kentucky Office of the Attorney General	Atmos Energy	Cost of equity, cost of short-term debt, capital structure
05/16	16-G-0058 16-G-0059	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, service quality issues
06/16	16-0073-E-C	WV	Constellium Rolled Products Ravenswood, LLC	Appalachian Power Co.	Complaint; security deposit
07/16	9418	MD	Healthcare Council of the National Capital Area	Potomac Electric Power Co.	Cost of equity, cost of service, Cost and revenue allocation
07/16	160021-EI	FL	South Florida Hospital and Health Care Association	Florida Power and Light Co.	Return on equity, cost of debt, capital structure
07/16	16-057-01	UT	Utah Office of Consumer Svcs.	Dominion Resources, Questar Gas Co.	Credit quality and service quality issues
08/16	8710	VT	Vermont Dept. of Public Service	Vermont Gas Systems	Return on equity, cost of debt, cost of capital
08/16	R-2016-2537359	PA	AK Steel Corp.	West Penn Power Co.	Cost and revenue allocation
09/16	2016-00162	KY	Kentucky Office of the Attorney General	Columbia Gas of Ky.	Return on equity, cost of short-term debt
09/16	16-0550-W-P	WV	West Va. Energy Users Gp.	West Va. American Water Co.	Infrastructure Replacement Program Surcharge
01/17	46238	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring fencing and other conditions for acquisition, service quality and reliability
02/17	45414	TX	Cities of Midland, McAllen, and Colorado City	Sharyland Utilities, LP and Sharyland Dist. and Transmission Services, LLC	Return on equity
02/17	2016-00370 2016-00371	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
03/17	10580	TX	Atmos Cities Steering Committee	Atmos Pipeline Texas	Return on equity, capital structure, weighted cost of capital
03/17	R-3867-2013	Quebec, Canada	Canadian Federation of Independent Businesses	Gaz Metro	Marginal Cost of Service Study

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05/17	R-2017-2586783	PA	Philadelphia Industrial and Commercial Gas Users Gp.	Philadelphia Gas Works	Cost and revenue allocation, rate design, Interruptible tariffs
08/17	R-2017-2595853	PA	AK Steel	Pennsylvania American Water Co.	Cost and revenue allocation, rate design
8/17	17-3112-INV	VT	Vt. Dept. of Pubic Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
9/17	4220-UR-123	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
10/17	2017-00179	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity, cost of short-term debt
12/17	2017-00321	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
1/18	2017-00349	KY	Office of the Attorney General	Atmos Energy	Return on equity, cost of debt, weighted cost of capital
5/18	Fiscal Years 2019-2021 Rates	PA	Philadelphia Large Users Group	Philadelphia Water Department	Cost and revenue allocation
8/18	18-0974-TF	VT	Vt. Dept. of Public Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
8/18	48401	TX	Cities Served by Texas-New Mexico Power Company	Texas-New Mexico Power Co.	Return on equity, capital structure
8/18	18-05-16	CT	Connecticut Industrial Energy Consumers	Connecticut Natural Gas Co.	Cost and revenue allocation
9/18	9484	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design
9/18	2017-370-E	SC	South Carolina Office of Regulatory Staff	South Carolina Electric & Gas, Dominion Resources, SCANA	Return on equity, service quality standards, credit quality conditions
10/18	18-1115-G-390P	WV	West Va. Energy Users Group	Mountaineer Gas Company	Customer protections for Infrastructure Replacement and Expansion Program
12/18	R-2018-3003558, R-2018-3003561	PA	Aqua Large Users Group	Aqua Pennsylvania, Inc.	Cost and revenue allocation
02/19	UD-18-07	CCNO	Crescent City Power Users' Gp.	Entergy New Orleans, LLC	Return on equity, Reliability Incentive Mechanism, other proposed riders
03/19	2018-00358	KY	Office of the Attorney General	Kentucky American Water Co.	Return on equity, Qualified Infrastructure Program rider
05/19	19-E-0065 19-G-0066	NY	City of New York	Consolidated Edison Co.	Cost and revenue allocation, rate design, tariff issues, fast-charging station incentives

