

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF)
KENTUCKY UTILITIES COMPANY FOR AN) CASE NO. 2018-00294
ADJUSTMENT OF ITS ELECTRIC RATES)

RESPONSE OF
KENTUCKY UTILITIES COMPANY
TO
THE ATTORNEY GENERAL'S INITIAL DATA REQUESTS
FOR INFORMATION
DATED NOVEMBER 13, 2018

FILED: NOVEMBER 29, 2018

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Lonnie E. Bellar**, being duly sworn, deposes and says that he is Chief Operating Officer for Louisville Gas and Electric Company and Kentucky Utilities Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



Lonnie E. Bellar

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 29th day of November 2018.



Notary Public

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Kent W. Blake**, being duly sworn, deposes and says that he is Chief Financial Officer for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



Kent W. Blake

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 29th day of November 2018.



Notary Public

My Commission Expires:

Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022


VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Robert M. Conroy**, being duly sworn, deposes and says that he is Vice President, State Regulation and Rates, for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.


Robert M. Conroy

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 29th day of November 2018.


Notary Public

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

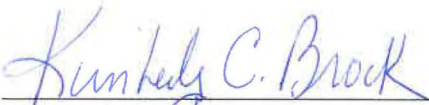
VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Elizabeth J. McFarland**, being duly sworn, deposes and says that she is Vice President, Customer Services for Louisville Gas and Electric Company and Kentucky Utilities Company and an employee of LG&E and KU Services Company, and that she has personal knowledge of the matters set forth in the responses for which she is identified as the witness, and the answers contained therein are true and correct to the best of her information, knowledge and belief.


Elizabeth J. McFarland

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 29th day of November 2018.


Notary Public

My Commission Expires:

10 16 2020

VERIFICATION

STATE OF TEXAS)
) SS:
COUNTY OF TRAVIS)

The undersigned, **Adrien M. McKenzie**, being duly sworn, deposes and says he is President of FINCAP, Inc., that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

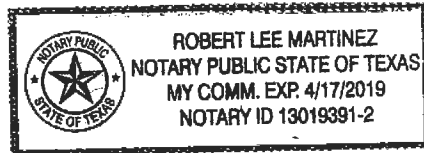

Adrien M. McKenzie

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 16th day of November 2018.

 (SEAL)
Notary Public

My Commission Expires:

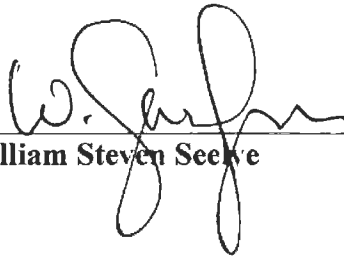
04/17/2019



VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **William Steven Seelye**, being duly sworn, deposes and states that he is a Principal of The Prime Group, LLC, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



William Steven Seelye

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 20th day of November 2018.

 (SEAL)

Notary Public

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **David S. Sinclair**, being duly sworn, deposes and says that he is Vice President, Energy Supply and Analysis for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



David S. Sinclair

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 29th day of November 2018.



Notary Public

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **John K. Wolfe**, being duly sworn, deposes and says that he is Vice President, Electric Distribution for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



John K. Wolfe

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 28th day of November 2018.



Notary Public

My Commission Expires:

Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

KENTUCKY UTILITIES COMPANY

Response to Attorney General's Initial Data Requests for Information Dated November 13, 2018

Case No. 2018-00294

Question No. 1

Responding Witness: Robert M. Conroy

I. AFFORDABILITY

- Q-1. Refer to the direct testimony of Robert M. Conroy, pages 7-8, wherein he states that the “Companies work every day to provide safe, reliable, and economical utility service to our customers,” and he discusses the Companies’ understanding “of the needs of low- and fixed income customers.”
- a. Do the Companies consider customer affordability in their operations?
 - b. Does the Company consider the interest of low- and fixed-income customers to be unique, in that they perceive the costs and service of utilities, in particular their affordability, differently than other customers?
- A-1.
- a. The Companies strive to provide safe and reliable service at the lowest reasonable cost. This results in service that is as affordable as the Companies can reasonably provide consistent with ensuring safety and reliability.
 - b. The Companies understand that low- and fixed-income customers face challenges other customers ordinarily do not due to financial constraints; however, those customers’ financial constraints do not affect their cost of service. Therefore, the Companies do not consider them to be unique for base-rate purposes.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 2

Responding Witness: Kent W. Blake

- Q-2. Refer to the direct testimony of Kent W. Blake, page 12, and the Exhibit KWB-1 to his testimony.
- a. Provide the data used to conduct the “benchmarking study.”
 - b. Provide the annual “benchmarking study” conducted by the Companies “for the past fifteen years.”
 - c. Provide the names of each vertically-integrated utility holding companies used in the “benchmarking stud[ies].”
- A-2.
- a. See attached.
 - b. See attached.
 - c. See attached.

Total O&M Rankings [2013-2017]

Vertically-Integrated Utilities

Holding Company	Transmission		Distribution		CA O&M	CS&I O&M	Sales O&M	A&G O&M	Total Sales of Electricity		Ranking
	Non Fuel O&M	O&M	O&M	O&M					Volume (MWh)	Total O&M/MWh	
NextEra Energy, Inc.	3,211,914,000	470,208,000	2,527,266,000	564,942,000	500,604,000	24,482,000	1,887,794,000	9,187,210,000	576,861,659	15.93	1
Entergy Corporation	4,481,460,000	934,816,000	1,222,166,000	681,360,000	472,990,000	29,855,000	3,452,506,000	11,275,153,000	694,118,461	16.24	2
Berkshire Hathaway Inc.	3,806,398,000	1,680,844,000	1,725,328,000	817,844,000	1,390,145,000	23,904,000	1,836,625,000	11,281,088,000	647,595,062	17.42	3
AEP	4,346,465,000	2,427,232,000	2,062,824,000	492,903,000	440,892,000	3,832,000	1,845,863,000	11,620,011,000	626,706,971	18.54	4
OGE Energy Corp.	611,706,000	702,763,000	411,823,000	108,700,000	208,136,000	28,493,000	642,314,000	2,713,935,000	145,554,088	18.65	5
ALLETE, Inc.	379,907,000	367,091,000	123,996,000	29,271,000	49,317,000	869,000	370,989,000	1,321,440,000	70,416,113	18.77	6
Dominion Energy, Inc.	4,448,916,000	255,160,000	971,051,000	439,980,000	175,490,000	88,000	1,796,341,000	8,087,026,000	424,814,207	19.04	7
Avista Corporation	305,503,000	158,299,000	179,854,000	83,892,000	129,760,000	7,000	373,418,000	1,230,733,000	63,822,212	19.28	8
LKE	1,313,419,952	230,632,774	526,284,289	222,919,810	178,486,000	4,703,000	947,428,653	3,423,874,478	177,006,629	19.34	9
Cleco Partners LP	421,371,000	152,471,000	149,310,000	62,686,000	37,608,000	24,297,000	282,366,000	1,130,109,000	58,299,323	19.38	10
Duke Energy Corporation	11,109,825,000	1,109,606,000	3,241,633,000	1,136,576,000	711,452,000	100,217,000	6,218,803,000	23,628,112,000	1,150,359,630	20.54	11
Southern Company	7,964,463,000	1,160,075,000	2,747,952,000	1,411,466,000	828,270,000	345,608,000	5,066,654,000	19,524,488,000	915,739,927	21.32	12
Emera Incorporated	705,275,000	71,304,000	251,064,000	151,846,000	217,513,000	4,034,000	643,530,000	2,044,566,000	95,412,160	21.43	13
SCANA Corporation	940,384,000	99,091,000	264,964,000	237,883,000	59,843,000	7,910,000	857,595,000	2,467,670,000	115,124,628	21.43	14
Ameren Corporation	1,563,045,000	366,156,000	754,189,000	225,560,000	382,491,000	2,120,000	1,281,061,000	4,574,622,000	211,841,552	21.59	15
NorthWestern Corporation	216,273,000	159,692,000	241,548,000	59,911,000	32,141,000	2,767,000	367,391,000	1,079,723,000	48,516,397	22.25	16
Puget Holdings LLC	597,583,000	647,511,000	406,914,000	257,578,000	577,763,000	2,356,000	577,363,000	3,067,068,000	132,788,263	23.10	17
FirstEnergy Corp.	465,917,000	684,771,000	293,703,000	86,381,000	19,737,000	157,000	290,358,000	1,841,024,000	79,273,321	23.22	18
IDACORP, Inc.	445,822,000	131,826,000	242,318,000	111,820,000	208,459,000	80,000	736,901,000	1,877,226,000	80,222,328	23.40	19
AES Corporation	716,088,000	101,951,000	198,321,000	105,520,000	9,346,000	0	656,947,000	1,788,173,000	74,493,278	24.00	20
Xcel Energy Inc.	4,174,691,000	2,883,666,000	1,356,048,000	592,390,000	1,215,984,000	4,203,000	2,876,260,000	13,103,242,000	541,441,613	24.20	21
Great Plains Energy Inc	1,156,321,000	535,891,000	433,341,000	160,502,000	302,006,000	3,646,000	1,198,543,000	3,790,250,000	149,872,607	25.29	22
Iberdrola, S.A.	31,405,000	285,277,000	1,075,191,000	459,155,000	650,390,000	54,713,000	794,002,000	3,350,133,000	128,679,853	26.03	23
Otter Tail Corporation	152,855,000	133,895,000	83,277,000	64,959,000	45,164,000	2,113,000	213,607,000	695,870,000	26,396,332	26.36	24
Portland General Electric Co	598,491,000	482,870,000	531,921,000	270,282,000	72,413,000	0	858,523,000	2,814,500,000	105,742,391	26.62	25
El Paso Electric Company	591,344,000	95,162,000	111,835,000	94,772,000	1,040,000	0	597,214,000	1,491,367,000	54,312,529	27.46	26
Vectren Corporation	353,827,000	86,135,000	77,943,000	30,806,000	2,703,000	53,341,000	198,134,000	802,889,000	28,861,057	27.82	27
Black Hills Corporation	135,065,000	206,278,000	69,185,000	20,206,000	10,072,000	97,000	182,317,000	623,220,000	22,368,133	27.86	28
Pinnacle West Capital Corp	2,113,421,000	399,387,000	498,192,000	270,894,000	306,326,000	56,863,000	943,750,000	4,588,833,000	161,506,003	28.41	29
MDU Resources Group, Inc.	145,977,000	109,043,000	77,742,000	21,613,000	1,270,000	677,000	114,074,000	470,396,000	16,493,138	28.52	30
Algonquin Power & Utilities	177,653,000	110,796,000	138,293,000	44,877,000	15,512,000	1,036,000	238,792,000	726,959,000	25,484,116	28.53	31
Westar Energy, Inc.	1,195,964,000	1,232,092,000	452,871,000	150,871,000	18,014,000	2,000	1,038,532,000	4,088,346,000	142,855,162	28.62	32
NiSource Inc.	968,035,000	187,120,000	226,592,000	93,272,000	2,734,000	5,524,000	1,040,189,000	2,523,466,000	85,969,484	29.35	33
Edison International	1,479,776,000	1,321,030,000	2,501,196,000	864,759,000	2,819,813,000	49,144,000	5,388,228,000	14,423,946,000	476,972,294	30.24	34
PNM Resources, Inc.	826,195,000	186,004,000	109,355,000	75,588,000	4,093,000	23,389,000	707,960,000	1,932,584,000	60,114,213	32.15	35
Sempra Energy	581,673,000	437,267,000	667,850,000	233,627,000	862,008,000	0	2,500,440,000	5,282,865,000	155,746,232	33.92	36
Fortis Inc.	975,583,000	252,060,000	373,224,000	206,686,000	320,902,000	685,000	957,836,000	3,086,976,000	90,696,008	34.04	37
Eversource Energy	239,201,000	209,874,000	321,702,000	154,097,000	84,786,000	117,000	475,987,000	1,485,764,000	42,661,053	34.83	38
PG&E Corporation	3,173,220,000	1,354,096,000	3,793,462,000	1,116,120,000	2,986,920,000	30,751,000	5,557,300,000	18,011,869,000	437,736,683	41.15	39

Total O&M Rankings [2013-2017]

Vertically-Integrated Utilities

Holding Company	Vertically-Integrated Utilities							Total Sales of Electricity		Ranking	
	Non Fuel O&M	Transmission O&M	Distribution O&M	CA O&M	CS&I O&M	Sales O&M	A&G O&M	Total O&M	Volume (MWh)		Total O&M/MWh
Caisse de dépôt et	81,060,000	472,684,000	171,615,000	39,645,000	14,653,000	253,000	222,644,000	1,002,554,000	23,640,213	42.41	40
Consolidated Edison, Inc.	738,019,000	769,127,000	2,552,659,000	1,092,784,000	1,814,871,000	9,641,000	4,368,342,000	11,345,443,000	234,736,999	48.33	41
Grand Total	67,941,510,952	23,661,253,774	34,166,002,289	13,346,943,810	18,182,117,000	901,974,000	60,604,921,653	218,804,723,478	9,401,252,322		

Q1	20.54
Q2	24.20
Q3	28.53
Industry Avg.	23.27

Notes: Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Represents only Vertically-Integrated Utilities

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Total Trans. O&M Expense (\$000)	Total Distrib. O&M Expense (\$000)	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Indianapolis Power & Light Company	AES Corporation	135,886	11,831	36,907	20,099	2,227	0	139,732	16,033,922
2014Y	Indianapolis Power & Light Company	AES Corporation	132,103	11,608	37,733	21,399	1,963	0	125,982	16,391,321
2015Y	Indianapolis Power & Light Company	AES Corporation	154,809	10,254	39,364	21,360	1,590	0	127,068	14,397,561
2016Y	Indianapolis Power & Light Company	AES Corporation	149,247	27,979	41,074	20,773	1,661	0	133,658	14,185,985
2017Y	Indianapolis Power & Light Company	AES Corporation	144,043	40,279	43,243	21,889	1,905	0	130,507	13,484,489
2013Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	29,656	17,333	26,783	10,067	2,209	349	44,700	5,620,276
2014Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	32,415	22,681	30,603	9,770	2,910	180	45,640	5,131,750
2015Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	37,811	23,667	29,023	8,624	2,986	195	46,209	4,940,028
2016Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	37,151	22,089	26,993	8,062	3,371	154	49,080	4,950,707
2017Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	40,620	25,026	24,891	8,354	4,036	158	53,163	4,841,355
2013Y	ALLETE (Minnesota Power)	ALLETE, Inc.	81,069	52,185	22,181	5,824	13,459	217	69,292	13,264,062
2014Y	ALLETE (Minnesota Power)	ALLETE, Inc.	80,954	64,818	24,612	5,600	11,771	143	80,821	13,942,499
2015Y	ALLETE (Minnesota Power)	ALLETE, Inc.	78,932	73,534	24,187	5,473	8,402	127	73,416	14,369,559
2016Y	ALLETE (Minnesota Power)	ALLETE, Inc.	72,982	84,273	27,423	5,802	4,018	163	60,228	14,147,335
2017Y	ALLETE (Minnesota Power)	ALLETE, Inc.	65,970	92,281	25,593	6,572	11,667	219	87,232	14,692,658
2013Y	Union Electric Company	Ameren Corporation	309,718	58,896	167,177	38,686	57,800	447	251,904	43,158,138
2014Y	Union Electric Company	Ameren Corporation	315,539	60,321	160,869	39,791	66,225	463	278,701	43,192,724
2015Y	Union Electric Company	Ameren Corporation	347,345	70,144	149,481	50,894	97,842	458	264,623	43,255,846
2016Y	Union Electric Company	Ameren Corporation	296,877	80,459	136,774	49,258	72,182	364	251,783	39,997,209
2017Y	Union Electric Company	Ameren Corporation	293,566	96,336	139,888	46,931	88,442	388	234,050	42,237,635
2013Y	Appalachian Power Company	American Electric Power Company, Inc.	194,328	76,711	168,579	35,569	6,965	155	104,512	47,596,529
2014Y	Appalachian Power Company	American Electric Power Company, Inc.	252,109	141,646	123,923	40,890	8,717	297	111,163	35,769,358
2015Y	Appalachian Power Company	American Electric Power Company, Inc.	226,788	143,949	139,749	37,672	11,144	264	104,606	34,847,578
2016Y	Appalachian Power Company	American Electric Power Company, Inc.	219,726	216,840	158,709	37,801	16,466	213	104,282	34,862,820
2017Y	Appalachian Power Company	American Electric Power Company, Inc.	211,709	232,090	148,298	39,807	17,920	275	101,376	33,601,395
2013Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	375,469	55,000	55,467	15,722	31,205	99	115,582	38,036,953
2014Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	407,189	83,059	64,522	16,054	14,317	212	126,248	35,331,017
2015Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	392,669	87,130	56,683	15,383	19,819	314	115,453	30,404,900
2016Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	368,740	98,318	67,671	15,399	21,929	66	114,698	28,379,413
2017Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	360,396	140,880	67,239	15,024	25,384	211	107,631	29,819,953
2013Y	Kentucky Power Company	American Electric Power Company, Inc.	28,083	14,384	39,261	5,734	3,691	31	19,790	9,933,527
2014Y	Kentucky Power Company	American Electric Power Company, Inc.	64,696	22,065	45,049	6,201	4,938	54	21,802	11,993,933
2015Y	Kentucky Power Company	American Electric Power Company, Inc.	52,830	27,835	47,371	6,131	3,909	47	22,615	8,700,986
2016Y	Kentucky Power Company	American Electric Power Company, Inc.	45,534	34,927	49,489	5,707	6,544	94	21,711	7,276,047
2017Y	Kentucky Power Company	American Electric Power Company, Inc.	43,338	44,236	48,993	5,920	14,530	53	24,852	7,106,360
2013Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	75,169	76,921	73,808	18,603	21,640	115	51,846	19,239,394
2014Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	82,641	95,266	68,452	19,586	30,573	204	58,605	19,517,893
2015Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	79,419	100,058	71,355	19,118	30,579	159	56,457	18,916,965
2016Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	76,674	114,839	81,312	15,640	32,808	139	55,328	19,425,199
2017Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	73,654	137,834	97,537	14,920	35,115	171	55,904	19,052,676
2013Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	131,631	65,917	68,828	21,582	15,772	85	64,549	28,553,233
2014Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	142,741	80,473	73,292	22,604	15,240	163	72,366	28,644,882
2015Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	146,424	96,781	84,126	21,413	19,057	140	70,386	27,269,400
2016Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	155,056	120,301	77,198	20,475	17,268	118	75,617	26,169,526