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05/2019	19-0513-TF	VT	Vt. Dept. of Public Service	Vermont Gas Systems	Return on equity, capital structure
06/2019	5-TG-100	WI	Wisconsin Industrial Energy Group	WEPCO, Wisconsin Gas, Wisconsin PS	Transportation and balancing issues
07/2019	49494	TX	Cities Served by AEP Texas	AEP Texas, Inc.	Return on equity, capital structure
08/2019	19-G-0309 19-G-0310	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, tariff issues and modifications
08/2019	19-0316-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Company	Cost and revenue allocation
8/2019	5-UR-109	WI	Wisconsin Industrial Energy Gp.	Wisconsin Electric Power Co., Wisconsin Gas, LLC	Cost Allocation, Class cost of service study
8/2019	6690-UR-126	WI	Wisconsin Industrial Energy Gp.	Wisconsin Public Service Corp.	Cost Allocation, Class cost of service study
9/2019	9610	MD	Maryland Energy Group	Baltimore Gas and Electric Co.	Cost and revenue allocation, rate design
12/2019	2019-00271	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
2/2020	49831	TX	Texas Industrial Energy Consumers	Southwestern Public Service Co.	Return on equity, capital structure, rate of return
2/2020	E-7. Sub 1214	NC	NC Attorney General's Office	Duke Energy Carolinas	Return on equity, capital structure, rate of return, economic conditions
2/2020	E-2. Sub 1219	NC	NC Attorney General's Office	Duke Energy Progress	Return on equity, capital structure, rate of return, economic conditions
5/2020	R-2019- 3015162	PA	Industrial Energy Consumers of Pennsylvania	UGI Utilities, Inc.	Return on equity, cost of debt, revenue allocation, rate design
6/2020	20-G-0101	NY	Multiple Intervenors	Corning Natural Gas Corp.	Cost and revenue allocation
9/2020	R-2020- 2019369	PA	AK Steel	Pennsylvania-American Water Company	Cost and revenue allocation, rate design
9/2020	20-035-04	UT	The Kroger Co.	Rocky Mountain Power	Cost and revenue allocation, rate design
10/2020	2020-000174	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Kentucky Power Co.	Return on equity

**AMERICAN
ELECTRIC
POWER**

BOUNDLESS ENERGY™



UBS Roadshow
September 17, 2020

Strong Profile for Investors



Incentive Comp Tied to EPS

Investment Pipeline

Steady Growth

TOTAL SHAREHOLDER RETURN

~3%

DIVIDEND YIELD

5%-7% CAGR

5%-7%

EPS GROWTH

2020 Operating Earnings

Guidance

\$4.25-\$4.45 per share

Consistent Dividends

Low Risk, Regulated Assets

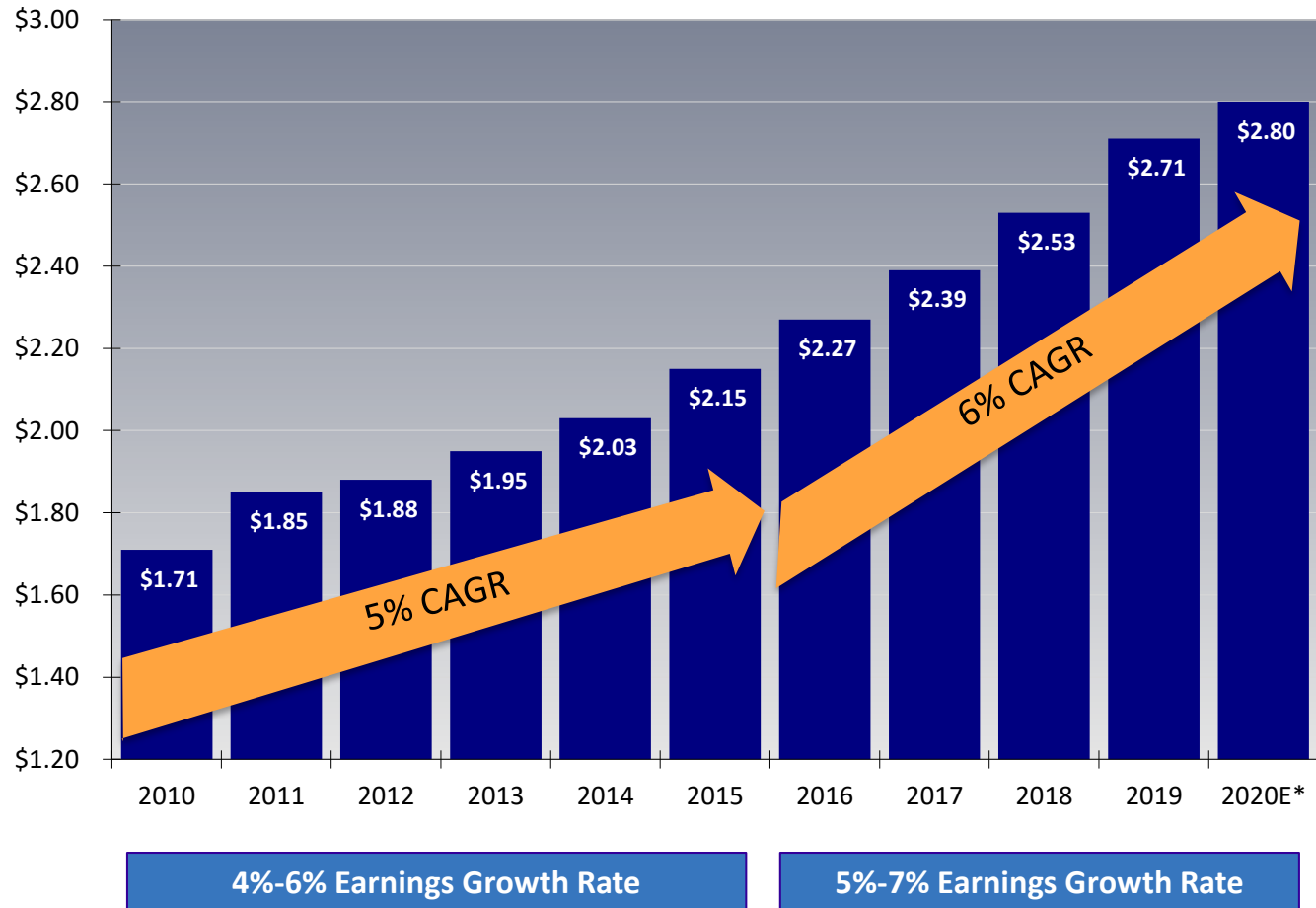


Strong Dividend Growth

Targeted payout ratio
60-70% of operating earnings

Over 110 years of consecutive quarterly dividends

Targeted dividend growth in line with earnings



EPS Growth + Dividend Yield = 8% to 10% Annual Return Opportunity

* Subject to Board approval

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Alliant Energy Corp.	High Price (\$)	54.450	49.720	52.470	54.110	55.600	55.150
	Low Price (\$)	43.610	44.360	46.150	47.520	52.220	48.890
	Avg. Price (\$)	49.030	47.040	49.310	50.815	53.910	52.020
	Dividend (\$)	0.380	0.380	0.380	0.380	0.380	0.380
	Mo. Avg. Div.	3.10%	3.23%	3.08%	2.99%	2.82%	2.92%
	6 mos. Avg.	3.02%					
Ameren Corp.	High Price (\$)	81.250	75.270	77.420	81.310	83.960	81.180
	Low Price (\$)	65.900	66.330	67.140	70.260	77.650	75.270
	Avg. Price (\$)	73.575	70.800	72.280	75.785	80.805	78.225
	Dividend (\$)	0.495	0.495	0.495	0.495	0.495	0.495
	Mo. Avg. Div.	2.69%	2.80%	2.74%	2.61%	2.45%	2.53%
	6 mos. Avg.	2.64%					
American Electric Power Co.	High Price (\$)	88.290	85.850	88.120	89.930	87.150	82.100
	Low Price (\$)	71.200	76.230	77.150	79.230	77.320	77.300
	Avg. Price (\$)	79.745	81.040	82.635	84.580	82.235	79.700
	Dividend (\$)	0.700	0.700	0.700	0.700	0.700	0.700
	Mo. Avg. Div.	3.51%	3.46%	3.39%	3.31%	3.40%	3.51%
	6 mos. Avg.	3.43%					
Avangrid, Inc.	High Price (\$)	46.830	44.610	47.080	50.315	50.470	50.810
	Low Price (\$)	39.720	38.780	40.650	41.580	47.840	47.133
	Avg. Price (\$)	43.275	41.695	43.865	45.948	49.155	48.972
	Dividend (\$)	0.440	0.440	0.440	0.440	0.440	0.440
	Mo. Avg. Div.	4.07%	4.22%	4.01%	3.83%	3.58%	3.59%
	6 mos. Avg.	3.88%					
Black Hills Corp.	High Price (\$)	70.800	62.370	63.420	62.680	61.290	57.330
	Low Price (\$)	57.470	53.730	52.360	55.460	54.160	51.970
	Avg. Price (\$)	64.135	58.050	57.890	59.070	57.725	54.650
	Dividend (\$)	0.535	0.535	0.535	0.535	0.535	0.535
	Mo. Avg. Div.	3.34%	3.69%	3.70%	3.62%	3.71%	3.92%
	6 mos. Avg.	3.66%					
CMS Energy Corp.	High Price (\$)	64.080	58.960	61.190	64.750	64.780	62.810
	Low Price (\$)	53.960	52.350	55.800	57.660	58.940	58.630
	Avg. Price (\$)	59.020	55.655	58.495	61.205	61.860	60.720
	Dividend (\$)	0.408	0.408	0.408	0.408	0.408	0.408
	Mo. Avg. Div.	2.76%	2.93%	2.79%	2.66%	2.63%	2.68%
	6 mos. Avg.	2.74%					