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2017Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	139,452	119,772	85,913	19,948	15,362	153	68,484	26,257,034
2013Y	Alaska Electric Light and Power Company	Avista Corporation	2,409	524	2,848	1,160	5	0	4,316	377,005
2014Y	Alaska Electric Light and Power Company	Avista Corporation	2,643	556	2,772	1,168	2	0	4,191	422,784
2015Y	Alaska Electric Light and Power Company	Avista Corporation	2,508	470	2,755	1,114	4	0	4,429	398,066
2016Y	Alaska Electric Light and Power Company	Avista Corporation	2,331	623	2,877	1,109	4	0	4,330	395,154
2017Y	Alaska Electric Light and Power Company	Avista Corporation	3,056	718	3,148	1,182	19	0	4,576	414,210
2013Y	Avista Corporation	Avista Corporation	56,278	30,263	31,871	15,187	21,884	7	64,056	13,318,994
2014Y	Avista Corporation	Avista Corporation	56,655	31,164	32,653	14,540	26,943	0	67,943	12,839,533
2015Y	Avista Corporation	Avista Corporation	55,064	29,542	35,900	15,539	25,612	0	73,623	11,942,035
2016Y	Avista Corporation	Avista Corporation	62,028	31,090	32,193	16,702	24,905	0	73,986	11,733,626
2017Y	Avista Corporation	Avista Corporation	62,531	33,349	32,837	16,191	30,382	0	71,968	11,980,805
2013Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	242,128	48,509	92,116	26,766	56,919	4,769	77,455	32,680,735
2014Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	249,240	53,065	92,165	28,091	78,013	4,617	72,945	32,499,927
2015Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	252,203	57,875	82,796	27,460	80,221	3,602	68,170	31,832,657
2016Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	232,144	67,180	79,336	27,496	85,276	3,658	63,771	32,475,023
2017Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	275,887	77,396	88,643	27,940	107,483	3,769	59,530	33,727,302
2013Y	Nevada Power Company	Berkshire Hathaway Inc.	114,834	32,532	37,296	42,720	68,921	218	139,802	24,064,426
2014Y	Nevada Power Company	Berkshire Hathaway Inc.	85,771	76,754	38,593	40,032	53,978	135	115,901	22,745,488
2015Y	Nevada Power Company	Berkshire Hathaway Inc.	80,039	47,215	24,900	39,787	62,223	147	99,676	25,481,621
2016Y	Nevada Power Company	Berkshire Hathaway Inc.	82,773	59,480	25,690	40,887	62,873	193	99,466	25,062,084
2017Y	Nevada Power Company	Berkshire Hathaway Inc.	73,355	59,167	26,906	41,320	42,560	215	104,964	23,751,206
2013Y	PacifiCorp	Berkshire Hathaway Inc.	404,762	198,670	208,439	87,534	116,605	0	175,800	65,869,008
2014Y	PacifiCorp	Berkshire Hathaway Inc.	410,762	211,058	207,564	85,292	136,012	0	103,887	65,269,524
2015Y	PacifiCorp	Berkshire Hathaway Inc.	374,342	215,664	207,035	81,366	135,712	0	134,217	63,530,663
2016Y	PacifiCorp	Berkshire Hathaway Inc.	386,433	203,261	196,498	83,187	147,415	0	129,633	60,958,902
2017Y	PacifiCorp	Berkshire Hathaway Inc.	368,299	204,806	197,649	86,106	91,522	0	142,110	62,468,319
2013Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	36,047	14,419	22,969	13,429	18,622	562	59,898	9,185,572
2014Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	30,855	11,772	21,817	10,592	6,712	547	50,018	8,882,408
2015Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	38,561	14,795	23,601	9,477	11,264	466	46,684	8,911,051
2016Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	34,481	14,406	24,350	9,315	14,571	523	47,076	9,000,293
2017Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	33,482	12,820	26,965	9,047	13,243	483	45,622	9,198,853
2013Y	Black Hills Power, Inc.	Black Hills Corporation	19,144	22,962	8,902	2,850	1,338	39	30,256	3,084,298
2014Y	Black Hills Power, Inc.	Black Hills Corporation	17,967	24,294	9,814	3,251	1,536	25	29,891	2,905,098
2015Y	Black Hills Power, Inc.	Black Hills Corporation	17,920	23,464	9,615	3,239	1,717	4	26,141	2,873,371
2016Y	Black Hills Power, Inc.	Black Hills Corporation	18,233	25,302	10,470	3,037	1,498	2	23,125	2,611,946
2017Y	Black Hills Power, Inc.	Black Hills Corporation	21,366	27,381	12,668	3,005	1,010	3	25,139	2,992,386
2013Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	6,409	14,351	2,904	1,098	773	8	7,880	1,635,140
2014Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	7,053	15,848	3,433	1,082	812	6	9,082	1,639,680
2015Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	9,286	15,775	3,449	961	644	3	10,740	1,418,697
2016Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	8,334	17,817	3,634	885	457	5	9,537	1,559,870
2017Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	9,353	19,084	4,296	798	287	2	10,526	1,647,647
2013Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	16,049	87,363	33,895	8,549	3,771	3	51,916	4,853,495
2014Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	16,489	92,767	33,687	8,949	3,375	23	46,640	4,713,347
2015Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	15,524	98,295	32,541	9,145	2,572	28	43,845	4,751,076

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2016Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	15,537	95,650	35,159	7,523	2,452	122	39,113	4,688,744
2017Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	17,461	98,609	36,333	5,479	2,483	77	41,130	4,633,551
2013Y	Cleco Power LLC	Cleco Partners LP	75,683	18,949	28,603	11,227	5,919	4,529	54,127	11,115,732
2014Y	Cleco Power LLC	Cleco Partners LP	89,393	29,412	29,011	10,857	5,911	4,834	57,395	12,201,940
2015Y	Cleco Power LLC	Cleco Partners LP	82,444	30,764	30,537	12,231	9,111	5,911	60,469	12,105,640
2016Y	Cleco Power LLC	Cleco Partners LP	89,044	37,925	30,383	15,195	8,265	4,870	55,673	11,596,427
2017Y	Cleco Power LLC	Cleco Partners LP	84,807	35,421	30,776	13,176	8,402	4,153	54,702	11,279,584
2013Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	142,781	149,148	474,143	227,454	288,861	9,641	972,467	47,335,320
2014Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	146,111	134,741	512,137	235,949	341,180	0	973,181	46,406,542
2015Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	164,824	149,154	535,169	216,744	380,851	0	886,291	47,202,850
2016Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	157,574	161,227	512,680	200,873	387,254	0	866,797	47,450,242
2017Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	126,729	174,857	518,530	211,764	416,725	0	669,606	46,342,045
2013Y	Virginia Electric and Power Company	Dominion Energy, Inc.	666,709	40,470	185,193	84,749	24,653	0	388,641	82,852,117
2014Y	Virginia Electric and Power Company	Dominion Energy, Inc.	1,244,953	22,275	174,005	103,838	32,437	0	330,798	83,938,195
2015Y	Virginia Electric and Power Company	Dominion Energy, Inc.	835,540	100,092	178,553	89,770	37,651	0	354,234	85,178,907
2016Y	Virginia Electric and Power Company	Dominion Energy, Inc.	983,460	99,432	240,017	80,534	43,352	0	377,040	87,875,099
2017Y	Virginia Electric and Power Company	Dominion Energy, Inc.	718,254	-7,109	193,283	81,089	37,397	88	345,628	84,969,889
2013Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	814,070	55,116	191,804	79,219	28,943	1,427	575,778	85,789,697
2014Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	927,885	56,473	244,244	78,523	21,845	7,325	460,331	87,645,520
2015Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	967,351	57,407	244,757	81,499	19,266	9,243	532,642	87,375,571
2016Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	938,315	57,317	270,760	83,506	20,610	10,355	491,096	88,544,715
2017Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	862,540	53,374	276,189	84,236	20,720	11,583	414,143	87,306,564
2013Y	Duke Energy Florida, LLC	Duke Energy Corporation	198,702	41,237	135,030	46,992	94,825	1,937	279,602	38,164,155
2014Y	Duke Energy Florida, LLC	Duke Energy Corporation	224,282	35,842	146,828	57,525	115,469	2,331	237,312	38,728,049
2015Y	Duke Energy Florida, LLC	Duke Energy Corporation	227,289	36,495	150,197	57,771	83,883	3,657	242,876	39,989,379
2016Y	Duke Energy Florida, LLC	Duke Energy Corporation	215,910	35,381	148,788	59,606	101,995	4,499	257,542	40,660,935
2017Y	Duke Energy Florida, LLC	Duke Energy Corporation	203,837	46,549	149,549	57,717	97,908	7,284	217,891	40,290,293
2013Y	Duke Energy Indiana, LLC	Duke Energy Corporation	238,332	46,188	78,965	39,353	11,036	270	197,917	33,714,982
2014Y	Duke Energy Indiana, LLC	Duke Energy Corporation	296,486	49,651	82,121	40,233	6,905	2,209	155,383	33,433,620
2015Y	Duke Energy Indiana, LLC	Duke Energy Corporation	342,983	62,855	91,194	41,014	5,651	2,884	161,178	33,517,569
2016Y	Duke Energy Indiana, LLC	Duke Energy Corporation	334,891	76,550	99,680	27,491	5,087	3,560	152,284	34,368,826
2017Y	Duke Energy Indiana, LLC	Duke Energy Corporation	310,442	82,485	99,541	29,240	4,662	4,236	140,185	33,145,670
2013Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	38,223	10,230	10,273	6,495	1,506	51	23,632	4,546,692
2014Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	44,932	13,842	11,669	6,645	975	553	18,599	4,447,988
2015Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	41,299	16,184	12,448	6,599	563	909	20,732	5,277,786
2016Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	41,793	19,418	12,929	6,218	673	905	19,370	4,672,987
2017Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	38,495	17,246	18,190	5,442	593	889	19,497	4,908,072
2013Y	Duke Energy Progress, LLC	Duke Energy Corporation	714,642	61,419	130,114	44,157	51,420	1,800	349,517	60,204,063
2014Y	Duke Energy Progress, LLC	Duke Energy Corporation	778,772	54,336	178,322	49,288	4,646	4,171	296,661	62,871,047
2015Y	Duke Energy Progress, LLC	Duke Energy Corporation	838,358	38,719	138,636	52,930	3,708	5,624	299,516	64,880,560
2016Y	Duke Energy Progress, LLC	Duke Energy Corporation	769,221	46,483	165,907	47,900	4,480	6,307	340,666	69,052,154
2017Y	Duke Energy Progress, LLC	Duke Energy Corporation	700,775	38,809	153,498	46,977	4,083	6,208	314,453	66,822,736
2013Y	Southern California Edison Company	Edison International	575,021	316,012	461,916	191,060	598,329	14,170	1,190,561	90,552,978
2014Y	Southern California Edison Company	Edison International	292,094	243,690	494,881	177,028	629,097	11,300	1,164,602	116,437,195

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2015Y	Southern California Edison Company	Edison International	198,912	312,494	497,566	179,164	569,076	6,873	1,058,831	90,495,397
2016Y	Southern California Edison Company	Edison International	210,774	227,741	523,427	165,721	506,648	8,294	999,751	88,194,998
2017Y	Southern California Edison Company	Edison International	202,975	221,093	523,406	151,786	516,663	8,507	974,483	91,291,726
2013Y	El Paso Electric Company	El Paso Electric Company	108,855	16,765	21,740	17,602	200	0	125,348	10,884,241
2014Y	El Paso Electric Company	El Paso Electric Company	115,882	17,855	22,321	19,737	208	0	121,061	11,009,422
2015Y	El Paso Electric Company	El Paso Electric Company	121,637	19,120	22,881	19,148	222	0	116,878	10,915,601
2016Y	El Paso Electric Company	El Paso Electric Company	121,772	20,344	22,669	18,853	205	0	116,065	10,598,511
2017Y	El Paso Electric Company	El Paso Electric Company	123,198	21,078	22,224	19,432	205	0	117,862	10,904,754
2013Y	Tampa Electric Company	Emera Incorporated	127,725	12,705	48,426	23,344	47,774	1,431	145,127	18,639,927
2014Y	Tampa Electric Company	Emera Incorporated	139,500	13,840	49,304	29,204	46,848	560	132,051	18,784,911
2015Y	Tampa Electric Company	Emera Incorporated	148,732	14,223	52,920	26,215	46,989	803	123,601	19,121,762
2016Y	Tampa Electric Company	Emera Incorporated	153,589	16,125	52,325	34,013	37,694	689	123,403	19,440,142
2017Y	Tampa Electric Company	Emera Incorporated	135,729	14,411	48,089	39,070	38,208	551	119,348	19,425,418
2013Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA	NA	NA	NA	NA	NA
2014Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA	NA	NA	NA	NA	NA
2015Y	EL Investment Company, LLC	Entergy Corporation	182,161	37,473	41,061	24,090	6,034	1,295	119,789	31,482,380
2016Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA	NA	NA	NA	NA	NA
2017Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA	NA	NA	NA	NA	NA
2013Y	Entergy Arkansas, Inc.	Entergy Corporation	266,433	30,215	59,067	38,461	41,853	595	190,048	29,788,956
2014Y	Entergy Arkansas, Inc.	Entergy Corporation	281,655	43,309	68,806	36,880	68,221	774	181,182	31,350,781
2015Y	Entergy Arkansas, Inc.	Entergy Corporation	340,169	43,735	84,018	35,843	74,662	737	197,103	31,379,457
2016Y	Entergy Arkansas, Inc.	Entergy Corporation	346,461	40,348	77,522	34,220	66,675	611	185,467	29,363,790
2017Y	Entergy Arkansas, Inc.	Entergy Corporation	374,419	42,018	85,182	36,215	53,392	357	188,114	29,219,532
2013Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	182,715	28,052	26,253	17,739	2,468	2,409	137,996	27,130,595
2014Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	185,752	35,402	25,398	18,917	3,075	1,851	125,366	28,713,874
2015Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	139,861	28,828	21,667	12,662	3,683	1,218	94,552	21,426,698
2016Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	NA	NA	NA	NA	NA	NA	NA	NA
2017Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	NA	NA	NA	NA	NA	NA	NA	NA
2013Y	Entergy Louisiana, LLC	Entergy Corporation	217,860	36,229	49,808	31,816	3,353	2,147	169,784	34,156,904
2014Y	Entergy Louisiana, LLC	Entergy Corporation	227,387	50,685	51,360	34,157	4,986	2,047	158,484	37,479,888
2015Y	Entergy Louisiana, LLC	Entergy Corporation	106,279	23,696	21,714	11,956	2,770	1,302	86,301	14,743,976
2016Y	Entergy Louisiana, LLC	Entergy Corporation	440,050	83,851	80,745	46,151	12,876	3,396	284,408	63,634,403
2017Y	Entergy Louisiana, LLC	Entergy Corporation	459,538	93,619	87,570	51,910	14,704	3,406	285,412	61,747,129
2013Y	Entergy Mississippi, Inc.	Entergy Corporation	85,100	20,588	42,432	24,263	4,036	422	82,429	14,965,739
2014Y	Entergy Mississippi, Inc.	Entergy Corporation	72,995	21,980	33,675	24,275	4,873	1,339	93,348	16,054,977
2015Y	Entergy Mississippi, Inc.	Entergy Corporation	80,361	21,768	40,332	23,580	8,835	944	79,355	14,969,217
2016Y	Entergy Mississippi, Inc.	Entergy Corporation	70,690	21,512	44,578	21,021	6,801	587	80,510	14,462,253
2017Y	Entergy Mississippi, Inc.	Entergy Corporation	59,654	19,842	47,296	21,572	11,730	862	79,308	13,904,918
2013Y	Entergy New Orleans, LLC	Entergy Corporation	29,487	13,359	9,764	9,508	1,938	530	48,573	5,615,573
2014Y	Entergy New Orleans, LLC	Entergy Corporation	20,000	14,389	11,673	8,432	1,229	489	42,466	6,570,789
2015Y	Entergy New Orleans, LLC	Entergy Corporation	14,282	14,327	10,522	8,252	5,303	519	36,414	7,138,626
2016Y	Entergy New Orleans, LLC	Entergy Corporation	17,455	9,255	12,626	11,180	6,855	293	38,691	6,947,771
2017Y	Entergy New Orleans, LLC	Entergy Corporation	10,213	8,438	16,854	9,829	8,384	206	36,890	7,327,377
2013Y	Entergy Texas, Inc.	Entergy Corporation	56,402	27,746	34,215	17,710	12,601	337	102,265	23,811,698

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2014Y	Entergy Texas, Inc.	Entergy Corporation	56,065	30,688	33,681	18,046	8,046	418	80,724	22,661,605
2015Y	Entergy Texas, Inc.	Entergy Corporation	58,171	37,097	34,046	17,159	13,672	364	88,856	23,855,503
2016Y	Entergy Texas, Inc.	Entergy Corporation	47,088	28,775	32,599	16,632	9,509	227	80,734	23,892,632
2017Y	Entergy Texas, Inc.	Entergy Corporation	52,757	27,592	37,702	18,884	10,426	173	77,937	20,321,420
2013Y	Public Service Company of New Hampshire	Eversource Energy	45,816	36,701	60,787	29,001	18,751	42	108,755	9,118,546
2014Y	Public Service Company of New Hampshire	Eversource Energy	47,989	51,083	58,180	32,405	17,562	61	95,348	8,595,895
2015Y	Public Service Company of New Hampshire	Eversource Energy	53,638	33,959	64,753	34,226	16,026	24	95,309	8,441,532
2016Y	Public Service Company of New Hampshire	Eversource Energy	45,898	37,457	66,977	29,651	16,146	-10	89,542	8,388,691
2017Y	Public Service Company of New Hampshire	Eversource Energy	45,860	50,674	71,005	28,814	16,301	0	87,033	8,116,389
2013Y	Monongahela Power Company	FirstEnergy Corp.	69,442	104,745	34,233	15,100	3,520	0	3,568	10,816,852
2014Y	Monongahela Power Company	FirstEnergy Corp.	92,664	244,607	60,903	15,506	3,599	0	103,251	17,361,198
2015Y	Monongahela Power Company	FirstEnergy Corp.	93,540	140,798	67,261	21,219	3,889	13	49,864	16,163,874
2016Y	Monongahela Power Company	FirstEnergy Corp.	105,784	107,056	65,326	16,539	3,689	47	45,148	17,434,322
2017Y	Monongahela Power Company	FirstEnergy Corp.	104,487	87,565	65,980	18,017	5,040	97	88,527	17,497,075
2013Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	916	10,006	44,377	16,190	38,802	336	86,177	2,761,676
2014Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	1,007	11,048	44,142	19,691	43,955	270	82,731	2,623,309
2015Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	1,015	11,512	44,594	20,136	48,387	54	68,770	2,608,207
2016Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	1,040	11,238	44,997	17,538	42,612	11	68,939	2,684,357
2017Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	1,125	10,636	50,433	18,023	45,718	14	70,713	2,602,989
2013Y	Tucson Electric Power Company	Fortis Inc.	209,776	15,350	21,731	18,213	15,663	0	93,257	13,025,375
2014Y	Tucson Electric Power Company	Fortis Inc.	217,090	16,560	24,117	17,568	13,048	0	102,590	13,311,011
2015Y	Tucson Electric Power Company	Fortis Inc.	179,879	24,317	22,407	17,871	15,282	0	106,428	14,279,396
2016Y	Tucson Electric Power Company	Fortis Inc.	173,377	24,381	23,432	19,668	20,645	0	111,249	13,718,397
2017Y	Tucson Electric Power Company	Fortis Inc.	178,733	30,952	23,490	20,583	16,212	0	115,191	13,442,595
2013Y	UNS Electric, Inc.	Fortis Inc.	1,643	13,494	6,076	4,338	4,222	0	11,529	2,230,041
2014Y	UNS Electric, Inc.	Fortis Inc.	2,129	12,453	5,497	4,717	3,734	0	9,469	1,982,714
2015Y	UNS Electric, Inc.	Fortis Inc.	2,514	20,886	5,245	3,978	3,990	0	9,472	1,746,289
2016Y	UNS Electric, Inc.	Fortis Inc.	1,903	21,802	5,760	4,069	4,625	0	11,116	1,762,853
2017Y	UNS Electric, Inc.	Fortis Inc.	3,436	17,425	6,926	4,103	4,007	0	10,205	1,916,799
2013Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	189,884	53,986	53,615	19,211	13,659	423	155,758	21,683,329
2014Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	193,296	64,368	51,169	19,055	17,553	403	161,898	22,472,307
2015Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	182,519	75,630	53,422	20,274	32,898	470	160,805	20,796,733
2016Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	187,109	72,526	55,971	19,997	49,104	487	168,097	21,433,876
2017Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	179,727	85,899	56,071	20,531	43,008	574	156,680	21,322,723
2013Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	42,115	21,259	29,003	12,307	14,906	224	74,537	8,413,828
2014Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	41,437	37,937	32,301	12,119	21,176	219	74,615	8,511,766
2015Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	45,251	39,570	31,845	12,314	36,440	263	79,679	8,385,574
2016Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	48,570	37,371	34,872	12,344	31,427	274	81,446	8,465,650
2017Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	46,413	47,345	35,072	12,350	41,835	309	85,028	8,386,821
2013Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	3,005	43,677	128,820	60,942	76,423	5,734	118,188	19,115,201
2014Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	2,454	44,347	140,939	61,737	86,451	7,143	115,355	18,690,994
2015Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	2,500	46,526	126,688	71,348	95,109	7,165	111,757	17,887,199
2016Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	2,482	47,010	184,037	57,894	76,755	5,892	96,599	17,455,920
2017Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	2,402	42,068	230,586	61,159	86,040	7,986	88,542	16,633,428