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Consolidated Edison	High Price (\$)	90.000	78.570	78.170	77.650	76.690	78.060
	Low Price (\$)	75.250	69.160	69.810	70.010	70.100	69.300
	Avg. Price (\$)	82.625	73.865	73.990	73.830	73.395	73.680
	Dividend (\$)	0.765	0.765	0.765	0.765	0.765	0.765
	Mo. Avg. Div.	3.70%	4.14%	4.14%	4.14%	4.17%	4.15%
	6 mos. Avg.	4.07%					
DTE Energy	High Price (\$)	113.300	108.730	117.910	116.480	121.470	121.900
	Low Price (\$)	85.530	92.390	102.190	104.200	113.320	109.650
	Avg. Price (\$)	99.415	100.560	110.050	110.340	117.395	115.775
	Dividend (\$)	1.013	1.013	1.013	1.013	1.013	1.013
	Mo. Avg. Div.	4.07%	4.03%	3.68%	3.67%	3.45%	3.50%
	6 mos. Avg.	3.73%					
Duke Energy Corp.	High Price (\$)	93.000	86.370	92.200	85.050	87.210	89.490
	Low Price (\$)	75.580	79.720	77.580	79.110	78.950	78.970
	Avg. Price (\$)	84.290	83.045	84.890	82.080	83.080	84.230
	Dividend (\$)	0.945	0.945	0.945	0.945	0.965	0.965
	Mo. Avg. Div.	4.48%	4.55%	4.45%	4.61%	4.65%	4.58%
	6 mos. Avg.	4.55%					
Entergy Corp.	High Price (\$)	107.220	103.380	106.480	105.410	106.550	101.500
	Low Price (\$)	82.810	90.990	91.040	93.740	95.560	93.290
	Avg. Price (\$)	95.015	97.185	98.760	99.575	101.055	97.395
	Dividend (\$)	0.930	0.930	0.930	0.930	0.930	0.930
	Mo. Avg. Div.	3.92%	3.83%	3.77%	3.74%	3.68%	3.82%
	6 mos. Avg.	3.79%					
Evergy, Inc.	High Price (\$)	64.700	62.680	65.400	65.430	65.390	53.790
	Low Price (\$)	50.640	54.000	57.600	59.200	49.810	48.610
	Avg. Price (\$)	57.670	58.340	61.500	62.315	57.600	51.200
	Dividend (\$)	0.505	0.505	0.505	0.505	0.505	0.505
	Mo. Avg. Div.	3.50%	3.46%	3.28%	3.24%	3.51%	3.95%
	6 mos. Avg.	3.49%					
Eversource Energy	High Price (\$)	93.500	84.190	88.270	91.960	90.910	87.960
	Low Price (\$)	74.400	73.610	81.160	82.420	83.040	77.000
	Avg. Price (\$)	83.950	78.900	84.715	87.190	86.975	82.480
	Dividend (\$)	0.568	0.568	0.568	0.568	0.568	0.568
	Mo. Avg. Div.	2.70%	2.88%	2.68%	2.60%	2.61%	2.75%
	6 mos. Avg.	2.70%					

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Exelon Corp.	High Price (\$)	39.830	38.710	41.960	39.520	39.290	38.350
	Low Price (\$)	32.390	34.440	34.490	35.890	35.970	33.970
	Avg. Price (\$)	36.110	36.575	38.225	37.705	37.630	36.160
	Dividend (\$)	0.383	0.383	0.383	0.383	0.383	0.383
	Mo. Avg. Div.	4.24%	4.18%	4.00%	4.06%	4.07%	4.23%
	6 mos. Avg.	4.13%					
Fortis Inc.	High Price (\$)	56.460	54.870	54.630	54.890	55.250	55.000
	Low Price (\$)	50.210	49.870	50.060	50.950	51.940	51.300
	Avg. Price (\$)	53.335	52.370	52.345	52.920	53.595	53.150
	Dividend (\$)	0.478	0.478	0.478	0.478	0.478	0.478
	Mo. Avg. Div.	3.58%	3.65%	3.65%	3.61%	3.56%	3.59%
	6 mos. Avg.	3.61%					
NextEra Energy, Inc.	High Price (\$)	250.870	256.510	262.260	285.630	289.410	299.300
	Low Price (\$)	213.040	222.620	233.760	238.310	276.430	267.140
	Avg. Price (\$)	231.955	239.565	248.010	261.970	282.920	283.220
	Dividend (\$)	1.400	1.400	1.400	1.400	1.400	1.400
	Mo. Avg. Div.	2.41%	2.34%	2.26%	2.14%	1.98%	1.98%
	6 mos. Avg.	2.18%					
OGE Energy Corp.	High Price (\$)	33.770	32.940	34.910	33.540	34.100	32.670
	Low Price (\$)	26.370	27.960	29.220	29.440	31.090	28.250
	Avg. Price (\$)	30.070	30.450	32.065	31.490	32.595	30.460
	Dividend (\$)	0.388	0.388	0.388	0.388	0.388	0.388
	Mo. Avg. Div.	5.15%	5.09%	4.83%	4.92%	4.76%	5.09%
	6 mos. Avg.	4.97%					
Public Service Enterprise Gp.	High Price (\$)	54.870	51.330	55.730	56.130	56.230	55.400
	Low Price (\$)	41.630	43.870	46.700	48.940	51.560	50.320
	Avg. Price (\$)	48.250	47.600	51.215	52.535	53.895	52.860
	Dividend (\$)	0.490	0.490	0.490	0.490	0.490	0.490
	Mo. Avg. Div.	4.06%	4.12%	3.83%	3.73%	3.64%	3.71%
	6 mos. Avg.	3.85%					
Sempra Energy	High Price (\$)	133.140	128.520	136.080	129.180	135.120	125.900
	Low Price (\$)	101.180	114.330	112.160	114.150	121.980	112.330
	Avg. Price (\$)	117.160	121.425	124.120	121.665	128.550	119.115
	Dividend (\$)	1.045	1.045	1.045	1.045	1.045	1.045
	Mo. Avg. Div.	3.57%	3.44%	3.37%	3.44%	3.25%	3.51%
	6 mos. Avg.	3.43%					