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Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Total Trans. O&M Expense (\$000)	Total Distrib. O&M Expense (\$000)	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	4,381	11,098	45,602	26,811	43,239	2,862	72,913	9,024,632
2014Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	3,483	11,112	46,080	27,917	46,387	2,760	55,068	7,970,527
2015Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	3,673	16,811	52,426	35,119	51,733	5,876	54,907	7,319,681
2016Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	3,641	12,512	54,581	26,317	41,765	4,262	40,803	7,365,999
2017Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	3,384	10,116	65,432	29,911	46,488	5,033	39,870	7,216,272
2013Y	Idaho Power Co.	IDACORP, Inc.	86,431	26,450	46,979	21,841	44,062	0	151,020	16,302,681
2014Y	Idaho Power Co.	IDACORP, Inc.	86,811	27,336	46,305	25,549	35,814	0	155,933	16,312,786
2015Y	Idaho Power Co.	IDACORP, Inc.	90,116	27,353	48,358	21,157	39,575	80	140,370	15,518,629
2016Y	Idaho Power Co.	IDACORP, Inc.	90,883	25,408	50,033	20,845	42,924	0	146,887	15,381,629
2017Y	Idaho Power Co.	IDACORP, Inc.	91,581	25,279	50,643	22,428	46,084	0	142,691	16,706,603
2013Y	Kentucky Utilities Company	LKE	126,521	27,779	56,507	28,190	19,563	42	111,709	21,629,993
2014Y	Kentucky Utilities Company	LKE	151,052	30,428	60,874	34,679	18,365	94	99,819	21,986,858
2015Y	Kentucky Utilities Company	LKE	164,471	31,973	56,957	32,619	18,532	307	117,399	21,810,131
2016Y	Kentucky Utilities Company	LKE	158,852	31,677	57,318	32,262	22,509	817	108,557	21,437,963
2017Y	Kentucky Utilities Company	LKE	157,247	34,598	56,162	32,654	22,093	792	109,507	20,497,797
2013Y	Louisville Gas and Electric Company	LKE	121,061	14,397	46,074	11,099	15,059	42	84,240	14,478,316
2014Y	Louisville Gas and Electric Company	LKE	121,235	14,746	51,335	13,768	15,142	47	79,526	15,373,731
2015Y	Louisville Gas and Electric Company	LKE	115,873	14,636	49,032	12,601	14,306	610	81,077	13,502,213
2016Y	Louisville Gas and Electric Company	LKE	99,121	15,057	46,816	12,343	16,461	920	79,109	13,156,493
2017Y	Louisville Gas and Electric Company	LKE	97,987	15,343	45,209	12,706	16,456	1,032	76,486	13,133,134
2013Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	24,544	10,729	15,581	3,900	255	139	20,293	3,195,882
2014Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	25,377	13,968	15,440	4,111	261	166	20,256	3,331,202
2015Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	28,437	13,469	15,747	4,147	253	154	21,966	3,316,058
2016Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	33,014	34,017	15,619	4,897	256	107	24,873	3,303,555
2017Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	34,605	36,860	15,355	4,558	245	111	26,686	3,346,441
2013Y	Florida Power & Light Company	NextEra Energy, Inc.	651,527	90,853	265,813	134,779	137,369	4,799	407,062	107,373,794
2014Y	Florida Power & Light Company	NextEra Energy, Inc.	632,335	98,718	268,585	118,415	149,974	3,287	354,091	112,929,729
2015Y	Florida Power & Light Company	NextEra Energy, Inc.	655,886	103,510	274,770	110,574	102,185	4,597	347,310	119,405,262
2016Y	Florida Power & Light Company	NextEra Energy, Inc.	643,878	78,459	271,303	103,438	53,636	3,730	335,632	119,279,691
2017Y	Florida Power & Light Company	NextEra Energy, Inc.	628,288	98,668	1,446,795	97,736	57,440	8,069	443,699	117,873,183
2013Y	Northern Indiana Public Service Company	NiSource Inc.	164,651	29,449	48,247	21,117	576	923	183,441	17,468,011
2014Y	Northern Indiana Public Service Company	NiSource Inc.	175,209	31,374	43,588	20,345	505	967	202,804	18,186,288
2015Y	Northern Indiana Public Service Company	NiSource Inc.	182,919	35,857	41,331	19,140	371	928	211,596	16,758,427
2016Y	Northern Indiana Public Service Company	NiSource Inc.	211,800	44,263	43,824	17,248	543	1,222	220,923	16,831,194
2017Y	Northern Indiana Public Service Company	NiSource Inc.	233,456	46,177	49,602	15,422	739	1,484	221,425	16,725,564
2013Y	NorthWestern Corporation	NorthWestern Corporation	25,594	29,595	53,600	11,867	6,416	573	64,655	9,519,519
2014Y	NorthWestern Corporation	NorthWestern Corporation	34,844	28,579	50,360	12,706	6,400	615	64,785	10,006,908
2015Y	NorthWestern Corporation	NorthWestern Corporation	57,721	27,739	49,950	11,615	6,693	554	76,796	11,027,880
2016Y	NorthWestern Corporation	NorthWestern Corporation	47,994	30,330	43,025	10,627	6,601	503	78,502	9,037,846
2017Y	NorthWestern Corporation	NorthWestern Corporation	50,120	43,449	44,613	13,096	6,031	522	82,653	8,924,244
2013Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	122,705	109,160	80,209	22,210	31,269	6,107	111,759	28,578,159
2014Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	125,035	122,725	80,858	21,054	35,892	8,242	118,327	30,234,927
2015Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	119,512	133,786	74,150	20,171	39,927	4,682	133,349	28,867,056
2016Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	122,547	168,202	80,041	21,973	50,081	4,713	141,320	29,762,475

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2017Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	121,907	168,890	96,565	23,292	50,967	4,749	137,559	28,111,471
2013Y	Otter Tail Power Company	Otter Tail Corporation	27,024	19,286	16,699	13,422	8,132	623	39,523	6,219,751
2014Y	Otter Tail Power Company	Otter Tail Corporation	32,535	23,817	16,511	13,358	8,029	493	41,787	5,470,896
2015Y	Otter Tail Power Company	Otter Tail Corporation	30,547	27,080	15,514	12,791	8,864	313	42,025	4,709,464
2016Y	Otter Tail Power Company	Otter Tail Corporation	31,649	32,582	16,791	12,476	10,781	345	44,695	4,955,630
2017Y	Otter Tail Power Company	Otter Tail Corporation	31,100	31,130	17,762	12,912	9,358	339	45,577	5,040,591
2013Y	Pacific Gas and Electric Company	PG&E Corporation	622,080	227,245	629,019	248,874	616,738	13,922	978,665	88,322,913
2014Y	Pacific Gas and Electric Company	PG&E Corporation	591,994	243,048	675,094	216,187	614,606	10,382	1,018,104	88,189,685
2015Y	Pacific Gas and Electric Company	PG&E Corporation	675,716	286,712	829,694	222,794	631,523	2,979	1,052,736	87,981,023
2016Y	Pacific Gas and Electric Company	PG&E Corporation	693,646	296,115	933,331	212,307	611,149	2,273	1,329,265	85,067,412
2017Y	Pacific Gas and Electric Company	PG&E Corporation	589,784	300,976	726,324	215,958	512,904	1,195	1,178,530	88,175,650
2013Y	Arizona Public Service Company	Pinnacle West Capital Corporation	416,257	72,068	96,398	52,597	77,723	9,332	213,793	32,087,545
2014Y	Arizona Public Service Company	Pinnacle West Capital Corporation	438,186	79,638	92,229	52,544	60,160	9,974	192,118	32,951,388
2015Y	Arizona Public Service Company	Pinnacle West Capital Corporation	438,805	83,335	95,469	52,455	55,010	11,296	167,749	33,628,854
2016Y	Arizona Public Service Company	Pinnacle West Capital Corporation	406,108	81,642	104,812	54,257	59,023	12,389	186,773	31,928,046
2017Y	Arizona Public Service Company	Pinnacle West Capital Corporation	414,065	82,704	109,284	59,041	54,410	13,872	183,317	30,910,170
2013Y	Public Service Company of New Mexico	PNM Resources, Inc.	181,117	38,078	24,289	15,288	961	5,299	135,149	12,001,980
2014Y	Public Service Company of New Mexico	PNM Resources, Inc.	190,525	38,628	21,773	15,368	748	4,814	131,296	11,836,387
2015Y	Public Service Company of New Mexico	PNM Resources, Inc.	180,839	37,692	22,882	14,956	1,283	4,792	140,392	11,541,512
2016Y	Public Service Company of New Mexico	PNM Resources, Inc.	141,433	34,985	19,744	14,810	644	4,099	149,173	12,280,191
2017Y	Public Service Company of New Mexico	PNM Resources, Inc.	132,281	36,621	20,667	15,166	457	4,385	151,950	12,454,143
2013Y	Portland General Electric Company	Portland General Electric Company	98,303	88,564	86,417	48,824	13,288	0	157,719	21,226,863
2014Y	Portland General Electric Company	Portland General Electric Company	115,252	96,567	99,839	51,831	14,179	0	161,772	21,080,082
2015Y	Portland General Electric Company	Portland General Electric Company	122,543	98,092	101,417	54,700	15,058	0	171,798	20,859,230
2016Y	Portland General Electric Company	Portland General Electric Company	126,752	95,365	116,611	56,434	14,192	0	176,471	21,247,271
2017Y	Portland General Electric Company	Portland General Electric Company	135,641	104,282	127,637	58,493	15,696	0	190,763	21,328,945
2013Y	Puget Sound Energy, Inc.	Puget Holdings LLC	116,054	114,098	77,322	51,298	105,724	288	109,153	26,265,216
2014Y	Puget Sound Energy, Inc.	Puget Holdings LLC	112,835	130,002	84,585	59,106	113,232	526	108,863	21,968,767
2015Y	Puget Sound Energy, Inc.	Puget Holdings LLC	117,453	130,460	82,427	49,097	118,438	389	110,378	28,183,148
2016Y	Puget Sound Energy, Inc.	Puget Holdings LLC	126,238	134,458	86,298	48,803	114,318	384	120,326	29,143,765
2017Y	Puget Sound Energy, Inc.	Puget Holdings LLC	125,003	138,493	76,282	49,274	126,051	769	128,643	27,227,367
2013Y	South Carolina Electric & Gas Co.	SCANA Corporation	187,531	18,376	46,623	46,737	7,698	1,625	163,369	22,326,578
2014Y	South Carolina Electric & Gas Co.	SCANA Corporation	184,994	21,707	51,470	48,801	9,578	1,636	169,415	23,332,942
2015Y	South Carolina Electric & Gas Co.	SCANA Corporation	184,858	17,983	56,138	47,994	13,430	1,755	166,943	23,114,845
2016Y	South Carolina Electric & Gas Co.	SCANA Corporation	189,161	17,972	55,248	47,831	14,770	1,425	191,727	23,471,194
2017Y	South Carolina Electric & Gas Co.	SCANA Corporation	193,840	23,053	55,485	46,520	14,367	1,469	166,141	22,879,069
2013Y	San Diego Gas & Electric Co.	Sempra Energy	351,746	95,859	128,782	53,797	148,373	0	628,738	32,916,382
2014Y	San Diego Gas & Electric Co.	Sempra Energy	98,921	81,094	112,219	43,897	157,667	0	590,458	30,952,957
2015Y	San Diego Gas & Electric Co.	Sempra Energy	46,228	85,341	141,442	45,453	173,383	0	455,443	33,132,033
2016Y	San Diego Gas & Electric Co.	Sempra Energy	44,657	87,877	141,031	44,111	208,005	0	400,172	29,443,890
2017Y	San Diego Gas & Electric Co.	Sempra Energy	40,121	87,096	144,376	46,369	174,580	0	425,629	29,300,970
2013Y	Alabama Power Company	Southern Company	553,407	60,633	170,411	90,103	34,907	9,154	351,531	66,309,626
2014Y	Alabama Power Company	Southern Company	676,877	73,289	188,700	100,081	38,459	8,779	360,311	67,155,314
2015Y	Alabama Power Company	Southern Company	671,108	71,603	177,116	97,311	40,201	9,180	413,430	63,847,336

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2016Y	Alabama Power Company	Southern Company	693,994	81,966	184,276	94,943	42,361	6,972	387,122	63,873,423
2017Y	Alabama Power Company	Southern Company	737,698	88,563	239,283	89,807	48,938	6,618	426,571	63,290,561
2013Y	Georgia Power Company	Southern Company	590,054	107,047	237,660	135,041	72,749	43,330	445,491	84,726,779
2014Y	Georgia Power Company	Southern Company	706,854	132,535	302,102	154,531	88,588	55,105	448,174	89,190,865
2015Y	Georgia Power Company	Southern Company	850,183	108,279	276,806	154,823	94,667	56,593	463,892	87,859,128
2016Y	Georgia Power Company	Southern Company	692,145	139,315	302,244	154,466	98,184	63,588	472,842	89,686,468
2017Y	Georgia Power Company	Southern Company	598,495	105,047	268,673	137,123	83,472	58,694	410,706	86,478,222
2013Y	Gulf Power Company	Southern Company	105,051	20,792	42,915	21,295	35,993	1,186	80,099	14,909,545
2014Y	Gulf Power Company	Southern Company	132,376	25,233	46,843	25,421	25,819	1,460	81,740	16,028,868
2015Y	Gulf Power Company	Southern Company	130,188	25,807	45,678	24,629	30,098	1,391	91,589	14,031,937
2016Y	Gulf Power Company	Southern Company	124,416	26,960	45,456	25,341	23,677	1,132	85,198	14,616,769
2017Y	Gulf Power Company	Southern Company	132,590	26,683	48,030	26,321	27,078	1,391	92,689	15,445,454
2013Y	Mississippi Power Company	Southern Company	121,325	14,835	34,358	17,838	5,798	4,175	83,327	14,591,834
2014Y	Mississippi Power Company	Southern Company	123,594	13,197	36,912	16,158	7,922	4,941	88,045	17,059,643
2015Y	Mississippi Power Company	Southern Company	103,186	11,705	32,805	13,746	10,273	4,742	95,356	16,487,788
2016Y	Mississippi Power Company	Southern Company	113,417	15,573	36,118	16,769	10,008	4,293	100,982	14,866,485
2017Y	Mississippi Power Company	Southern Company	107,505	11,013	31,566	15,719	9,078	2,884	87,559	15,283,882
2013Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	73,907	13,676	15,196	6,427	619	13,259	39,735	5,993,477
2014Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	77,206	15,566	15,881	5,880	592	12,227	39,876	6,240,584
2015Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	69,734	17,885	15,461	6,189	323	8,294	36,736	5,795,918
2016Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	68,618	21,206	15,350	5,908	617	10,444	38,839	5,610,259
2017Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	64,362	17,802	16,055	6,402	552	9,117	42,948	5,220,819
2013Y	Kansas Gas and Electric Company	Westar Energy, Inc.	155,715	100,515	41,913	12,619	1,827	0	103,866	10,605,055
2014Y	Kansas Gas and Electric Company	Westar Energy, Inc.	158,083	124,606	45,361	15,741	1,765	0	99,352	10,800,465
2015Y	Kansas Gas and Electric Company	Westar Energy, Inc.	144,822	125,341	36,881	13,961	1,713	1	106,387	10,761,626
2016Y	Kansas Gas and Electric Company	Westar Energy, Inc.	148,087	127,328	42,611	15,625	1,621	0	102,900	11,297,034
2017Y	Kansas Gas and Electric Company	Westar Energy, Inc.	140,840	132,014	40,354	14,004	1,559	0	99,142	10,847,878
2013Y	Westar Energy (KPL)	Westar Energy, Inc.	86,267	102,195	59,147	14,214	1,851	0	97,746	17,484,374
2014Y	Westar Energy (KPL)	Westar Energy, Inc.	94,279	126,821	49,269	13,976	1,868	0	107,569	18,531,716
2015Y	Westar Energy (KPL)	Westar Energy, Inc.	86,642	129,031	49,632	15,837	1,933	1	114,098	17,180,535
2016Y	Westar Energy (KPL)	Westar Energy, Inc.	89,882	130,856	45,165	17,854	1,935	0	107,220	16,555,817
2017Y	Westar Energy (KPL)	Westar Energy, Inc.	91,347	133,385	42,538	17,040	1,942	0	100,252	18,790,662
2013Y	Northern States Power Company - MN	Xcel Energy Inc.	539,629	244,340	121,107	55,250	84,666	18	254,713	37,474,524
2014Y	Northern States Power Company - MN	Xcel Energy Inc.	575,094	272,848	117,778	58,047	124,080	9	257,214	39,129,144
2015Y	Northern States Power Company - MN	Xcel Energy Inc.	546,532	309,442	106,452	55,350	69,454	2	263,079	39,484,126
2016Y	Northern States Power Company - MN	Xcel Energy Inc.	541,210	355,752	110,969	55,996	89,936	1	265,532	41,519,021
2017Y	Northern States Power Company - MN	Xcel Energy Inc.	509,376	369,339	111,166	55,401	106,677	5	269,990	40,720,489
2013Y	Northern States Power Company - WI	Xcel Energy Inc.	21,350	47,064	25,725	10,015	10,571	82	41,603	6,562,368
2014Y	Northern States Power Company - WI	Xcel Energy Inc.	21,835	58,765	24,836	10,384	11,134	80	41,794	6,750,889
2015Y	Northern States Power Company - WI	Xcel Energy Inc.	20,208	46,131	24,951	9,835	11,158	72	44,911	6,647,300
2016Y	Northern States Power Company - WI	Xcel Energy Inc.	19,519	66,586	25,096	9,336	12,318	55	41,367	6,641,542
2017Y	Northern States Power Company - WI	Xcel Energy Inc.	20,257	80,072	26,246	9,663	12,252	53	44,065	6,727,740
2013Y	Public Service Company of Colorado	Xcel Energy Inc.	185,844	61,572	103,101	38,200	125,572	641	167,001	33,450,187
2014Y	Public Service Company of Colorado	Xcel Energy Inc.	182,309	58,061	94,666	37,413	130,409	528	163,014	32,498,488

Notes: Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.
 Represents only Vertically-Integrated Utilities

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Total Trans. O&M Expense (\$000)	Total Distrib. O&M Expense (\$000)	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2015Y	Public Service Company of Colorado	Xcel Energy Inc.	181,422	52,952	92,990	33,293	121,395	589	166,379	32,396,474
2016Y	Public Service Company of Colorado	Xcel Energy Inc.	169,248	53,338	96,620	34,860	107,952	651	165,928	34,472,722
2017Y	Public Service Company of Colorado	Xcel Energy Inc.	157,317	54,763	97,636	34,160	113,706	627	177,229	36,486,396
2013Y	Southwestern Public Service Company	Xcel Energy Inc.	94,795	115,728	35,179	15,423	15,588	189	96,828	28,292,788
2014Y	Southwestern Public Service Company	Xcel Energy Inc.	97,876	126,490	36,160	15,673	15,174	188	100,214	28,265,391
2015Y	Southwestern Public Service Company	Xcel Energy Inc.	105,699	145,594	38,256	15,664	16,439	149	107,892	28,414,831
2016Y	Southwestern Public Service Company	Xcel Energy Inc.	95,099	173,307	30,994	20,045	19,019	136	101,761	28,383,129
2017Y	Southwestern Public Service Company	Xcel Energy Inc.	90,072	191,522	36,120	18,382	18,484	128	105,746	27,124,064
		Total	67,941,511	23,661,254	34,166,002	13,346,944	18,182,117	901,974	60,604,922	9,401,252,322

Generation Rankings [2013-2017] Source: SNL

Holding Company	Non Fuel O&M	Net Generation (MWh)	Non-fuel O&M/Net Gen	Ranking
Iberdrola, S.A.	31,405,000	70,139,534	0.45	1
NextEra Energy, Inc.	3,211,914,000	575,259,683	5.58	2
OGE Energy Corp.	611,706,000	107,763,653	5.68	3
IDACORP, Inc.	445,822,000	65,279,206	6.83	4
Berkshire Hathaway Inc.	3,806,398,000	545,388,710	6.98	5
Cleco Partners LP	421,371,000	56,962,384	7.40	6
Alliant Energy Corporation	692,492,000	93,129,152	7.44	7
Ameren Corporation	1,563,045,000	208,840,970	7.48	8
Emera Incorporated	705,275,000	93,498,595	7.54	9
LKE	1,313,419,953	169,651,107	7.74	10
ALLETE, Inc.	379,907,000	47,128,681	8.06	11
Algonquin Power & Utilities Corp.	177,653,000	21,964,593	8.09	12
Avista Corporation	305,503,000	37,483,055	8.15	13
CMS Energy Corporation	732,466,000	87,832,810	8.34	14
NorthWestern Corporation	216,273,000	24,427,979	8.85	15
SCANA Corporation	1,008,594,000	113,329,114	8.90	16
Great Plains Energy Incorporated	1,156,321,000	119,899,377	9.64	17
Otter Tail Corporation	152,855,000	15,289,737	10.00	18
Puget Holdings LLC	597,583,000	59,212,529	10.09	19
Portland General Electric Co	598,491,000	59,091,390	10.13	20
Westar Energy, Inc.	1,219,893,000	119,625,576	10.20	21
Southern Company	8,231,012,000	799,420,182	10.30	22
AES Corporation	1,283,281,000	122,636,056	10.46	23
AEP	5,747,192,000	543,870,739	10.57	24
Duke Energy Corporation	11,109,825,000	1,042,824,027	10.65	25
MGE Energy, Inc.	123,231,000	10,962,864	11.24	26
Xcel Energy Inc.	4,174,691,000	362,060,608	11.53	27
Entergy Corporation	5,233,741,000	453,433,196	11.54	28

Generation Rankings [2013-2017] Source: SNL

Holding Company	Non Fuel O&M	Net Generation (MWh)	Non-fuel O&M/Net Gen	Ranking
Black Hills Corporation	157,654,000	13,221,742	11.92	29
MDU Resources Group, Inc.	145,977,000	12,105,501	12.06	30
DTE Energy Company	2,458,520,000	199,945,050	12.30	31
Dominion Energy, Inc.	4,448,916,000	360,334,594	12.35	32
El Paso Electric Company	591,344,000	46,121,872	12.82	33
Wisconsin River Power Company	9,897,000	719,940	13.75	34
Vectren Corporation	353,827,000	24,423,636	14.49	35
NiSource Inc.	968,035,000	65,302,800	14.82	36
PNM Resources, Inc.	826,195,000	51,248,675	16.12	37
Pinnacle West Capital Corporation	2,113,421,000	130,365,234	16.21	38
Fortis Inc.	975,583,000	57,979,323	16.83	39
PG&E Corporation	3,173,220,000	158,099,798	20.07	40
Caisse de dépôt	81,060,000	3,939,143	20.58	41
Edison International	1,479,776,000	71,524,523	20.69	42
WEC Energy Group, Inc.	3,652,165,000	173,560,614	21.04	43
National Grid plc	467,410,000	22,207,874	21.05	44
FirstEnergy Corp.	2,305,128,000	106,354,119	21.67	45
Balfour Beatty Infrastructure	13,363,000	591,939	22.57	46
Sempra Energy	581,673,000	23,532,613	24.72	47
Eversource Energy	240,195,000	8,132,393	29.54	48
Consolidated Edison, Inc.	738,019,000	15,047,088	49.05	49
Grand Total	81,032,737,953	7,571,163,978		

Q1	8.15
Q2	10.65
Q3	16.12
Industry Avg.	10.70

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.
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Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2013Y	Dayton Power and Light Company	AES Corporation	118,804	14,813,091
2014Y	Dayton Power and Light Company	AES Corporation	123,183	12,822,963
2015Y	Dayton Power and Light Company	AES Corporation	126,765	10,618,730
2016Y	Dayton Power and Light Company	AES Corporation	116,260	11,096,105
2017Y	Dayton Power and Light Company	AES Corporation	82,181	7,610,986
2013Y	Indianapolis Power & Light Company	AES Corporation	135,886	15,219,200
2014Y	Indianapolis Power & Light Company	AES Corporation	132,103	15,873,565
2015Y	Indianapolis Power & Light Company	AES Corporation	154,809	12,526,781
2016Y	Indianapolis Power & Light Company	AES Corporation	149,247	11,437,551
2017Y	Indianapolis Power & Light Company	AES Corporation	144,043	10,617,084
2013Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	29,656	4,323,826
2014Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	32,415	3,807,870
2015Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	37,811	3,835,300
2016Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	37,151	4,727,423
2017Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	40,620	5,270,174
2013Y	ALLETE (Minnesota Power)	ALLETE, Inc.	81,069	9,555,798
2014Y	ALLETE (Minnesota Power)	ALLETE, Inc.	80,954	9,386,748
2015Y	ALLETE (Minnesota Power)	ALLETE, Inc.	78,932	9,555,128
2016Y	ALLETE (Minnesota Power)	ALLETE, Inc.	72,982	9,711,128
2017Y	ALLETE (Minnesota Power)	ALLETE, Inc.	65,970	8,919,879
2013Y	Interstate Power and Light Company	Alliant Energy Corporation	60,571	8,285,902
2014Y	Interstate Power and Light Company	Alliant Energy Corporation	67,416	8,794,580
2015Y	Interstate Power and Light Company	Alliant Energy Corporation	67,248	8,793,970
2016Y	Interstate Power and Light Company	Alliant Energy Corporation	60,987	8,072,355
2017Y	Interstate Power and Light Company	Alliant Energy Corporation	62,785	9,980,512
2013Y	Wisconsin Power and Light Company	Alliant Energy Corporation	80,423	10,386,877

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Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2014Y	Wisconsin Power and Light Company	Alliant Energy Corporation	84,087	9,596,204
2015Y	Wisconsin Power and Light Company	Alliant Energy Corporation	73,059	10,612,929
2016Y	Wisconsin Power and Light Company	Alliant Energy Corporation	69,547	9,061,588
2017Y	Wisconsin Power and Light Company	Alliant Energy Corporation	66,369	9,544,235
2013Y	Union Electric Company	Ameren Corporation	309,718	43,212,928
2014Y	Union Electric Company	Ameren Corporation	315,539	43,473,514
2015Y	Union Electric Company	Ameren Corporation	347,345	42,423,476
2016Y	Union Electric Company	Ameren Corporation	296,877	38,576,901
2017Y	Union Electric Company	Ameren Corporation	293,566	41,154,151
2013Y	AEP Generating Company	American Electric Power Company, Inc.	123,953	10,546,276
2014Y	AEP Generating Company	American Electric Power Company, Inc.	129,075	11,675,906
2015Y	AEP Generating Company	American Electric Power Company, Inc.	134,770	12,994,269
2016Y	AEP Generating Company	American Electric Power Company, Inc.	128,438	13,491,086
2017Y	AEP Generating Company	American Electric Power Company, Inc.	112,270	6,069,003
2013Y	AEP Texas North Company	American Electric Power Company, Inc.	15,551	2,435,181
2014Y	AEP Texas North Company	American Electric Power Company, Inc.	19,983	1,897,864
2015Y	AEP Texas North Company	American Electric Power Company, Inc.	17,338	1,212,431
2016Y	AEP Texas North Company	American Electric Power Company, Inc.	13,325	1,381,335
2017Y	AEP Texas, Inc.	American Electric Power Company, Inc.	12,384	923,586
2013Y	Appalachian Power Company	American Electric Power Company, Inc.	194,328	21,383,209
2014Y	Appalachian Power Company	American Electric Power Company, Inc.	252,109	29,428,638
2015Y	Appalachian Power Company	American Electric Power Company, Inc.	226,788	27,839,387
2016Y	Appalachian Power Company	American Electric Power Company, Inc.	219,726	27,096,755
2017Y	Appalachian Power Company	American Electric Power Company, Inc.	211,709	25,686,531
2013Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	375,469	26,425,406
2014Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	407,189	28,700,648

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Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2015Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	392,669	24,137,360
2016Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	368,740	21,255,381
2017Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	360,396	23,185,309
2013Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	67,279	5,511,874
2014Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	67,921	5,968,451
2015Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	67,014	5,214,734
2016Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	63,925	5,012,711
2017Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	65,209	6,064,762
2013Y	Kentucky Power Company	American Electric Power Company, Inc.	28,083	2,764,447
2014Y	Kentucky Power Company	American Electric Power Company, Inc.	64,696	8,944,397
2015Y	Kentucky Power Company	American Electric Power Company, Inc.	52,830	5,821,424
2016Y	Kentucky Power Company	American Electric Power Company, Inc.	45,534	4,372,069
2017Y	Kentucky Power Company	American Electric Power Company, Inc.	43,338	4,407,133
2013Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	75,192	4,966,617
2014Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	76,444	5,441,556
2015Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	75,437	3,680,528
2016Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	68,000	4,934,165
2017Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	67,219	5,899,936
2013Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	75,169	12,498,357
2014Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	82,641	10,389,861
2015Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	79,419	9,452,305
2016Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	76,674	6,357,040
2017Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	73,654	5,214,296
2013Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	131,631	23,126,139
2014Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	142,741	22,949,594
2015Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	146,424	20,266,536

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.

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Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2016Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	155,056	18,582,835
2017Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	139,452	18,263,411
2013Y	Alaska Electric Light and Power Company	Avista Corporation	2,409	148,485
2014Y	Alaska Electric Light and Power Company	Avista Corporation	2,643	143,844
2015Y	Alaska Electric Light and Power Company	Avista Corporation	2,508	152,097
2016Y	Alaska Electric Light and Power Company	Avista Corporation	2,331	149,485
2017Y	Alaska Electric Light and Power Company	Avista Corporation	3,056	130,872
2013Y	Avista Corporation	Avista Corporation	56,278	7,029,105
2014Y	Avista Corporation	Avista Corporation	56,655	7,395,385
2015Y	Avista Corporation	Avista Corporation	55,064	7,417,221
2016Y	Avista Corporation	Avista Corporation	62,028	7,462,256
2017Y	Avista Corporation	Avista Corporation	62,531	7,454,305
2013Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	2,813	76,295
2014Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	2,734	125,755
2015Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	2,295	113,142
2016Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	2,765	127,487
2017Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	2,756	149,260
2013Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	242,128	29,836,430
2014Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	249,240	30,155,456
2015Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	252,203	29,215,286
2016Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	232,144	29,331,423
2017Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	275,887	30,740,402
2013Y	Nevada Power Company	Berkshire Hathaway Inc.	114,834	17,294,612
2014Y	Nevada Power Company	Berkshire Hathaway Inc.	85,771	17,026,153
2015Y	Nevada Power Company	Berkshire Hathaway Inc.	80,039	18,743,765
2016Y	Nevada Power Company	Berkshire Hathaway Inc.	82,773	18,527,929

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Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2017Y	Nevada Power Company	Berkshire Hathaway Inc.	73,355	17,363,637
2013Y	PacifiCorp	Berkshire Hathaway Inc.	404,762	58,376,572
2014Y	PacifiCorp	Berkshire Hathaway Inc.	410,762	60,205,324
2015Y	PacifiCorp	Berkshire Hathaway Inc.	374,342	56,331,039
2016Y	PacifiCorp	Berkshire Hathaway Inc.	386,433	53,570,341
2017Y	PacifiCorp	Berkshire Hathaway Inc.	368,299	52,431,037
2013Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	36,047	5,142,897
2014Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	30,855	6,039,585
2015Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	38,561	5,201,809
2016Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	34,481	5,080,877
2017Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	33,482	4,774,136
2013Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	4,292	293,523
2014Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	3,740	189,260
2015Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	3,837	141,776
2016Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	5,146	234,119
2017Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	5,574	397,965
2013Y	Black Hills Power, Inc.	Black Hills Corporation	19,144	1,801,857
2014Y	Black Hills Power, Inc.	Black Hills Corporation	17,967	1,636,045
2015Y	Black Hills Power, Inc.	Black Hills Corporation	17,920	1,618,688
2016Y	Black Hills Power, Inc.	Black Hills Corporation	18,233	1,585,870
2017Y	Black Hills Power, Inc.	Black Hills Corporation	21,366	1,581,915
2013Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	6,409	688,318
2014Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	7,053	709,754
2015Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	9,286	739,277
2016Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	8,334	805,351
2017Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	9,353	798,024

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2013Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	16,049	780,810
2014Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	16,489	780,329
2015Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	15,524	835,606
2016Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	15,537	743,271
2017Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	17,461	799,127
2013Y	Cleco Power LLC	Cleco Partners LP	75,683	9,735,902
2014Y	Cleco Power LLC	Cleco Partners LP	89,393	9,857,122
2015Y	Cleco Power LLC	Cleco Partners LP	82,444	12,564,036
2016Y	Cleco Power LLC	Cleco Partners LP	89,044	12,758,553
2017Y	Cleco Power LLC	Cleco Partners LP	84,807	12,046,771
2013Y	Consumers Energy Company	CMS Energy Corporation	149,242	17,702,210
2014Y	Consumers Energy Company	CMS Energy Corporation	154,767	18,112,590
2015Y	Consumers Energy Company	CMS Energy Corporation	153,579	19,938,691
2016Y	Consumers Energy Company	CMS Energy Corporation	146,477	16,332,123
2017Y	Consumers Energy Company	CMS Energy Corporation	128,401	15,747,196
2013Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	142,781	3,184,924
2014Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	146,111	2,754,825
2015Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	164,824	2,928,723
2016Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	157,574	3,082,866
2017Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	126,729	3,095,750
2013Y	Virginia Electric and Power Company	Dominion Energy, Inc.	666,709	67,211,779
2014Y	Virginia Electric and Power Company	Dominion Energy, Inc.	1,244,953	67,367,785
2015Y	Virginia Electric and Power Company	Dominion Energy, Inc.	835,540	71,449,993
2016Y	Virginia Electric and Power Company	Dominion Energy, Inc.	983,460	80,237,294
2017Y	Virginia Electric and Power Company	Dominion Energy, Inc.	718,254	74,067,743
2013Y	DTE Electric Company	DTE Energy Company	467,019	41,690,842

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.

Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2014Y	DTE Electric Company	DTE Energy Company	473,232	40,855,473
2015Y	DTE Electric Company	DTE Energy Company	490,020	40,938,409
2016Y	DTE Electric Company	DTE Energy Company	555,782	37,652,486
2017Y	DTE Electric Company	DTE Energy Company	472,467	38,807,840
2013Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	814,070	83,727,269
2014Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	927,885	83,053,146
2015Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	967,351	82,652,210
2016Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	938,315	82,895,355
2017Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	862,540	81,700,915
2013Y	Duke Energy Florida, LLC	Duke Energy Corporation	198,702	33,858,740
2014Y	Duke Energy Florida, LLC	Duke Energy Corporation	224,282	34,758,994
2015Y	Duke Energy Florida, LLC	Duke Energy Corporation	227,289	35,018,629
2016Y	Duke Energy Florida, LLC	Duke Energy Corporation	215,910	33,756,279
2017Y	Duke Energy Florida, LLC	Duke Energy Corporation	203,837	36,107,645
2013Y	Duke Energy Indiana, LLC	Duke Energy Corporation	238,332	26,184,912
2014Y	Duke Energy Indiana, LLC	Duke Energy Corporation	296,486	26,115,488
2015Y	Duke Energy Indiana, LLC	Duke Energy Corporation	342,983	26,231,251
2016Y	Duke Energy Indiana, LLC	Duke Energy Corporation	334,891	27,097,612
2017Y	Duke Energy Indiana, LLC	Duke Energy Corporation	310,442	27,580,105
2013Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	38,223	3,682,139
2014Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	44,932	3,056,643
2015Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	41,299	4,454,859
2016Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	41,793	3,698,956
2017Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	38,495	4,282,897
2013Y	Duke Energy Progress, LLC	Duke Energy Corporation	714,642	55,806,705
2014Y	Duke Energy Progress, LLC	Duke Energy Corporation	778,772	59,570,127

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.
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Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2015Y	Duke Energy Progress, LLC	Duke Energy Corporation	838,358	61,853,417
2016Y	Duke Energy Progress, LLC	Duke Energy Corporation	769,221	64,286,169
2017Y	Duke Energy Progress, LLC	Duke Energy Corporation	700,775	61,393,565
2013Y	Southern California Edison Company	Edison International	575,021	16,999,633
2014Y	Southern California Edison Company	Edison International	292,094	13,103,742
2015Y	Southern California Edison Company	Edison International	198,912	12,161,063
2016Y	Southern California Edison Company	Edison International	210,774	14,005,004
2017Y	Southern California Edison Company	Edison International	202,975	15,255,081
2013Y	El Paso Electric Company	El Paso Electric Company	108,855	9,288,773
2014Y	El Paso Electric Company	El Paso Electric Company	115,882	9,477,129
2015Y	El Paso Electric Company	El Paso Electric Company	121,637	9,585,089
2016Y	El Paso Electric Company	El Paso Electric Company	121,772	8,820,006
2017Y	El Paso Electric Company	El Paso Electric Company	123,198	8,950,875
2013Y	Tampa Electric Company	Emera Incorporated	127,725	18,430,621
2014Y	Tampa Electric Company	Emera Incorporated	139,500	18,695,497
2015Y	Tampa Electric Company	Emera Incorporated	148,732	19,016,690
2016Y	Tampa Electric Company	Emera Incorporated	153,589	17,612,374
2017Y	Tampa Electric Company	Emera Incorporated	135,729	19,743,413
2013Y	EL Investment Company, LLC	Entergy Corporation	NA	NA
2014Y	EL Investment Company, LLC	Entergy Corporation	NA	NA
2015Y	EL Investment Company, LLC	Entergy Corporation	182,161	21,874,272
2016Y	EL Investment Company, LLC	Entergy Corporation	NA	NA
2017Y	EL Investment Company, LLC	Entergy Corporation	NA	NA
2013Y	Entergy Arkansas, Inc.	Entergy Corporation	266,433	22,758,419
2014Y	Entergy Arkansas, Inc.	Entergy Corporation	281,655	25,879,393
2015Y	Entergy Arkansas, Inc.	Entergy Corporation	340,169	24,171,905

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.

Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2016Y	Entergy Arkansas, Inc.	Entergy Corporation	346,461	26,435,825
2017Y	Entergy Arkansas, Inc.	Entergy Corporation	374,419	26,473,510
2013Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	182,715	12,584,706
2014Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	185,752	13,756,820
2015Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	139,861	8,601,727
2016Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	NA	NA
2017Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	NA	NA
2013Y	Entergy Louisiana, LLC	Entergy Corporation	217,860	19,249,674
2014Y	Entergy Louisiana, LLC	Entergy Corporation	227,387	21,969,765
2015Y	Entergy Louisiana, LLC	Entergy Corporation	106,279	8,737,102
2016Y	Entergy Louisiana, LLC	Entergy Corporation	440,050	45,088,889
2017Y	Entergy Louisiana, LLC	Entergy Corporation	459,538	40,856,135
2013Y	Entergy Mississippi, Inc.	Entergy Corporation	85,100	9,837,710
2014Y	Entergy Mississippi, Inc.	Entergy Corporation	72,995	8,859,920
2015Y	Entergy Mississippi, Inc.	Entergy Corporation	80,361	7,528,743
2016Y	Entergy Mississippi, Inc.	Entergy Corporation	70,690	9,815,419
2017Y	Entergy Mississippi, Inc.	Entergy Corporation	59,654	8,681,156
2013Y	Entergy New Orleans, LLC	Entergy Corporation	29,487	1,499,897
2014Y	Entergy New Orleans, LLC	Entergy Corporation	20,000	2,003,162
2015Y	Entergy New Orleans, LLC	Entergy Corporation	14,282	1,741,898
2016Y	Entergy New Orleans, LLC	Entergy Corporation	17,455	1,798,574
2017Y	Entergy New Orleans, LLC	Entergy Corporation	10,213	2,675,414
2013Y	Entergy Texas, Inc.	Entergy Corporation	56,402	7,033,780
2014Y	Entergy Texas, Inc.	Entergy Corporation	56,065	7,587,861
2015Y	Entergy Texas, Inc.	Entergy Corporation	58,171	8,620,430
2016Y	Entergy Texas, Inc.	Entergy Corporation	47,088	9,018,687

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.

Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2017Y	Entergy Texas, Inc.	Entergy Corporation	52,757	6,674,690
2013Y	System Energy Resources, Inc.	Entergy Corporation	150,616	9,793,557
2014Y	System Energy Resources, Inc.	Entergy Corporation	142,437	9,218,542
2015Y	System Energy Resources, Inc.	Entergy Corporation	135,312	10,546,906
2016Y	System Energy Resources, Inc.	Entergy Corporation	133,344	5,383,560
2017Y	System Energy Resources, Inc.	Entergy Corporation	190,572	6,675,148
2013Y	Public Service Company of New Hampshire	Eversource Energy	45,816	2,273,034
2014Y	Public Service Company of New Hampshire	Eversource Energy	47,989	2,089,723
2015Y	Public Service Company of New Hampshire	Eversource Energy	53,638	1,705,611
2016Y	Public Service Company of New Hampshire	Eversource Energy	45,898	1,054,234
2017Y	Public Service Company of New Hampshire	Eversource Energy	45,860	968,784
2013Y	Western Massachusetts Electric Company	Eversource Energy	99	5,083
2014Y	Western Massachusetts Electric Company	Eversource Energy	214	7,972
2015Y	Western Massachusetts Electric Company	Eversource Energy	247	9,788
2016Y	Western Massachusetts Electric Company	Eversource Energy	221	9,979
2017Y	Western Massachusetts Electric Company	Eversource Energy	213	8,185
2013Y	Jersey Central Power & Light Company	FirstEnergy Corp.	1,517	-101,063
2014Y	Jersey Central Power & Light Company	FirstEnergy Corp.	1,567	-109,334
2015Y	Jersey Central Power & Light Company	FirstEnergy Corp.	2,398	-84,808
2016Y	Jersey Central Power & Light Company	FirstEnergy Corp.	2,926	-102,007
2017Y	Jersey Central Power & Light Company	FirstEnergy Corp.	2,394	-80,912
2013Y	Monongahela Power Company	FirstEnergy Corp.	69,442	9,074,125
2014Y	Monongahela Power Company	FirstEnergy Corp.	92,664	15,719,060
2015Y	Monongahela Power Company	FirstEnergy Corp.	93,540	14,764,770
2016Y	Monongahela Power Company	FirstEnergy Corp.	105,784	15,831,509
2017Y	Monongahela Power Company	FirstEnergy Corp.	104,487	15,555,045

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2013Y	Ohio Edison Company	FirstEnergy Corp.	170,891	2,755,437
2014Y	Ohio Edison Company	FirstEnergy Corp.	172,600	2,892,102
2015Y	Ohio Edison Company	FirstEnergy Corp.	179,034	2,764,502
2016Y	Ohio Edison Company	FirstEnergy Corp.	126,484	2,224,648
2017Y	Ohio Edison Company	FirstEnergy Corp.	48,383	565,101
2013Y	Potomac Edison Company	FirstEnergy Corp.	179,814	3,780,302
2014Y	Potomac Edison Company	FirstEnergy Corp.	199,370	3,799,291
2015Y	Potomac Edison Company	FirstEnergy Corp.	183,910	3,760,799
2016Y	Potomac Edison Company	FirstEnergy Corp.	192,313	3,736,822
2017Y	Potomac Edison Company	FirstEnergy Corp.	180,150	3,613,698
2013Y	Toledo Edison Company	FirstEnergy Corp.	39,384	1,427,675
2014Y	Toledo Edison Company	FirstEnergy Corp.	45,186	1,329,312
2015Y	Toledo Edison Company	FirstEnergy Corp.	47,087	1,324,871
2016Y	Toledo Edison Company	FirstEnergy Corp.	40,562	1,436,777
2017Y	Toledo Edison Company	FirstEnergy Corp.	23,241	476,397
2013Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	916	50,993
2014Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	1,007	40,156
2015Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	1,015	49,892
2016Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	1,040	41,963
2017Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	1,125	51,831
2013Y	Tucson Electric Power Company	Fortis Inc.	209,776	11,311,182
2014Y	Tucson Electric Power Company	Fortis Inc.	217,090	10,508,451
2015Y	Tucson Electric Power Company	Fortis Inc.	179,879	11,371,377
2016Y	Tucson Electric Power Company	Fortis Inc.	173,377	11,673,449
2017Y	Tucson Electric Power Company	Fortis Inc.	178,733	10,850,165
2013Y	UNS Electric, Inc.	Fortis Inc.	1,643	75,596

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.
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Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2014Y	UNS Electric, Inc.	Fortis Inc.	2,129	54,249
2015Y	UNS Electric, Inc.	Fortis Inc.	2,514	596,970
2016Y	UNS Electric, Inc.	Fortis Inc.	1,903	650,866
2017Y	UNS Electric, Inc.	Fortis Inc.	3,436	652,183
2013Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	189,884	21,070,448
2014Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	193,296	20,592,086
2015Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	182,519	18,769,964
2016Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	187,109	18,252,675
2017Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	179,727	17,751,489
2013Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	42,115	6,093,922
2014Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	41,437	4,506,287
2015Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	45,251	4,887,005
2016Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	48,570	3,939,139
2017Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	46,413	4,036,362
2013Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	3,005	9,300,489
2014Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	2,454	9,176,919
2015Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	2,500	9,077,689
2016Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	2,482	9,325,919
2017Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	2,402	9,120,870
2013Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	4,381	4,897,339
2014Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	3,483	4,849,285
2015Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	3,673	4,869,129
2016Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	3,641	4,811,403
2017Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	3,384	4,710,492
2013Y	Idaho Power Co.	IDACORP, Inc.	86,431	13,559,726
2014Y	Idaho Power Co.	IDACORP, Inc.	86,811	13,195,369

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Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2015Y	Idaho Power Co.	IDACORP, Inc.	90,116	12,662,017
2016Y	Idaho Power Co.	IDACORP, Inc.	90,883	12,174,712
2017Y	Idaho Power Co.	IDACORP, Inc.	91,581	13,687,382
2013Y	Kentucky Utilities Company	LKE	126,521	19,938,878
2014Y	Kentucky Utilities Company	LKE	151,052	19,603,077
2015Y	Kentucky Utilities Company	LKE	164,471	20,956,533
2016Y	Kentucky Utilities Company	LKE	158,852	21,021,762
2017Y	Kentucky Utilities Company	LKE	157,247	19,702,882
2013Y	Louisville Gas and Electric Company	LKE	121,061	14,346,331
2014Y	Louisville Gas and Electric Company	LKE	121,235	15,117,891
2015Y	Louisville Gas and Electric Company	LKE	115,873	13,054,267
2016Y	Louisville Gas and Electric Company	LKE	99,121	12,908,109
2017Y	Louisville Gas and Electric Company	LKE	97,987	13,001,377
2013Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	24,544	2,430,001
2014Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	25,377	2,519,938
2015Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	28,437	1,898,159
2016Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	33,014	2,626,763
2017Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	34,605	2,630,640
2013Y	Madison Gas and Electric Company	MGE Energy, Inc.	25,055	2,177,419
2014Y	Madison Gas and Electric Company	MGE Energy, Inc.	24,649	1,879,109
2015Y	Madison Gas and Electric Company	MGE Energy, Inc.	24,651	2,079,432
2016Y	Madison Gas and Electric Company	MGE Energy, Inc.	25,498	2,515,643
2017Y	Madison Gas and Electric Company	MGE Energy, Inc.	23,378	2,311,261
2013Y	National Grid Generation, LLC	National Grid plc	91,178	4,823,499
2014Y	National Grid Generation, LLC	National Grid plc	81,808	4,558,386
2015Y	National Grid Generation, LLC	National Grid plc	99,044	5,050,928

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Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2016Y	National Grid Generation, LLC	National Grid plc	103,969	4,561,590
2017Y	National Grid Generation, LLC	National Grid plc	91,411	3,213,471
2013Y	Florida Power & Light Company	NextEra Energy, Inc.	651,527	106,695,382
2014Y	Florida Power & Light Company	NextEra Energy, Inc.	632,335	110,932,638
2015Y	Florida Power & Light Company	NextEra Energy, Inc.	655,886	118,641,462
2016Y	Florida Power & Light Company	NextEra Energy, Inc.	643,878	119,083,556
2017Y	Florida Power & Light Company	NextEra Energy, Inc.	628,288	119,906,645
2013Y	Northern Indiana Public Service Company	NiSource Inc.	164,651	14,177,379
2014Y	Northern Indiana Public Service Company	NiSource Inc.	175,209	14,788,291
2015Y	Northern Indiana Public Service Company	NiSource Inc.	182,919	12,204,874
2016Y	Northern Indiana Public Service Company	NiSource Inc.	211,800	12,113,507
2017Y	Northern Indiana Public Service Company	NiSource Inc.	233,456	12,018,749
2013Y	NorthWestern Corporation	NorthWestern Corporation	25,594	3,183,893
2014Y	NorthWestern Corporation	NorthWestern Corporation	34,844	3,826,738
2015Y	NorthWestern Corporation	NorthWestern Corporation	57,721	6,588,168
2016Y	NorthWestern Corporation	NorthWestern Corporation	47,994	5,333,204
2017Y	NorthWestern Corporation	NorthWestern Corporation	50,120	5,495,976
2013Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	122,705	24,161,327
2014Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	125,035	22,806,874
2015Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	119,512	20,880,561
2016Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	122,547	21,407,776
2017Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	121,907	18,507,115
2013Y	Otter Tail Power Company	Otter Tail Corporation	27,024	3,718,922
2014Y	Otter Tail Power Company	Otter Tail Corporation	32,535	3,511,423
2015Y	Otter Tail Power Company	Otter Tail Corporation	30,547	2,305,968
2016Y	Otter Tail Power Company	Otter Tail Corporation	31,649	2,821,779

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2017Y	Otter Tail Power Company	Otter Tail Corporation	31,100	2,931,645
2013Y	Pacific Gas and Electric Company	PG&E Corporation	622,080	31,439,918
2014Y	Pacific Gas and Electric Company	PG&E Corporation	591,994	28,808,501
2015Y	Pacific Gas and Electric Company	PG&E Corporation	675,716	30,374,207
2016Y	Pacific Gas and Electric Company	PG&E Corporation	693,646	32,963,113
2017Y	Pacific Gas and Electric Company	PG&E Corporation	589,784	34,514,059
2013Y	Arizona Public Service Company	Pinnacle West Capital Corporation	416,257	26,178,855
2014Y	Arizona Public Service Company	Pinnacle West Capital Corporation	438,186	26,987,843
2015Y	Arizona Public Service Company	Pinnacle West Capital Corporation	438,805	27,442,278
2016Y	Arizona Public Service Company	Pinnacle West Capital Corporation	406,108	24,835,334
2017Y	Arizona Public Service Company	Pinnacle West Capital Corporation	414,065	24,920,924
2013Y	Public Service Company of New Mexico	PNM Resources, Inc.	181,117	10,417,604
2014Y	Public Service Company of New Mexico	PNM Resources, Inc.	190,525	10,172,236
2015Y	Public Service Company of New Mexico	PNM Resources, Inc.	180,839	10,054,663
2016Y	Public Service Company of New Mexico	PNM Resources, Inc.	141,433	10,356,219
2017Y	Public Service Company of New Mexico	PNM Resources, Inc.	132,281	10,247,953
2013Y	Portland General Electric Company	Portland General Electric Company	98,303	10,290,898
2014Y	Portland General Electric Company	Portland General Electric Company	115,252	10,817,321
2015Y	Portland General Electric Company	Portland General Electric Company	122,543	12,152,016
2016Y	Portland General Electric Company	Portland General Electric Company	126,752	12,844,073
2017Y	Portland General Electric Company	Portland General Electric Company	135,641	12,987,082
2013Y	Puget Sound Energy, Inc.	Puget Holdings LLC	116,054	12,421,625
2014Y	Puget Sound Energy, Inc.	Puget Holdings LLC	112,835	11,640,503
2015Y	Puget Sound Energy, Inc.	Puget Holdings LLC	117,453	12,747,014
2016Y	Puget Sound Energy, Inc.	Puget Holdings LLC	126,238	11,577,608
2017Y	Puget Sound Energy, Inc.	Puget Holdings LLC	125,003	10,825,779

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.

Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2013Y	South Carolina Electric & Gas Co.	SCANA Corporation	187,531	19,200,991
2014Y	South Carolina Electric & Gas Co.	SCANA Corporation	184,994	19,524,528
2015Y	South Carolina Electric & Gas Co.	SCANA Corporation	184,858	19,360,639
2016Y	South Carolina Electric & Gas Co.	SCANA Corporation	189,161	19,602,810
2017Y	South Carolina Electric & Gas Co.	SCANA Corporation	193,840	19,260,566
2013Y	South Carolina Generating Company, Inc.	SCANA Corporation	9,744	3,343,690
2014Y	South Carolina Generating Company, Inc.	SCANA Corporation	13,228	3,702,495
2015Y	South Carolina Generating Company, Inc.	SCANA Corporation	10,794	3,734,928
2016Y	South Carolina Generating Company, Inc.	SCANA Corporation	16,496	2,991,906
2017Y	South Carolina Generating Company, Inc.	SCANA Corporation	17,948	2,606,561
2013Y	San Diego Gas & Electric Co.	Sempra Energy	351,746	6,709,651
2014Y	San Diego Gas & Electric Co.	Sempra Energy	98,921	4,197,493
2015Y	San Diego Gas & Electric Co.	Sempra Energy	46,228	5,278,816
2016Y	San Diego Gas & Electric Co.	Sempra Energy	44,657	3,654,442
2017Y	San Diego Gas & Electric Co.	Sempra Energy	40,121	3,692,211
2013Y	Alabama Power Company	Southern Company	553,407	65,251,725
2014Y	Alabama Power Company	Southern Company	676,877	63,573,171
2015Y	Alabama Power Company	Southern Company	671,108	60,914,065
2016Y	Alabama Power Company	Southern Company	693,994	60,196,690
2017Y	Alabama Power Company	Southern Company	737,698	60,332,669
2013Y	Georgia Power Company	Southern Company	590,054	66,795,159
2014Y	Georgia Power Company	Southern Company	706,854	69,927,957
2015Y	Georgia Power Company	Southern Company	850,183	65,863,498
2016Y	Georgia Power Company	Southern Company	692,145	68,386,979
2017Y	Georgia Power Company	Southern Company	598,495	63,184,997
2013Y	Gulf Power Company	Southern Company	105,051	14,532,685

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.

Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2014Y	Gulf Power Company	Southern Company	132,376	15,627,445
2015Y	Gulf Power Company	Southern Company	130,188	12,688,716
2016Y	Gulf Power Company	Southern Company	124,416	13,444,878
2017Y	Gulf Power Company	Southern Company	132,590	13,980,828
2013Y	Mississippi Power Company	Southern Company	121,325	13,721,052
2014Y	Mississippi Power Company	Southern Company	123,594	16,880,783
2015Y	Mississippi Power Company	Southern Company	103,186	17,013,730
2016Y	Mississippi Power Company	Southern Company	113,417	14,513,729
2017Y	Mississippi Power Company	Southern Company	107,505	15,318,941
2013Y	Southern Electric Generating Company	Southern Company	64,604	2,107,334
2014Y	Southern Electric Generating Company	Southern Company	49,878	2,084,739
2015Y	Southern Electric Generating Company	Southern Company	67,845	1,277,061
2016Y	Southern Electric Generating Company	Southern Company	41,092	394,540
2017Y	Southern Electric Generating Company	Southern Company	43,130	1,406,811
2013Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	73,907	5,279,210
2014Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	77,206	5,546,416
2015Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	69,734	4,881,762
2016Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	68,618	4,137,855
2017Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	64,362	4,578,393
2013Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	617,794	22,248,923
2014Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	603,415	22,993,274
2015Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	654,057	26,300,661
2016Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	670,262	26,108,967
2017Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	671,635	25,244,017
2013Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	90,756	10,803,149
2014Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	103,011	9,474,337

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.

Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2015Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	89,441	10,285,397
2016Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	75,384	9,622,632
2017Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	76,410	10,479,257
2013Y	Kansas Gas and Electric Company	Westar Energy, Inc.	155,715	10,348,490
2014Y	Kansas Gas and Electric Company	Westar Energy, Inc.	158,083	10,621,890
2015Y	Kansas Gas and Electric Company	Westar Energy, Inc.	144,822	10,055,647
2016Y	Kansas Gas and Electric Company	Westar Energy, Inc.	148,087	10,169,665
2017Y	Kansas Gas and Electric Company	Westar Energy, Inc.	140,840	9,430,777
2013Y	Westar Energy (KPL)	Westar Energy, Inc.	86,267	15,175,161
2014Y	Westar Energy (KPL)	Westar Energy, Inc.	94,279	14,094,928
2015Y	Westar Energy (KPL)	Westar Energy, Inc.	86,642	12,386,653
2016Y	Westar Energy (KPL)	Westar Energy, Inc.	89,882	10,809,012
2017Y	Westar Energy (KPL)	Westar Energy, Inc.	91,347	12,569,839
2013Y	Westar Generating, Inc.	Westar Energy, Inc.	3,973	735,166
2014Y	Westar Generating, Inc.	Westar Energy, Inc.	4,027	608,351
2015Y	Westar Generating, Inc.	Westar Energy, Inc.	6,024	690,492
2016Y	Westar Generating, Inc.	Westar Energy, Inc.	4,761	945,870
2017Y	Westar Generating, Inc.	Westar Energy, Inc.	5,144	983,635
2013Y	Wisconsin River Power Company	Wisconsin River Power Company	2,153	20
2014Y	Wisconsin River Power Company	Wisconsin River Power Company	1,994	222,969
2015Y	Wisconsin River Power Company	Wisconsin River Power Company	1,971	204,110
2016Y	Wisconsin River Power Company	Wisconsin River Power Company	1,842	248,314
2017Y	Wisconsin River Power Company	Wisconsin River Power Company	1,937	44,527
2013Y	Northern States Power Company - MN	Xcel Energy Inc.	539,629	28,125,265
2014Y	Northern States Power Company - MN	Xcel Energy Inc.	575,094	32,158,328
2015Y	Northern States Power Company - MN	Xcel Energy Inc.	546,532	32,795,074

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.

Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Non Fuel O&M (\$000)	Net Generation (MWh)
2016Y	Northern States Power Company - MN	Xcel Energy Inc.	541,210	35,430,974
2017Y	Northern States Power Company - MN	Xcel Energy Inc.	509,376	35,236,652
2013Y	Northern States Power Company - WI	Xcel Energy Inc.	21,350	1,114,444
2014Y	Northern States Power Company - WI	Xcel Energy Inc.	21,835	1,298,677
2015Y	Northern States Power Company - WI	Xcel Energy Inc.	20,208	1,240,211
2016Y	Northern States Power Company - WI	Xcel Energy Inc.	19,519	1,405,845
2017Y	Northern States Power Company - WI	Xcel Energy Inc.	20,257	1,408,854
2013Y	Public Service Company of Colorado	Xcel Energy Inc.	185,844	22,245,725
2014Y	Public Service Company of Colorado	Xcel Energy Inc.	182,309	22,429,819
2015Y	Public Service Company of Colorado	Xcel Energy Inc.	181,422	22,654,375
2016Y	Public Service Company of Colorado	Xcel Energy Inc.	169,248	21,983,880
2017Y	Public Service Company of Colorado	Xcel Energy Inc.	157,317	22,420,317
2013Y	Southwestern Public Service Company	Xcel Energy Inc.	94,795	18,813,781
2014Y	Southwestern Public Service Company	Xcel Energy Inc.	97,876	16,953,285
2015Y	Southwestern Public Service Company	Xcel Energy Inc.	105,699	16,476,374
2016Y	Southwestern Public Service Company	Xcel Energy Inc.	95,099	15,011,035
2017Y	Southwestern Public Service Company	Xcel Energy Inc.	90,072	12,857,693
		Total	<hr/> 81,032,738	7,571,163,978

Transmission Rankings [2013-2017] Source: SNL

Holding Company	Trans O&M	Trans Plant: Add	O&M/Add	Total Sales of Elec. Volume (MWh)	Trans O&M and Plant/MWh	Ranking
NextEra Energy, Inc.	470,208,000	1,606,290,000	2,076,498,000	576,861,659	3.60	1
LKE	230,632,774	410,487,000	641,119,774	177,006,629	3.62	2
Duke Energy Corporation	1,298,444,000	3,684,202,000	4,982,646,000	1,280,342,802	3.89	3
Emera Incorporated	(24,210,000)	460,616,000	436,406,000	106,439,317	4.10	4
DQE Holdings LLC	51,933,000	237,235,000	289,168,000	67,127,889	4.31	5
El Paso Electric Company	95,162,000	139,751,000	234,913,000	54,312,529	4.33	6
Great Plains Energy Inc	535,891,000	166,885,000	702,776,000	149,872,607	4.69	7
Southern Company	1,163,844,000	3,204,912,000	4,368,756,000	923,010,412	4.73	8
IDACORP, Inc.	131,826,000	256,005,000	387,831,000	80,222,328	4.83	9
AES Corporation	575,413,000	186,295,000	761,708,000	157,380,054	4.84	10
Entergy Corporation	931,758,000	2,918,655,000	3,850,413,000	748,921,761	5.14	11
NiSource Inc.	187,120,000	267,405,000	454,525,000	85,969,484	5.29	12
Vectren Corporation	86,135,000	73,339,000	159,474,000	28,861,057	5.53	13
Avista Corporation	158,299,000	203,734,000	362,033,000	63,822,212	5.67	14
Portland General Electric Co	482,870,000	130,372,000	613,242,000	105,742,391	5.80	15
FirstEnergy Corp.	3,673,002,000	1,047,540,000	4,720,542,000	795,797,359	5.93	16
Cleco Partners LP	152,471,000	199,772,000	352,243,000	58,299,323	6.04	17
Ameren Corporation	628,087,000	1,856,827,000	2,484,914,000	396,912,264	6.26	18
Consolidated Edison, Inc.	852,287,000	955,858,000	1,808,145,000	264,071,298	6.85	19
SCANA Corporation	99,091,000	691,077,000	790,168,000	115,124,628	6.86	20
Berkshire Hathaway Inc.	1,680,844,000	2,794,833,000	4,475,677,000	647,595,062	6.91	21
DTE Energy Company	1,574,116,000	19,521,000	1,593,637,000	230,365,093	6.92	22
Pinnacle West Capital Corp	399,387,000	724,709,000	1,124,096,000	161,506,003	6.96	23
Puget Holdings LLC	647,511,000	338,611,000	986,122,000	132,788,263	7.43	24
Exelon Corporation	2,910,302,000	4,775,914,000	7,686,216,000	1,034,415,389	7.43	25
WEC Energy Group, Inc.	2,021,674,000	0	2,021,674,000	247,141,624	8.18	26
Fortis Inc.	252,060,000	491,047,000	743,107,000	90,696,008	8.19	27
PNM Resources, Inc.	186,004,000	314,857,000	500,861,000	60,114,213	8.33	28
Mt. Carmel Public Utility Company	3,927,000	500,000	4,427,000	490,041	9.03	29
AEP	4,814,898,000	4,339,738,000	9,154,636,000	1,006,249,397	9.10	30
CMS Energy Corporation	1,708,673,000	10,970,000	1,719,643,000	180,393,075	9.53	31

Transmission Rankings [2013-2017] Source: SNL

Holding Company	Trans O&M	Trans Plant: Add	O&M/Add	Total Sales of Elec. Volume (MWh)	Trans O&M and Plant/MWh	Ranking
NorthWestern Corporation	159,692,000	304,552,000	464,244,000	48,516,397	9.57	32
UGI Corporation	35,791,000	11,363,000	47,154,000	4,900,628	9.62	33
ALLETE, Inc.	367,745,000	354,615,000	722,360,000	74,330,795	9.72	34
MGE Energy, Inc.	180,569,000	0	180,569,000	17,944,098	10.06	35
Dominion Energy, Inc.	255,160,000	4,177,001,000	4,432,161,000	424,814,207	10.43	36
Algonquin Power & Utilities Corp.	209,862,000	118,961,000	328,823,000	29,685,318	11.08	37
CenterPoint Energy, Inc.	3,669,934,000	1,002,773,000	4,672,707,000	421,479,989	11.09	38
Black Hills Corporation	231,608,000	155,491,000	387,099,000	32,232,125	12.01	39
OGE Energy Corp.	702,763,000	1,131,294,000	1,834,057,000	145,554,088	12.60	40
Xcel Energy Inc.	2,883,666,000	3,955,601,000	6,839,267,000	541,441,613	12.63	41
PG&E Corporation	1,354,096,000	4,196,915,000	5,551,011,000	437,736,683	12.68	42
Balfour Beatty Infrastructure	54,359,000	0	54,359,000	4,147,629	13.11	43
Sempra Energy	4,726,642,000	4,950,386,000	9,677,028,000	732,367,419	13.21	44
MDU Resources Group, Inc.	109,043,000	118,347,000	227,390,000	16,493,138	13.79	45
Westar Energy, Inc.	1,232,121,000	813,574,000	2,045,695,000	146,818,676	13.93	46
Otter Tail Corporation	133,895,000	245,131,000	379,026,000	26,396,332	14.36	47
Alliant Energy Corporation	2,386,205,000	0	2,386,205,000	158,149,961	15.09	48
Edison International	1,321,030,000	6,356,016,000	7,677,046,000	476,972,294	16.10	49
PPL Corporation	673,785,000	3,141,828,000	3,815,613,000	188,245,085	20.27	50
Unitil Corporation	169,352,000	5,835,000	175,187,000	8,513,641	20.58	51
Eversource Energy	2,780,588,000	3,643,701,000	6,424,289,000	289,678,343	22.18	52
Caisse de dépôt et	472,684,000	87,678,000	560,362,000	23,640,213	23.70	53
Iberdrola, S.A.	1,802,783,000	2,071,448,000	3,874,231,000	157,875,239	24.54	54
Public Service Enterprise Group Inc	484,909,000	7,771,207,000	8,256,116,000	213,547,903	38.66	55
National Grid plc	3,241,295,000	2,506,882,000	5,748,177,000	138,240,421	41.58	56
Grand Total	57,619,236,774	79,628,556,000	137,247,792,774	14,787,574,406		

Q1	5.77
Q2	8.68
Q3	12.79
Industry Avg.	9.28

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 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Transmission O&M Expense (\$000)	Total Transmission Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Dayton Power and Light Company	AES Corporation	104,155	10,744	19,416,290
2014Y	Dayton Power and Light Company	AES Corporation	128,326	14,488	18,643,195
2015Y	Dayton Power and Light Company	AES Corporation	91,016	14,497	16,433,036
2016Y	Dayton Power and Light Company	AES Corporation	79,455	4,955	16,158,129
2017Y	Dayton Power and Light Company	AES Corporation	70,510	-1,003	12,236,126
2013Y	Indianapolis Power & Light Company	AES Corporation	11,831	8,988	16,033,922
2014Y	Indianapolis Power & Light Company	AES Corporation	11,608	12,609	16,391,321
2015Y	Indianapolis Power & Light Company	AES Corporation	10,254	28,160	14,397,561
2016Y	Indianapolis Power & Light Company	AES Corporation	27,979	88,063	14,185,985
2017Y	Indianapolis Power & Light Company	AES Corporation	40,279	4,794	13,484,489
2013Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	17,333	12,298	5,620,276
2014Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	22,681	26,146	5,131,750
2015Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	23,667	33,097	4,940,028
2016Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	22,089	23,996	4,950,707
2017Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	25,026	23,424	4,841,355
2013Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	16,964	0	552,273
2014Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	19,771	0	910,825
2015Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	19,673	0	933,262
2016Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	20,904	0	910,242
2017Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	21,754	0	894,600
2013Y	ALLETE (Minnesota Power)	ALLETE, Inc.	52,185	73,786	13,264,062
2014Y	ALLETE (Minnesota Power)	ALLETE, Inc.	64,818	101,995	13,942,499
2015Y	ALLETE (Minnesota Power)	ALLETE, Inc.	73,534	85,769	14,369,559
2016Y	ALLETE (Minnesota Power)	ALLETE, Inc.	84,273	36,978	14,147,335
2017Y	ALLETE (Minnesota Power)	ALLETE, Inc.	92,281	47,055	14,692,658
2013Y	Superior Water, Light and Power Company	ALLETE, Inc.	267	311	687,209
2014Y	Superior Water, Light and Power Company	ALLETE, Inc.	94	34	770,427
2015Y	Superior Water, Light and Power Company	ALLETE, Inc.	90	5,641	788,342
2016Y	Superior Water, Light and Power Company	ALLETE, Inc.	77	2,370	820,880
2017Y	Superior Water, Light and Power Company	ALLETE, Inc.	126	676	847,824

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Year	Company Name	Ultimate Parent Company Name	Total Transmission O&M Expense (\$000)	Total Transmission Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Interstate Power and Light Company	Alliant Energy Corporation	304,456	0	17,194,056
2014Y	Interstate Power and Light Company	Alliant Energy Corporation	326,345	0	16,871,181
2015Y	Interstate Power and Light Company	Alliant Energy Corporation	330,867	0	16,703,172
2016Y	Interstate Power and Light Company	Alliant Energy Corporation	362,583	0	16,662,731
2017Y	Interstate Power and Light Company	Alliant Energy Corporation	313,416	0	17,406,995
2013Y	Wisconsin Power and Light Company	Alliant Energy Corporation	119,246	0	14,862,652
2014Y	Wisconsin Power and Light Company	Alliant Energy Corporation	126,553	0	14,603,712
2015Y	Wisconsin Power and Light Company	Alliant Energy Corporation	159,341	0	15,199,013
2016Y	Wisconsin Power and Light Company	Alliant Energy Corporation	170,460	0	14,480,783
2017Y	Wisconsin Power and Light Company	Alliant Energy Corporation	172,938	0	14,165,666
2013Y	Ameren Illinois Company	Ameren Corporation	42,345	197,815	38,012,834
2014Y	Ameren Illinois Company	Ameren Corporation	47,523	246,147	37,915,282
2015Y	Ameren Illinois Company	Ameren Corporation	53,565	310,717	36,850,871
2016Y	Ameren Illinois Company	Ameren Corporation	58,943	348,069	36,754,294
2017Y	Ameren Illinois Company	Ameren Corporation	59,555	295,663	35,537,431
2013Y	Union Electric Company	Ameren Corporation	58,896	69,923	43,158,138
2014Y	Union Electric Company	Ameren Corporation	60,321	130,206	43,192,724
2015Y	Union Electric Company	Ameren Corporation	70,144	27,111	43,255,846
2016Y	Union Electric Company	Ameren Corporation	80,459	175,520	39,997,209
2017Y	Union Electric Company	Ameren Corporation	96,336	55,656	42,237,635
2013Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA
2014Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	16,770	NA	47,215,732
2015Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA
2016Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA
2017Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA
2013Y	AEP Texas Central Company	American Electric Power Company, Inc.	159,143	115,815	NA
2014Y	AEP Texas Central Company	American Electric Power Company, Inc.	219,095	226,753	NA
2015Y	AEP Texas Central Company	American Electric Power Company, Inc.	242,609	229,635	NA
2016Y	AEP Texas Central Company	American Electric Power Company, Inc.	258,551	207,620	NA
2017Y	AEP Texas Central Company	American Electric Power Company, Inc.	NA	NA	NA

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company. Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Transmission O&M Expense (\$000)	Total Transmission Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	AEP Texas North Company	American Electric Power Company, Inc.	50,657	32,878	2,435,181
2014Y	AEP Texas North Company	American Electric Power Company, Inc.	61,131	40,616	1,741,758
2015Y	AEP Texas North Company	American Electric Power Company, Inc.	67,217	58,836	1,368,742
2016Y	AEP Texas North Company	American Electric Power Company, Inc.	67,895	77,706	1,381,295
2017Y	AEP Texas North Company	American Electric Power Company, Inc.	NA	NA	NA
2013Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA	NA
2014Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA	NA
2015Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA	NA
2016Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA	NA
2017Y	AEP Texas, Inc.	American Electric Power Company, Inc.	318,963	447,585	923,791
2013Y	Appalachian Power Company	American Electric Power Company, Inc.	76,711	114,954	47,596,529
2014Y	Appalachian Power Company	American Electric Power Company, Inc.	141,646	73,640	35,769,358
2015Y	Appalachian Power Company	American Electric Power Company, Inc.	143,949	191,186	34,847,578
2016Y	Appalachian Power Company	American Electric Power Company, Inc.	216,840	400,032	34,862,820
2017Y	Appalachian Power Company	American Electric Power Company, Inc.	232,090	247,993	33,601,395
2013Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	55,000	45,588	38,036,953
2014Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	83,059	61,566	35,331,017
2015Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	87,130	57,599	30,404,900
2016Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	98,318	84,043	28,379,413
2017Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	140,880	73,541	29,819,953
2013Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	471	75	5,475,276
2014Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	435	1,219	5,936,251
2015Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	505	12	5,186,234
2016Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	584	172	4,985,411
2017Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	550	1,293	6,032,062
2013Y	Kentucky Power Company	American Electric Power Company, Inc.	14,384	13,956	9,933,527
2014Y	Kentucky Power Company	American Electric Power Company, Inc.	22,065	50,613	11,993,933
2015Y	Kentucky Power Company	American Electric Power Company, Inc.	27,835	11,993	8,700,986
2016Y	Kentucky Power Company	American Electric Power Company, Inc.	34,927	8,095	7,276,047
2017Y	Kentucky Power Company	American Electric Power Company, Inc.	44,236	9,400	7,106,360

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Year	Company Name	Ultimate Parent Company Name	Total Transmission O&M Expense (\$000)	Total Transmission Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Kingsport Power Company	American Electric Power Company, Inc.	553	5,023	2,045,738
2014Y	Kingsport Power Company	American Electric Power Company, Inc.	597	2,309	2,120,716
2015Y	Kingsport Power Company	American Electric Power Company, Inc.	557	1,262	2,086,994
2016Y	Kingsport Power Company	American Electric Power Company, Inc.	728	430	2,038,552
2017Y	Kingsport Power Company	American Electric Power Company, Inc.	794	6,819	1,971,080
2013Y	Ohio Power Company	American Electric Power Company, Inc.	39,545	84,418	60,639,578
2014Y	Ohio Power Company	American Electric Power Company, Inc.	148,146	115,183	15,591,760
2015Y	Ohio Power Company	American Electric Power Company, Inc.	180,334	152,162	45,685,751
2016Y	Ohio Power Company	American Electric Power Company, Inc.	212,281	98,200	45,870,876
2017Y	Ohio Power Company	American Electric Power Company, Inc.	244,905	118,181	45,688,514
2013Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	6,045	3,610	10,499,577
2014Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	6,202	157	11,400,464
2015Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	5,942	90	8,872,645
2016Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	5,991	2,345	9,919,829
2017Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	6,212	0	11,881,430
2013Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	76,921	28,080	19,239,394
2014Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	95,266	90,142	19,517,893
2015Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	100,058	31,677	18,916,965
2016Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	114,839	36,937	19,425,199
2017Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	137,834	37,675	19,052,676
2013Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	65,917	54,115	28,553,233
2014Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	80,473	130,887	28,644,882
2015Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	96,781	89,956	27,269,400
2016Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	120,301	203,397	26,169,526
2017Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	119,772	113,430	26,257,034
2013Y	Wheeling Power Company	American Electric Power Company, Inc.	1,129	24,076	2,703,781
2014Y	Wheeling Power Company	American Electric Power Company, Inc.	729	4,788	3,269,892
2015Y	Wheeling Power Company	American Electric Power Company, Inc.	9,901	12,955	4,451,364
2016Y	Wheeling Power Company	American Electric Power Company, Inc.	20,057	3,929	5,106,836
2017Y	Wheeling Power Company	American Electric Power Company, Inc.	32,442	3,091	5,015,316

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Year	Company Name	Ultimate Parent Company Name	Total Transmission O&M Expense (\$000)	Total Transmission Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Alaska Electric Light and Power Company	Avista Corporation	524	638	377,005
2014Y	Alaska Electric Light and Power Company	Avista Corporation	556	752	422,784
2015Y	Alaska Electric Light and Power Company	Avista Corporation	470	503	398,066
2016Y	Alaska Electric Light and Power Company	Avista Corporation	623	1,518	395,154
2017Y	Alaska Electric Light and Power Company	Avista Corporation	718	1,227	414,210
2013Y	Avista Corporation	Avista Corporation	30,263	25,773	13,318,994
2014Y	Avista Corporation	Avista Corporation	31,164	40,768	12,839,533
2015Y	Avista Corporation	Avista Corporation	29,542	38,387	11,942,035
2016Y	Avista Corporation	Avista Corporation	31,090	44,250	11,733,626
2017Y	Avista Corporation	Avista Corporation	33,349	49,918	11,980,805
2013Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	7,891	0	881,022
2014Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	11,588	0	845,665
2015Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	18,269	0	844,127
2016Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	9,825	0	831,622
2017Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	6,786	0	745,193
2013Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	48,509	42,456	32,680,735
2014Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	53,065	69,965	32,499,927
2015Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	57,875	188,128	31,832,657
2016Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	67,180	434,244	32,475,023
2017Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	77,396	114,219	33,727,302
2013Y	Nevada Power Company	Berkshire Hathaway Inc.	32,532	150,632	24,064,426
2014Y	Nevada Power Company	Berkshire Hathaway Inc.	76,754	19,003	22,745,488
2015Y	Nevada Power Company	Berkshire Hathaway Inc.	47,215	33,403	25,481,621
2016Y	Nevada Power Company	Berkshire Hathaway Inc.	59,480	57,805	25,062,084
2017Y	Nevada Power Company	Berkshire Hathaway Inc.	59,167	17,999	23,751,206
2013Y	PacifiCorp	Berkshire Hathaway Inc.	198,670	521,412	65,869,008
2014Y	PacifiCorp	Berkshire Hathaway Inc.	211,058	178,957	65,269,524
2015Y	PacifiCorp	Berkshire Hathaway Inc.	215,664	528,249	63,530,663
2016Y	PacifiCorp	Berkshire Hathaway Inc.	203,261	153,285	60,958,902
2017Y	PacifiCorp	Berkshire Hathaway Inc.	204,806	192,361	62,468,319