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Southern Company	High Price (\$)	61.860	57.710	60.470	56.300	55.390	54.700
	Low Price (\$)	49.260	51.990	50.400	51.420	51.460	51.220
	Avg. Price (\$)	55.560	54.850	55.435	53.860	53.425	52.960
	Dividend (\$)	0.620	0.640	0.640	0.640	0.640	0.640
	Mo. Avg. Div.	4.46%	4.67%	4.62%	4.75%	4.79%	4.83%
	6 mos. Avg.	4.69%					
WEC Energy Group, Inc.	High Price (\$)	101.000	91.960	95.820	95.750	96.130	100.430
	Low Price (\$)	80.560	81.490	83.840	86.110	90.640	92.700
	Avg. Price (\$)	90.780	86.725	89.830	90.930	93.385	96.565
	Dividend (\$)	0.633	0.633	0.633	0.633	0.633	0.633
	Mo. Avg. Div.	2.79%	2.92%	2.82%	2.78%	2.71%	2.62%
	6 mos. Avg.	2.77%					
Xcel Energy	High Price (\$)	67.440	65.310	67.540	69.550	73.000	72.430
	Low Price (\$)	56.960	56.070	61.580	62.140	67.610	65.690
	Avg. Price (\$)	62.200	60.690	64.560	65.845	70.305	69.060
	Dividend (\$)	0.430	0.430	0.430	0.430	0.430	0.430
	Mo. Avg. Div.	2.77%	2.83%	2.66%	2.61%	2.45%	2.49%
	6 mos. Avg.	2.64%					
Monthly Avg. Dividend Yield		3.57%	3.64%	3.51%	3.48%	3.42%	3.52%
6-month Avg. Dividend Yield		3.52%					

Source: Yahoo! Finance

PROXY GROUP
DCF Growth Rate Analysis

<u>Company</u>	(1) Value Line <u>DPS</u>	(2) Value Line <u>EPS</u>	(3) <u>Zacks</u>	(4) Yahoo! <u>Finance</u>
Alliant Energy Corporation	7.00%	5.50%	5.50%	5.30%
Ameren Corp.	5.00%	6.00%	6.80%	5.85%
American Electric Power Co.	5.50%	6.00%	5.60%	5.63%
Avangrid, Inc.	0.50%	4.00%	5.00%	4.30%
Black Hills Corp.	6.00%	3.50%	5.80%	4.69%
CMS Energy Corporation	7.00%	7.50%	7.00%	7.08%
Consolidated Edison	3.50%	3.00%	2.00%	2.55%
DTE Energy Company	6.50%	6.00%	5.70%	5.95%
Duke Energy Corp.	2.50%	5.00%	4.30%	2.80%
Entergy Corp.	4.00%	3.00%	5.60%	5.80%
Evergy Inc.	5.50%	4.50%	6.40%	6.80%
Eversource Energy	6.00%	5.50%	6.60%	6.44%
Exelon Corp.	5.50%	5.00%	4.00%	4.00%
Fortis, Inc.	6.00%	2.50%	6.00%	6.00%
NextEra Energy	10.50%	10.00%	8.00%	8.25%
OGE Energy	6.00%	3.00%	3.70%	2.40%
Public Service Enterprise Group	4.00%	5.00%	2.70%	1.20%
Sempra Energy	7.50%	10.00%	7.40%	6.27%
Southern Company	3.00%	3.00%	4.00%	4.55%
WEC Energy Group	6.50%	6.00%	5.90%	5.91%
Xcel Energy Inc.	<u>6.00%</u>	<u>6.00%</u>	<u>5.90%</u>	<u>6.10%</u>
Averages	5.43%	5.24%	5.42%	5.14%
Median	6.00%	5.00%	5.70%	5.80%

Sources: Value Line Investment Survey, July 24, August 14, and September 11, 2020