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Year	Company Name	Ultimate Parent Company Name	Total Transmission O&M Expense (\$000)	Total Transmission Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	14,419	8,599	9,185,572
2014Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	11,772	14,704	8,882,408
2015Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	14,795	20,676	8,911,051
2016Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	14,406	32,635	9,000,293
2017Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	12,820	16,101	9,198,853
2013Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	3,720	9	2,028,643
2014Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	4,585	15,019	1,957,695
2015Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	5,445	5,287	1,959,505
2016Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	5,440	21,680	1,985,177
2017Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	6,140	9,157	1,932,972
2013Y	Black Hills Power, Inc.	Black Hills Corporation	22,962	352	3,084,298
2014Y	Black Hills Power, Inc.	Black Hills Corporation	24,294	676	2,905,098
2015Y	Black Hills Power, Inc.	Black Hills Corporation	23,464	1,832	2,873,371
2016Y	Black Hills Power, Inc.	Black Hills Corporation	25,302	29,830	2,611,946
2017Y	Black Hills Power, Inc.	Black Hills Corporation	27,381	38,647	2,992,386
2013Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	14,351	3,650	1,635,140
2014Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	15,848	16,390	1,639,680
2015Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	15,775	5,587	1,418,697
2016Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	17,817	529	1,559,870
2017Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	19,084	6,846	1,647,647
2013Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	87,363	37,535	4,853,495
2014Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	92,767	17,076	4,713,347
2015Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	98,295	15,396	4,751,076
2016Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	95,650	7,639	4,688,744
2017Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	98,609	10,032	4,633,551
2013Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	534,401	99,927	79,984,965
2014Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	705,409	123,177	81,839,060
2015Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	751,683	175,440	84,190,647
2016Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	810,924	232,762	86,828,900
2017Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	867,517	371,467	88,636,417

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Year	Company Name	Ultimate Parent Company Name	Total Transmission O&M Expense (\$000)	Total Transmission Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Cleco Power LLC	Cleco Partners LP	18,949	73,042	11,115,732
2014Y	Cleco Power LLC	Cleco Partners LP	29,412	15,642	12,201,940
2015Y	Cleco Power LLC	Cleco Partners LP	30,764	39,044	12,105,640
2016Y	Cleco Power LLC	Cleco Partners LP	37,925	58,318	11,596,427
2017Y	Cleco Power LLC	Cleco Partners LP	35,421	13,726	11,279,584
2013Y	Consumers Energy Company	CMS Energy Corporation	302,524	0	35,276,791
2014Y	Consumers Energy Company	CMS Energy Corporation	337,514	0	35,893,242
2015Y	Consumers Energy Company	CMS Energy Corporation	346,106	0	36,357,438
2016Y	Consumers Energy Company	CMS Energy Corporation	371,546	3,759	36,746,531
2017Y	Consumers Energy Company	CMS Energy Corporation	350,983	7,211	36,119,073
2013Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	149,148	148,675	47,335,320
2014Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	134,741	212,811	46,406,542
2015Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	149,154	159,703	47,202,850
2016Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	161,227	196,177	47,450,242
2017Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	174,857	168,787	46,342,045
2013Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	12,915	4,061	4,263,699
2014Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	14,751	35,846	4,256,408
2015Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	13,950	6,390	4,415,840
2016Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	15,215	13,643	4,315,576
2017Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	15,667	5,969	4,056,841
2013Y	Rockland Electric Company	Consolidated Edison, Inc.	1,845	1,136	1,642,857
2014Y	Rockland Electric Company	Consolidated Edison, Inc.	2,907	1,759	1,610,904
2015Y	Rockland Electric Company	Consolidated Edison, Inc.	2,125	685	1,631,351
2016Y	Rockland Electric Company	Consolidated Edison, Inc.	1,573	1,598	1,601,861
2017Y	Rockland Electric Company	Consolidated Edison, Inc.	2,212	-1,382	1,538,962
2013Y	Virginia Electric and Power Company	Dominion Energy, Inc.	40,470	716,213	82,852,117
2014Y	Virginia Electric and Power Company	Dominion Energy, Inc.	22,275	953,331	83,938,195
2015Y	Virginia Electric and Power Company	Dominion Energy, Inc.	100,092	1,091,339	85,178,907
2016Y	Virginia Electric and Power Company	Dominion Energy, Inc.	99,432	938,411	87,875,099
2017Y	Virginia Electric and Power Company	Dominion Energy, Inc.	-7,109	477,707	84,969,889

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2013Y	Duquesne Light Company	DQE Holdings LLC	9,486	59,055	14,007,273
2014Y	Duquesne Light Company	DQE Holdings LLC	8,900	34,580	13,747,339
2015Y	Duquesne Light Company	DQE Holdings LLC	10,096	16,684	13,503,863
2016Y	Duquesne Light Company	DQE Holdings LLC	10,747	99,207	13,172,591
2017Y	Duquesne Light Company	DQE Holdings LLC	12,704	27,709	12,696,823
2013Y	DTE Electric Company	DTE Energy Company	258,635	7,943	47,062,371
2014Y	DTE Electric Company	DTE Energy Company	289,196	2,900	46,076,577
2015Y	DTE Electric Company	DTE Energy Company	322,329	209	46,281,765
2016Y	DTE Electric Company	DTE Energy Company	354,944	1,135	45,998,164
2017Y	DTE Electric Company	DTE Energy Company	349,012	7,334	44,946,216
2013Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	55,116	243,441	85,789,697
2014Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	56,473	137,960	87,645,520
2015Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	57,407	201,452	87,375,571
2016Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	57,317	189,141	88,544,715
2017Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	53,374	340,599	87,306,564
2013Y	Duke Energy Florida, LLC	Duke Energy Corporation	41,237	239,043	38,164,155
2014Y	Duke Energy Florida, LLC	Duke Energy Corporation	35,842	189,167	38,728,049
2015Y	Duke Energy Florida, LLC	Duke Energy Corporation	36,495	188,167	39,989,379
2016Y	Duke Energy Florida, LLC	Duke Energy Corporation	35,381	181,877	40,660,935
2017Y	Duke Energy Florida, LLC	Duke Energy Corporation	46,549	266,601	40,290,293
2013Y	Duke Energy Indiana, LLC	Duke Energy Corporation	46,188	115,011	33,714,982
2014Y	Duke Energy Indiana, LLC	Duke Energy Corporation	49,651	118,825	33,433,620
2015Y	Duke Energy Indiana, LLC	Duke Energy Corporation	62,855	74,032	33,517,569
2016Y	Duke Energy Indiana, LLC	Duke Energy Corporation	76,550	100,889	34,368,826
2017Y	Duke Energy Indiana, LLC	Duke Energy Corporation	82,485	142,417	33,145,670
2013Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	10,230	1,007	4,546,692
2014Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	13,842	7,571	4,447,988
2015Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	16,184	4,935	5,277,786
2016Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	19,418	700	4,672,987
2017Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	17,246	2,730	4,908,072

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2013Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	25,124	45,539	39,309,749
2014Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	33,312	25,832	27,741,596
2015Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	31,977	55,837	20,805,363
2016Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	50,348	56,486	21,320,518
2017Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	48,077	49,640	20,805,946
2013Y	Duke Energy Progress, LLC	Duke Energy Corporation	61,419	189,440	60,204,063
2014Y	Duke Energy Progress, LLC	Duke Energy Corporation	54,336	114,663	62,871,047
2015Y	Duke Energy Progress, LLC	Duke Energy Corporation	38,719	95,587	64,880,560
2016Y	Duke Energy Progress, LLC	Duke Energy Corporation	46,483	137,888	69,052,154
2017Y	Duke Energy Progress, LLC	Duke Energy Corporation	38,809	167,725	66,822,736
2013Y	Southern California Edison Company	Edison International	316,012	2,118,269	90,552,978
2014Y	Southern California Edison Company	Edison International	243,690	1,314,334	116,437,195
2015Y	Southern California Edison Company	Edison International	312,494	1,242,955	90,495,397
2016Y	Southern California Edison Company	Edison International	227,741	1,033,844	88,194,998
2017Y	Southern California Edison Company	Edison International	221,093	646,614	91,291,726
2013Y	El Paso Electric Company	El Paso Electric Company	16,765	32,990	10,884,241
2014Y	El Paso Electric Company	El Paso Electric Company	17,855	9,079	11,009,422
2015Y	El Paso Electric Company	El Paso Electric Company	19,120	27,893	10,915,601
2016Y	El Paso Electric Company	El Paso Electric Company	20,344	45,814	10,598,511
2017Y	El Paso Electric Company	El Paso Electric Company	21,078	23,975	10,904,754
2013Y	Emera Maine	Emera Incorporated	-24,811	37,033	1,869,923
2014Y	Emera Maine	Emera Incorporated	-18,855	51,638	2,344,241
2015Y	Emera Maine	Emera Incorporated	-17,907	32,240	2,325,046
2016Y	Emera Maine	Emera Incorporated	-18,404	28,722	2,217,874
2017Y	Emera Maine	Emera Incorporated	-15,537	23,979	2,270,073
2013Y	Tampa Electric Company	Emera Incorporated	12,705	27,782	18,639,927
2014Y	Tampa Electric Company	Emera Incorporated	13,840	24,585	18,784,911
2015Y	Tampa Electric Company	Emera Incorporated	14,223	48,401	19,121,762
2016Y	Tampa Electric Company	Emera Incorporated	16,125	143,882	19,440,142
2017Y	Tampa Electric Company	Emera Incorporated	14,411	42,354	19,425,418

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Year	Company Name	Ultimate Parent Company Name	Total Transmission O&M Expense (\$000)	Total Transmission Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA
2014Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA
2015Y	EL Investment Company, LLC	Entergy Corporation	37,473	107,498	31,482,380
2016Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA
2017Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA
2013Y	Entergy Arkansas, Inc.	Entergy Corporation	30,215	85,555	29,788,956
2014Y	Entergy Arkansas, Inc.	Entergy Corporation	43,309	106,685	31,350,781
2015Y	Entergy Arkansas, Inc.	Entergy Corporation	43,735	95,506	31,379,457
2016Y	Entergy Arkansas, Inc.	Entergy Corporation	40,348	302,310	29,363,790
2017Y	Entergy Arkansas, Inc.	Entergy Corporation	42,018	198,063	29,219,532
2013Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	28,052	96,753	27,130,595
2014Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	35,402	82,375	28,713,874
2015Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	28,828	56,431	21,426,698
2016Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	NA	NA	NA
2017Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	NA	NA	NA
2013Y	Entergy Louisiana, LLC	Entergy Corporation	36,229	72,156	34,156,904
2014Y	Entergy Louisiana, LLC	Entergy Corporation	50,685	119,022	37,479,888
2015Y	Entergy Louisiana, LLC	Entergy Corporation	23,696	24,209	14,743,976
2016Y	Entergy Louisiana, LLC	Entergy Corporation	83,851	289,071	63,634,403
2017Y	Entergy Louisiana, LLC	Entergy Corporation	93,619	292,805	61,747,129
2013Y	Entergy Mississippi, Inc.	Entergy Corporation	20,588	72,446	14,965,739
2014Y	Entergy Mississippi, Inc.	Entergy Corporation	21,980	23,681	16,054,977
2015Y	Entergy Mississippi, Inc.	Entergy Corporation	21,768	34,188	14,969,217
2016Y	Entergy Mississippi, Inc.	Entergy Corporation	21,512	103,376	14,462,253
2017Y	Entergy Mississippi, Inc.	Entergy Corporation	19,842	190,528	13,904,918
2013Y	Entergy New Orleans, LLC	Entergy Corporation	13,359	5,716	5,615,573
2014Y	Entergy New Orleans, LLC	Entergy Corporation	14,389	15,544	6,570,789
2015Y	Entergy New Orleans, LLC	Entergy Corporation	14,327	12,547	7,138,626
2016Y	Entergy New Orleans, LLC	Entergy Corporation	9,255	18,924	6,947,771
2017Y	Entergy New Orleans, LLC	Entergy Corporation	8,438	5,956	7,327,377

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Year	Company Name	Ultimate Parent Company Name	Total Transmission O&M Expense (\$000)	Total Transmission Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Entergy Texas, Inc.	Entergy Corporation	27,746	55,343	23,811,698
2014Y	Entergy Texas, Inc.	Entergy Corporation	30,688	38,850	22,661,605
2015Y	Entergy Texas, Inc.	Entergy Corporation	37,097	46,643	23,855,503
2016Y	Entergy Texas, Inc.	Entergy Corporation	28,775	242,073	23,892,632
2017Y	Entergy Texas, Inc.	Entergy Corporation	27,592	102,086	20,321,420
2013Y	System Energy Resources, Inc.	Entergy Corporation	0	22,439	9,793,557
2014Y	System Energy Resources, Inc.	Entergy Corporation	0	-33	9,218,542
2015Y	System Energy Resources, Inc.	Entergy Corporation	0	65	10,546,906
2016Y	System Energy Resources, Inc.	Entergy Corporation	0	-156	5,683,560
2017Y	System Energy Resources, Inc.	Entergy Corporation	0	0	6,675,148
2013Y	EWO Marketing, LLC	Entergy Corporation	-16,774	NA	2,589,069
2014Y	EWO Marketing, LLC	Entergy Corporation	3,385	NA	2,505,358
2015Y	EWO Marketing, LLC	Entergy Corporation	3,488	NA	2,504,139
2016Y	EWO Marketing, LLC	Entergy Corporation	3,820	NA	2,638,560
2017Y	EWO Marketing, LLC	Entergy Corporation	3,023	NA	2,648,461
2013Y	Connecticut Light and Power Company	Eversource Energy	115,480	272,433	23,299,945
2014Y	Connecticut Light and Power Company	Eversource Energy	77,432	212,363	22,647,162
2015Y	Connecticut Light and Power Company	Eversource Energy	85,295	343,309	22,643,456
2016Y	Connecticut Light and Power Company	Eversource Energy	104,645	278,252	22,342,433
2017Y	Connecticut Light and Power Company	Eversource Energy	135,222	330,352	21,611,697
2013Y	NSTAR Electric Company	Eversource Energy	381,313	253,097	23,996,935
2014Y	NSTAR Electric Company	Eversource Energy	362,541	144,159	23,629,876
2015Y	NSTAR Electric Company	Eversource Energy	386,228	203,845	23,856,657
2016Y	NSTAR Electric Company	Eversource Energy	410,492	302,542	23,127,763
2017Y	NSTAR Electric Company	Eversource Energy	440,231	138,222	21,529,739
2013Y	Public Service Company of New Hampshire	Eversource Energy	36,701	84,364	9,118,546
2014Y	Public Service Company of New Hampshire	Eversource Energy	51,083	101,670	8,595,895
2015Y	Public Service Company of New Hampshire	Eversource Energy	33,959	125,876	8,441,532
2016Y	Public Service Company of New Hampshire	Eversource Energy	37,457	133,499	8,388,691
2017Y	Public Service Company of New Hampshire	Eversource Energy	50,674	101,147	8,116,389

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2013Y	Western Massachusetts Electric Company	Eversource Energy	8,384	246,937	3,724,299
2014Y	Western Massachusetts Electric Company	Eversource Energy	20,725	65,163	3,610,361
2015Y	Western Massachusetts Electric Company	Eversource Energy	6,962	78,924	3,601,321
2016Y	Western Massachusetts Electric Company	Eversource Energy	13,808	92,110	3,706,255
2017Y	Western Massachusetts Electric Company	Eversource Energy	21,956	135,437	3,689,391
2013Y	Atlantic City Electric Company	Exelon Corporation	12,053	55,050	11,562,281
2014Y	Atlantic City Electric Company	Exelon Corporation	12,998	61,561	11,658,993
2015Y	Atlantic City Electric Company	Exelon Corporation	15,448	134,031	11,225,247
2016Y	Atlantic City Electric Company	Exelon Corporation	19,188	170,292	10,723,259
2017Y	Atlantic City Electric Company	Exelon Corporation	21,789	165,916	9,822,917
2013Y	Baltimore Gas and Electric Company	Exelon Corporation	35,100	45,746	30,767,778
2014Y	Baltimore Gas and Electric Company	Exelon Corporation	37,758	64,984	30,562,078
2015Y	Baltimore Gas and Electric Company	Exelon Corporation	42,726	106,230	30,304,293
2016Y	Baltimore Gas and Electric Company	Exelon Corporation	45,399	201,431	30,019,586
2017Y	Baltimore Gas and Electric Company	Exelon Corporation	46,870	229,910	28,970,770
2013Y	Commonwealth Edison Company	Exelon Corporation	229,733	218,055	93,089,440
2014Y	Commonwealth Edison Company	Exelon Corporation	243,867	592,902	90,578,581
2015Y	Commonwealth Edison Company	Exelon Corporation	293,633	353,477	87,297,520
2016Y	Commonwealth Edison Company	Exelon Corporation	369,632	532,117	89,608,490
2017Y	Commonwealth Edison Company	Exelon Corporation	427,803	411,459	87,568,519
2013Y	Delmarva Power & Light Company	Exelon Corporation	12,325	112,445	12,817,180
2014Y	Delmarva Power & Light Company	Exelon Corporation	13,512	134,192	12,782,957
2015Y	Delmarva Power & Light Company	Exelon Corporation	18,075	113,216	12,805,844
2016Y	Delmarva Power & Light Company	Exelon Corporation	20,219	67,647	12,486,406
2017Y	Delmarva Power & Light Company	Exelon Corporation	24,434	175,951	12,222,536
2013Y	PECO Energy Company	Exelon Corporation	137,892	46,587	38,044,130
2014Y	PECO Energy Company	Exelon Corporation	127,928	21,427	37,681,485
2015Y	PECO Energy Company	Exelon Corporation	165,320	72,513	38,124,845
2016Y	PECO Energy Company	Exelon Corporation	195,562	90,138	37,940,620
2017Y	PECO Energy Company	Exelon Corporation	184,929	97,154	37,233,657

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Year	Company Name	Ultimate Parent Company Name	Total Transmission O&M Expense (\$000)	Total Transmission Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Potomac Electric Power Company	Exelon Corporation	28,513	62,987	25,807,813
2014Y	Potomac Electric Power Company	Exelon Corporation	28,500	88,450	25,750,549
2015Y	Potomac Electric Power Company	Exelon Corporation	31,958	84,084	25,987,432
2016Y	Potomac Electric Power Company	Exelon Corporation	35,263	53,597	26,114,290
2017Y	Potomac Electric Power Company	Exelon Corporation	31,875	212,365	24,855,893
2013Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	88,011	6,980	18,712,244
2014Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	90,593	6,780	18,733,302
2015Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	165,848	10,026	18,501,986
2016Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	186,461	21,331	18,817,928
2017Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	198,785	3,646	18,290,574
2013Y	Jersey Central Power & Light Company	FirstEnergy Corp.	21,873	51,416	21,836,806
2014Y	Jersey Central Power & Light Company	FirstEnergy Corp.	28,943	71,056	21,846,258
2015Y	Jersey Central Power & Light Company	FirstEnergy Corp.	30,457	57,133	21,332,986
2016Y	Jersey Central Power & Light Company	FirstEnergy Corp.	19,203	133,376	21,250,880
2017Y	Jersey Central Power & Light Company	FirstEnergy Corp.	28,922	170,923	20,535,764
2013Y	Metropolitan Edison Company	FirstEnergy Corp.	18,774	28,722	14,226,643
2014Y	Metropolitan Edison Company	FirstEnergy Corp.	24,267	5,744	14,276,774
2015Y	Metropolitan Edison Company	FirstEnergy Corp.	23,436	31,057	14,291,940
2016Y	Metropolitan Edison Company	FirstEnergy Corp.	23,385	18,746	14,143,059
2017Y	Metropolitan Edison Company	FirstEnergy Corp.	15,053	887	13,777,426
2013Y	Monongahela Power Company	FirstEnergy Corp.	104,745	11,909	10,816,852
2014Y	Monongahela Power Company	FirstEnergy Corp.	244,607	22,536	17,361,198
2015Y	Monongahela Power Company	FirstEnergy Corp.	140,798	17,211	16,163,874
2016Y	Monongahela Power Company	FirstEnergy Corp.	107,056	19,440	17,434,322
2017Y	Monongahela Power Company	FirstEnergy Corp.	87,565	32,187	17,497,075
2013Y	Ohio Edison Company	FirstEnergy Corp.	158,352	5,736	27,059,942
2014Y	Ohio Edison Company	FirstEnergy Corp.	157,590	729	27,819,394
2015Y	Ohio Edison Company	FirstEnergy Corp.	217,345	4,510	27,056,153
2016Y	Ohio Edison Company	FirstEnergy Corp.	247,830	3,131	26,451,421
2017Y	Ohio Edison Company	FirstEnergy Corp.	265,836	2,709	23,977,058