Yahoo! Finance and Zacks growth rates retrieved September 17, 2020

Note: Zacks growth rate was substituted for the Yahoo! Finance growth rates for Exelon Corp., which was negative

**PROXY GROUP
DCF RETURN ON EQUITY**

	(1) Value Line <u>Dividend Gr.</u>	(2) Value Line <u>Earnings Gr.</u>	(3) Zack's <u>Earning Gr.</u>	(4) Yahoo! <u>Earning Gr.</u>	(5) Average of <u>All Gr. Rates</u>
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Method 1:

Dividend Yield	3.52%	3.52%	3.52%	3.52%	3.52%
Average Growth Rate	5.43%	5.24%	5.42%	5.14%	5.31%
Expected Div. Yield	<u>3.62%</u>	<u>3.62%</u>	<u>3.62%</u>	<u>3.61%</u>	<u>3.62%</u>
DCF Return on Equity	9.05%	8.86%	9.04%	8.75%	8.93%

Method 2:

Dividend Yield	3.52%	3.52%	3.52%	3.52%	3.52%
Median Growth Rate	6.00%	5.00%	5.70%	5.80%	5.63%
Expected Div. Yield	<u>3.63%</u>	<u>3.61%</u>	<u>3.62%</u>	<u>3.63%</u>	<u>3.62%</u>
DCF Return on Equity	9.63%	8.61%	9.32%	9.43%	9.25%

**PROXY GROUP
Capital Asset Pricing Model Analysis**

30-Year Treasury Bond, Value Line Beta

<u>Line No.</u>		<u>Value Line</u>
1	Market Required Return Estimate	11.05%
2	Risk-free Rate of Return, 30-Year Treasury Bond	
3	Average of Last Six Months	1.38%
4	Risk Premium	
5	(Line 1 minus Line 3)	9.67%
6	Comparison Group Beta	0.87
7	Comparison Group Beta * Risk Premium	
8	(Line 5 * Line 6)	8.43%
9	CAPM Return on Equity	
10	(Line 3 plus Line 8)	9.80%

Duff and Phelps Normalized Risk-free Rate

1	Market Required Return Estimate	11.05%
2	Duff and Phelps Normalized Risk-free Rate	2.50%
3	Risk Premium	
4	(Line 1 minus Line 2)	8.55%
5	Proxy Group Beta	0.87
6	Proxy Group Beta * Risk Premium	
7	(Line 4 * Line 5)	7.45%
8	CAPM Return on Equity	
9	(Line 2 plus Line 7)	9.95%

PROXY GROUP
Capital Asset Pricing Model Analysis

Supporting Data for CAPM Analyses

30 Year Treasury Bond Data

	<u>Avg. Yield</u>
March-20	1.46%
April-20	1.27%
May-20	1.38%
June-20	1.49%
July-20	1.31%
August-20	<u>1.36%</u>
6 month average	1.38%

Source: www.federalreserve.gov

Value Line Market Return Data:

Forecasted Data:	
Value Line Median Growth Rates:	
Earnings	9.00%
Book Value	<u>6.50%</u>
Average	7.75%
Average Dividend Yield	<u>1.12%</u>
Estimated Market Return	8.91%
Value Line Projected 3-5 Yr.	
Median Annual Total Return	13.00%
Average Annual Total Return	<u>13.36%</u>
Average	13.18%

Average of Projected Mkt.
Returns 11.05%

Source: Value Line Investment Analyzer,
accessed Sept. 18, 2020

Comparison Group Betas:

	<u>Value Line</u>
Alliant Energy Corporation	0.85
Ameren Corp.	0.80
American Electric Power Co.	0.75
Avangrid, Inc.	0.80
Black Hills Corp.	1.00
CMS Energy Corporation	0.80
Consolidated Edison	0.75
DTE Energy Company	0.90
Duke Energy Corp.	0.85
Entergy Corp.	0.95
Evergy Inc.	1.00
Eversource Energy	0.90
Exelon Corp.	0.95
Fortis, Inc.	0.80
NextEra Energy	0.85
OGE Energy	1.05
Public Service Enterprise Group	0.90
Sempra Energy	0.95
Southern Company	0.90
WEC Energy Group	0.80
Xcel Energy Inc.	<u>0.75</u>

Average 0.87

Source: Value Line Investment Survey

PROXY GROUP
Capital Asset Pricing Model Analysis
Historic Market Premium

	<u>Arithmetic Mean</u>	<u>Adjusted Arithmetic Mean</u>
CAPM with Current 30-Year Treasury Yield		
Long-Term Annual Return on Stocks	12.10%	
Long-Term Annual Income Return on Long-Term Treas. Bonds	<u>4.90%</u>	
Historical Market Risk Premium	7.20%	6.14%
Proxy Group Beta, Value Line	<u>0.87</u>	<u>0.87</u>
Beta * Market Premium	6.27%	5.35%
Current 30-Year Treasury Bond Yield	<u>1.38%</u>	<u>1.38%</u>
CAPM Cost of Equity, Value Line Beta	<u>7.65%</u>	<u>6.73%</u>
CAPM with D&P Normalized Risk-Free Rate		
Historical Market Risk Premium	7.20%	6.14%
Proxy Group Beta, Value Line	0.87	0.87
Beta * Market Premium	6.27%	5.35%
D&P Normalized Risk-Free Rate	2.50%	2.50%
CAPM Cost of Equity, Normalized Risk-Free Rate	<u>8.77%</u>	<u>7.85%</u>

Source: Duff and Phelps Cost of Capital Navigator
2020 Cost of Capital: Annual U.S. Guidance and Examples, Chapter 2, Exhibit 2.3,
2019 Cost of Capital: Annual U.S. Guidance and Examples, Chapter 3, pages 45-47

McKENZIE RISK PREMIUM MODEL

August 2020 Average and Baa Utility Bond Yields

Current Equity Risk Premium		
(a)	Avg. Yield over Study Period	8.10%
(b)	August 2020 Average Utility Bond Yield	2.76%
	Change in Bond Yield	-5.34%
(c)	Risk Premium/Interest Rate Relationship	-0.4324
	Adjustment to Average Risk Premium	2.31%
(a)	Average Risk Premium over Study Period	3.79%
	Adjusted Risk Premium	6.10%
Implied Cost of Equity		
(b)	Baa Utility Bond Yield	3.06%
	Adjusted Equity Risk Premium	6.10%
	Risk Premium Cost of Equity	9.16%

Notes:


- (a) Exhibit AMM-8, page 3.
- (b) Average and Baa utility bond yield from September 2020 Mergent Bond Record.
- (c) Exhibit AMM-8, page 4.

AFFIDAVIT

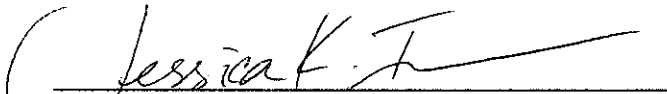
STATE OF GEORGIA)

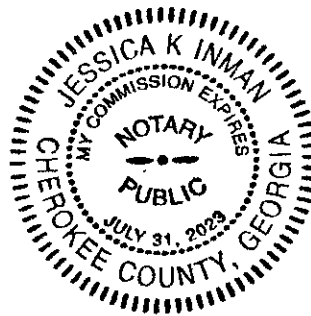
COUNTY OF FULTON)

RICHARD A. BAUDINO, being duly sworn, deposes and states: that the attached is his sworn testimony and that the statements contained are true and correct to the best of his knowledge, information and belief.


Richard A. Baudino

Sworn to and subscribed before me on this
7th day of October 2020.


Notary Public



In Re: Applications of Kentucky Utilities Co. and Louisville Gas & Elec. Co. for Rate Changes, etc.
Case Nos. 2020-00349 and 2020-00350
Joint Responses of the Attorney General and KIUC to Data Requests of
Louisville Gas & Electric Co. And Kentucky Utilities Co

WITNESS / RESPONDENT RESPONSIBLE:
LANE KOLLEN

QUESTION No. 25
Page 1 of 1

Provide copies of all electronic files in native format with formulas intact used in your analysis.
This includes copies of all workpapers supporting your testimony, analyses, and conclusions.

RESPONSE:

Mr. Kollen's electronic files and workpapers were filed electronically along with his testimony.

WITNESS / RESPONDENT RESPONSIBLE:
LANE KOLLEN

QUESTION No. 26
Page 1 of 1

At page 107, at lines 11 through 17 of Mr. Kollen's testimony, Mr. Kollen asserts, "The Companies' base revenue requirements include the AMR investment in rate base in the test year; however, the rate base will continue to decline as the AMR meters are depreciated after the end of the test year and then abandoned when they are retired. The Companies do not propose to capture this savings due to the decline in the return on component of the AMR meters after the end of the test year in the proposed regulatory liabilities. In other words, they plan to "retain" these savings." Provide the complete support, including any documents for this assertion by Mr. Kollen.

RESPONSE:

Refer to the Direct Testimony of Kent Blake at 9-18. Refer also to the Companies' responses to AG-KIUC 1-74, which specifically addresses the limited savings the Companies propose be captured in the regulatory liability, 1-193, 1-196, 2-59, and 2-60. If the Companies achieve savings that are not captured in the regulatory liability, then the Companies will retain those savings.

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WITNESS / RESPONDENT RESPONSIBLE:
LANE KOLLEN

QUESTION No. 27
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At page 108, at lines 1-10 of Mr. Kollen's testimony, Mr. Kollen asserts, "In addition, the Companies will discontinue depreciation on the existing AMR meters when they are retired, thus, effectively "freezing" the net book value at the retirement dates even though they continue to recover the depreciation expense on the retired meters through their base revenues. The Companies do not propose to capture this savings due to the decline in the depreciation expense during the implementation period or the post-implementation period in the proposed regulatory liabilities. In other words, they also plan to "retain" these savings even though they neglected to mention this." Provide the complete support, including any documents for this assertion by Mr. Kollen.

RESPONSE:

Refer to the response to Question No. 26.

WITNESS / RESPONDENT RESPONSIBLE:
LANE KOLLEN

QUESTION No. 28
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At page 22, lines 2-4 of Mr. Kollen's testimony, he asserts, "their requests are based on potentially shortened service lives even though there is no plan and no certainty that the generating units will be retired earlier than previously assumed or on the proposed new probable retirement dates." Before making this assertion in his written testimony, did Mr. Kollen review the record, including LG&E's 2020 Environmental Compliance Plan in KPSC Case No 2020-00061?

RESPONSE:

No. Mr. Kollen relied on Mr. Bellar's Direct Testimony at 13 wherein the following question is posed to Mr. Bellar and the following answer is provided by Mr. Bellar.

Q. Does the Companies' analysis mean that each affected unit will definitely be retired in the updated year?

A Not necessarily. The Companies' analysis sets a reasonable end of economic life for the affected generating units based on economics, environmental regulations, planned outage projects and maintenance, and other factors. As each unit nears the end of its expected economic life and replacement capacity must be considered, the Companies will assess the conditions at the time to determine whether adjustments to retirement dates are prudent and in the best interests of customers.

WITNESS / RESPONDENT RESPONSIBLE:
LANE KOLLEN

QUESTION No. 29
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At page 85, lines 7-9 of Mr. Kollen's testimony, he asserts, "historically, the Commission has used a similar methodology to calculate normalized generation outage expense and storm expense." Provide the complete support, including any case citations, orders and other documents for this assertion by Mr. Kollen.

RESPONSE:

Mr. Kollen relied on the following cases, either as filed and effectively accepted by the Commission or specifically adopted by the Commission. There may be others.

In regards to storm expense, the Commission Ordered the following in KU Case No. 2003-00434 at page 34.

Storm Damage Expense KU proposed to normalize its storm damage expense by using a 4-year historic average adjusted for inflation. KU noted that it only had 4 years of historical data available for this adjustment, and that the February 2003 ice storm expenses were not included in the calculation of the proposed adjustment. KU stated that this was the same methodology utilized by the Commission in Case No. 1990-00158. The normalization resulted in a jurisdictional decrease of \$473,014 over the test-year actual expense. While the Commission would prefer the use of a 10-year historic average, that data is not available and we will agree with the methodology used by KU.

According to KU witness S. Bradford Rives in Direct Testimony filed in Case No. 2009-00548 on January 29, 2010 at 14, the Company proposed an adjustment to reflect a normalized level of storm damage expenses based upon a ten-year average adjusted for inflation much like the one it made in Case No. 2008-00251. There is no indication that any party objected to these adjustments in those cases.

The Commission effectively adopted Kentucky Power Company's proposals to use a three-year actual average storm expense adjusted for inflation in several of its rate cases. In none of those cases is there any indication that intervenors or Staff raised an issue or that the Commission modified the KPCo's proposals. See the Direct Testimonies of Lerah M. Scott in Case No. 2020-00174 at 9 and Ranie K. Wohnhas in Case Nos. 2017-00179 at 16-17 and 2014-00396 at 21. Also see the Commission's December 4, 1984 Order in Case No. 9061 at page 40 in which it used a nine-year historical level adjusted to current dollars.

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In regards to generation outage expense, the Commission authorized the Stipulation and Recommendation at ¶1.2 (F) at 5 attached to the April 30, 2019 Orders in Case Nos. 2018-00294 and 2018-00295 for KU and LG&E, which set the expense level using a five-year historic average.

WITNESS / RESPONDENT RESPONSIBLE:
LANE KOLLEN

QUESTION No. 30
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At page 85, line 13 and page 86, line 5, Mr. Kollen asserts the Companies' planned outage expenses are "excessive." Provide the complete support, including any documents or analyses for this assertion by Mr. Kollen.

RESPONSE:

The question mischaracterizes Mr. Kollen's testimony and incorrectly claims that "Mr. Kollen asserts the Companies' planned outage expenses are "excessive." Mr. Kollen did not. Rather, Mr. Kollen addressed the Company's proposed deferral of expenses that are more or less than the expenses allowed in the base revenue requirements and stated that the proposal "provides an uneconomic behavioral incentive and encourages excessive expenses." Mr. Kollen subsequently stated that "The Commission should deny the Companies' request for a true-up of their outage expenses and authorization for the related deferrals. Without guaranteed recovery of excessive outage expenses, the Companies will be incentivized to minimize the outage expense to the extent reasonable and practicable."