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2013Y	Pennsylvania Electric Company	FirstEnergy Corp.	20,718	30,943	15,484,578
2014Y	Pennsylvania Electric Company	FirstEnergy Corp.	29,706	31,076	14,771,582
2015Y	Pennsylvania Electric Company	FirstEnergy Corp.	34,927	50,797	14,473,442
2016Y	Pennsylvania Electric Company	FirstEnergy Corp.	40,448	20,200	14,386,263
2017Y	Pennsylvania Electric Company	FirstEnergy Corp.	33,896	220	14,363,454
2013Y	Pennsylvania Power Company	FirstEnergy Corp.	7,406	839	4,567,609
2014Y	Pennsylvania Power Company	FirstEnergy Corp.	7,200	262	4,714,488
2015Y	Pennsylvania Power Company	FirstEnergy Corp.	5,024	661	4,526,159
2016Y	Pennsylvania Power Company	FirstEnergy Corp.	4,888	741	4,615,081
2017Y	Pennsylvania Power Company	FirstEnergy Corp.	5,125	874	4,633,922
2013Y	Potomac Edison Company	FirstEnergy Corp.	12,521	9,214	11,862,840
2014Y	Potomac Edison Company	FirstEnergy Corp.	18,919	41,864	11,898,341
2015Y	Potomac Edison Company	FirstEnergy Corp.	23,012	12,716	11,823,082
2016Y	Potomac Edison Company	FirstEnergy Corp.	31,594	22,336	11,554,451
2017Y	Potomac Edison Company	FirstEnergy Corp.	25,987	13,181	11,322,812
2013Y	Toledo Edison Company	FirstEnergy Corp.	59,050	1,052	11,956,365
2014Y	Toledo Edison Company	FirstEnergy Corp.	57,526	845	11,873,197
2015Y	Toledo Edison Company	FirstEnergy Corp.	86,936	1,392	11,779,382
2016Y	Toledo Edison Company	FirstEnergy Corp.	99,301	340	12,079,562
2017Y	Toledo Edison Company	FirstEnergy Corp.	104,469	439	10,856,745
2013Y	West Penn Power Company	FirstEnergy Corp.	36,703	11,945	20,052,177
2014Y	West Penn Power Company	FirstEnergy Corp.	44,467	11,840	20,291,236
2015Y	West Penn Power Company	FirstEnergy Corp.	52,421	16,623	20,083,013
2016Y	West Penn Power Company	FirstEnergy Corp.	58,089	9,763	19,998,876
2017Y	West Penn Power Company	FirstEnergy Corp.	76,934	19,456	19,616,843
2013Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	10,006	14,919	2,761,676
2014Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	11,048	16,180	2,623,309
2015Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	11,512	27,937	2,608,207
2016Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	11,238	20,040	2,684,357
2017Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	10,636	31,353	2,602,989

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2013Y	Tucson Electric Power Company	Fortis Inc.	15,350	35,201	13,025,375
2014Y	Tucson Electric Power Company	Fortis Inc.	16,560	78,651	13,311,011
2015Y	Tucson Electric Power Company	Fortis Inc.	24,317	120,689	14,279,396
2016Y	Tucson Electric Power Company	Fortis Inc.	24,381	28,483	13,718,397
2017Y	Tucson Electric Power Company	Fortis Inc.	30,952	42,329	13,442,595
2013Y	UNS Electric, Inc.	Fortis Inc.	13,494	46,506	2,230,041
2014Y	UNS Electric, Inc.	Fortis Inc.	12,453	14,037	1,982,714
2015Y	UNS Electric, Inc.	Fortis Inc.	20,886	3,190	1,746,289
2016Y	UNS Electric, Inc.	Fortis Inc.	21,802	7,039	1,762,853
2017Y	UNS Electric, Inc.	Fortis Inc.	17,425	4,493	1,916,799
2013Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	53,986	19,788	21,683,329
2014Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	64,368	13,934	22,472,307
2015Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	75,630	17,091	20,796,733
2016Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	72,526	21,445	21,433,876
2017Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	85,899	17,125	21,322,723
2013Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	21,259	22,617	8,413,828
2014Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	37,937	13,853	8,511,766
2015Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	39,570	10,837	8,385,574
2016Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	37,371	19,357	8,465,650
2017Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	47,345	10,838	8,386,821
2013Y	Central Maine Power Company	Iberdrola, S.A.	145,865	363,457	603,824
2014Y	Central Maine Power Company	Iberdrola, S.A.	152,667	376,458	590,204
2015Y	Central Maine Power Company	Iberdrola, S.A.	161,621	419,189	600,705
2016Y	Central Maine Power Company	Iberdrola, S.A.	173,794	60,357	599,743
2017Y	Central Maine Power Company	Iberdrola, S.A.	185,931	46,257	172,595
2013Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	43,677	30,423	19,115,201
2014Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	44,347	35,015	18,690,994
2015Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	46,526	26,861	17,887,199
2016Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	47,010	5,514	17,455,920
2017Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	42,068	141,184	16,633,428

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2013Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	11,098	88,218	9,024,632
2014Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	11,112	28,126	7,970,527
2015Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	16,811	3,652	7,319,681
2016Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	12,512	9,096	7,365,999
2017Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	10,116	163,557	7,216,272
2013Y	United Illuminating Company	Iberdrola, S.A.	122,290	66,552	5,422,427
2014Y	United Illuminating Company	Iberdrola, S.A.	133,723	37,085	5,327,395
2015Y	United Illuminating Company	Iberdrola, S.A.	139,123	48,697	5,450,238
2016Y	United Illuminating Company	Iberdrola, S.A.	144,985	87,813	5,334,351
2017Y	United Illuminating Company	Iberdrola, S.A.	157,507	33,937	5,093,904
2013Y	Idaho Power Co.	IDACORP, Inc.	26,450	45,517	16,302,681
2014Y	Idaho Power Co.	IDACORP, Inc.	27,336	46,722	16,312,786
2015Y	Idaho Power Co.	IDACORP, Inc.	27,353	66,247	15,518,629
2016Y	Idaho Power Co.	IDACORP, Inc.	25,408	49,498	15,381,629
2017Y	Idaho Power Co.	IDACORP, Inc.	25,279	48,021	16,706,603
2013Y	Kentucky Utilities Company	LKE	27,779	42,404	21,629,993
2014Y	Kentucky Utilities Company	LKE	30,428	44,056	21,986,858
2015Y	Kentucky Utilities Company	LKE	31,973	49,166	21,810,131
2016Y	Kentucky Utilities Company	LKE	31,677	74,824	21,437,963
2017Y	Kentucky Utilities Company	LKE	34,598	61,742	20,497,797
2013Y	Louisville Gas and Electric Company	LKE	14,397	16,161	14,478,316
2014Y	Louisville Gas and Electric Company	LKE	14,746	29,548	15,373,731
2015Y	Louisville Gas and Electric Company	LKE	14,636	38,265	13,502,213
2016Y	Louisville Gas and Electric Company	LKE	15,057	45,370	13,156,493
2017Y	Louisville Gas and Electric Company	LKE	15,343	8,951	13,133,134
2013Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	10,729	16,428	3,195,882
2014Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	13,968	34,505	3,331,202
2015Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	13,469	24,925	3,316,058
2016Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	34,017	28,765	3,303,555
2017Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	36,860	13,724	3,346,441

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2013Y	Madison Gas and Electric Company	MGE Energy, Inc.	33,059	0	3,557,446
2014Y	Madison Gas and Electric Company	MGE Energy, Inc.	33,146	0	3,514,574
2015Y	Madison Gas and Electric Company	MGE Energy, Inc.	36,332	0	3,545,081
2016Y	Madison Gas and Electric Company	MGE Energy, Inc.	36,422	0	3,741,999
2017Y	Madison Gas and Electric Company	MGE Energy, Inc.	41,610	0	3,584,998
2013Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	721	117	99,446
2014Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	739	37	99,841
2015Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	765	89	99,902
2016Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	866	130	95,751
2017Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	836	127	95,101
2013Y	Massachusetts Electric Company	National Grid plc	392,635	5,925	11,080,137
2014Y	Massachusetts Electric Company	National Grid plc	424,849	5,430	10,608,963
2015Y	Massachusetts Electric Company	National Grid plc	440,490	8,135	8,699,117
2016Y	Massachusetts Electric Company	National Grid plc	447,201	1,094	6,486,573
2017Y	Massachusetts Electric Company	National Grid plc	478,822	9,890	6,427,679
2013Y	Narragansett Electric Company	National Grid plc	47,117	153,567	5,133,864
2014Y	Narragansett Electric Company	National Grid plc	52,197	27,387	5,006,934
2015Y	Narragansett Electric Company	National Grid plc	40,070	166,837	4,492,267
2016Y	Narragansett Electric Company	National Grid plc	41,906	116,010	3,954,763
2017Y	Narragansett Electric Company	National Grid plc	68,123	39,163	3,868,162
2013Y	New England Power Company	National Grid plc	61,559	165,061	570,917
2014Y	New England Power Company	National Grid plc	60,821	263,633	565,418
2015Y	New England Power Company	National Grid plc	69,771	187,218	566,430
2016Y	New England Power Company	National Grid plc	58,485	255,629	314,990
2017Y	New England Power Company	National Grid plc	62,364	177,147	239,434
2013Y	Niagara Mohawk Power Corporation	National Grid plc	117,334	154,594	16,348,792
2014Y	Niagara Mohawk Power Corporation	National Grid plc	119,553	164,121	13,620,478
2015Y	Niagara Mohawk Power Corporation	National Grid plc	103,643	244,218	13,464,032
2016Y	Niagara Mohawk Power Corporation	National Grid plc	72,612	224,713	13,600,814
2017Y	Niagara Mohawk Power Corporation	National Grid plc	81,743	137,110	13,190,657

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2013Y	Florida Power & Light Company	NextEra Energy, Inc.	90,853	158,259	107,373,794
2014Y	Florida Power & Light Company	NextEra Energy, Inc.	98,718	290,960	112,929,729
2015Y	Florida Power & Light Company	NextEra Energy, Inc.	103,510	347,636	119,405,262
2016Y	Florida Power & Light Company	NextEra Energy, Inc.	78,459	450,157	119,279,691
2017Y	Florida Power & Light Company	NextEra Energy, Inc.	98,668	359,278	117,873,183
2013Y	Northern Indiana Public Service Company	NiSource Inc.	29,449	25,817	17,468,011
2014Y	Northern Indiana Public Service Company	NiSource Inc.	31,374	50,200	18,186,288
2015Y	Northern Indiana Public Service Company	NiSource Inc.	35,857	50,666	16,758,427
2016Y	Northern Indiana Public Service Company	NiSource Inc.	44,263	34,012	16,831,194
2017Y	Northern Indiana Public Service Company	NiSource Inc.	46,177	106,710	16,725,564
2013Y	NorthWestern Corporation	NorthWestern Corporation	29,595	29,483	9,519,519
2014Y	NorthWestern Corporation	NorthWestern Corporation	28,579	40,734	10,006,908
2015Y	NorthWestern Corporation	NorthWestern Corporation	27,739	96,006	11,027,880
2016Y	NorthWestern Corporation	NorthWestern Corporation	30,330	40,319	9,037,846
2017Y	NorthWestern Corporation	NorthWestern Corporation	43,449	98,010	8,924,244
2013Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	109,160	280,944	28,578,159
2014Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	122,725	542,641	30,234,927
2015Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	133,786	62,264	28,867,056
2016Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	168,202	123,134	29,762,475
2017Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	168,890	122,311	28,111,471
2013Y	Otter Tail Power Company	Otter Tail Corporation	19,286	9,559	6,219,751
2014Y	Otter Tail Power Company	Otter Tail Corporation	23,817	54,661	5,470,896
2015Y	Otter Tail Power Company	Otter Tail Corporation	27,080	70,054	4,709,464
2016Y	Otter Tail Power Company	Otter Tail Corporation	32,582	19,206	4,955,630
2017Y	Otter Tail Power Company	Otter Tail Corporation	31,130	91,651	5,040,591
2013Y	Pacific Gas and Electric Company	PG&E Corporation	227,245	818,308	88,322,913
2014Y	Pacific Gas and Electric Company	PG&E Corporation	243,048	727,387	88,189,685
2015Y	Pacific Gas and Electric Company	PG&E Corporation	286,712	898,809	87,981,023
2016Y	Pacific Gas and Electric Company	PG&E Corporation	296,115	1,056,052	85,067,412
2017Y	Pacific Gas and Electric Company	PG&E Corporation	300,976	696,359	88,175,650

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2013Y	Arizona Public Service Company	Pinnacle West Capital Corporation	72,068	77,880	32,087,545
2014Y	Arizona Public Service Company	Pinnacle West Capital Corporation	79,638	32,970	32,951,388
2015Y	Arizona Public Service Company	Pinnacle West Capital Corporation	83,335	257,482	33,628,854
2016Y	Arizona Public Service Company	Pinnacle West Capital Corporation	81,642	258,354	31,928,046
2017Y	Arizona Public Service Company	Pinnacle West Capital Corporation	82,704	98,023	30,910,170
2013Y	Public Service Company of New Mexico	PNM Resources, Inc.	38,078	33,818	12,001,980
2014Y	Public Service Company of New Mexico	PNM Resources, Inc.	38,628	52,003	11,836,387
2015Y	Public Service Company of New Mexico	PNM Resources, Inc.	37,692	78,444	11,541,512
2016Y	Public Service Company of New Mexico	PNM Resources, Inc.	34,985	75,688	12,280,191
2017Y	Public Service Company of New Mexico	PNM Resources, Inc.	36,621	74,904	12,454,143
2013Y	Portland General Electric Company	Portland General Electric Company	88,564	6,145	21,226,863
2014Y	Portland General Electric Company	Portland General Electric Company	96,567	24,571	21,080,082
2015Y	Portland General Electric Company	Portland General Electric Company	98,092	10,788	20,859,230
2016Y	Portland General Electric Company	Portland General Electric Company	95,365	61,689	21,247,271
2017Y	Portland General Electric Company	Portland General Electric Company	104,282	27,179	21,328,945
2013Y	PPL Electric Utilities Corporation	PPL Corporation	115,259	360,786	37,712,878
2014Y	PPL Electric Utilities Corporation	PPL Corporation	121,864	487,611	38,005,667
2015Y	PPL Electric Utilities Corporation	PPL Corporation	141,493	961,657	37,967,738
2016Y	PPL Electric Utilities Corporation	PPL Corporation	146,935	518,077	37,618,811
2017Y	PPL Electric Utilities Corporation	PPL Corporation	148,234	813,697	36,939,991
2013Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	85,305	1,061,404	44,103,026
2014Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	88,785	1,949,423	42,728,622
2015Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	92,088	1,764,577	43,533,905
2016Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	109,882	1,673,182	42,288,312
2017Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	108,849	1,322,621	40,894,038
2013Y	Puget Sound Energy, Inc.	Puget Holdings LLC	114,098	49,245	26,265,216
2014Y	Puget Sound Energy, Inc.	Puget Holdings LLC	130,002	98,082	21,968,767
2015Y	Puget Sound Energy, Inc.	Puget Holdings LLC	130,460	33,206	28,183,148
2016Y	Puget Sound Energy, Inc.	Puget Holdings LLC	134,458	64,193	29,143,765
2017Y	Puget Sound Energy, Inc.	Puget Holdings LLC	138,493	93,885	27,227,367

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2013Y	South Carolina Electric & Gas Co.	SCANA Corporation	18,376	60,863	22,326,578
2014Y	South Carolina Electric & Gas Co.	SCANA Corporation	21,707	109,883	23,332,942
2015Y	South Carolina Electric & Gas Co.	SCANA Corporation	17,983	91,373	23,114,845
2016Y	South Carolina Electric & Gas Co.	SCANA Corporation	17,972	65,843	23,471,194
2017Y	South Carolina Electric & Gas Co.	SCANA Corporation	23,053	363,115	22,879,069
2013Y	Oncor Electric Delivery Company LLC	Sempra Energy	648,730	663,088	112,312,279
2014Y	Oncor Electric Delivery Company LLC	Sempra Energy	815,763	749,086	114,905,829
2015Y	Oncor Electric Delivery Company LLC	Sempra Energy	864,378	379,200	116,594,625
2016Y	Oncor Electric Delivery Company LLC	Sempra Energy	963,301	580,164	115,791,379
2017Y	Oncor Electric Delivery Company LLC	Sempra Energy	997,203	610,460	117,017,075
2013Y	San Diego Gas & Electric Co.	Sempra Energy	95,859	236,436	32,916,382
2014Y	San Diego Gas & Electric Co.	Sempra Energy	81,094	599,992	30,952,957
2015Y	San Diego Gas & Electric Co.	Sempra Energy	85,341	360,021	33,132,033
2016Y	San Diego Gas & Electric Co.	Sempra Energy	87,877	294,786	29,443,890
2017Y	San Diego Gas & Electric Co.	Sempra Energy	87,096	477,153	29,300,970
2013Y	Alabama Power Company	Southern Company	60,633	176,759	66,309,626
2014Y	Alabama Power Company	Southern Company	73,289	316,899	67,155,314
2015Y	Alabama Power Company	Southern Company	71,603	225,560	63,847,336
2016Y	Alabama Power Company	Southern Company	81,966	168,478	63,873,423
2017Y	Alabama Power Company	Southern Company	88,563	228,714	63,290,561
2013Y	Georgia Power Company	Southern Company	107,047	314,998	84,726,779
2014Y	Georgia Power Company	Southern Company	132,535	281,411	89,190,865
2015Y	Georgia Power Company	Southern Company	108,279	326,941	87,859,128
2016Y	Georgia Power Company	Southern Company	139,315	360,958	89,686,468
2017Y	Georgia Power Company	Southern Company	105,047	297,025	86,478,222
2013Y	Gulf Power Company	Southern Company	20,792	50,423	14,909,545
2014Y	Gulf Power Company	Southern Company	25,233	48,531	16,028,868
2015Y	Gulf Power Company	Southern Company	25,807	184,474	14,031,937
2016Y	Gulf Power Company	Southern Company	26,960	16,402	14,616,769
2017Y	Gulf Power Company	Southern Company	26,683	18,640	15,445,454

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2013Y	Mississippi Power Company	Southern Company	14,835	73,265	14,591,834
2014Y	Mississippi Power Company	Southern Company	13,197	32,964	17,059,643
2015Y	Mississippi Power Company	Southern Company	11,705	22,173	16,487,788
2016Y	Mississippi Power Company	Southern Company	15,573	27,317	14,866,485
2017Y	Mississippi Power Company	Southern Company	11,013	28,622	15,283,882
2013Y	Southern Electric Generating Company	Southern Company	793	569	2,107,334
2014Y	Southern Electric Generating Company	Southern Company	695	93	2,084,739
2015Y	Southern Electric Generating Company	Southern Company	761	1,935	1,277,061
2016Y	Southern Electric Generating Company	Southern Company	758	916	394,540
2017Y	Southern Electric Generating Company	Southern Company	762	845	1,406,811
2013Y	UGI Utilities, Inc.	UGI Corporation	7,620	1,254	1,000,701
2014Y	UGI Utilities, Inc.	UGI Corporation	7,219	1,886	975,771
2015Y	UGI Utilities, Inc.	UGI Corporation	6,997	1,684	990,384
2016Y	UGI Utilities, Inc.	UGI Corporation	7,020	3,298	977,118
2017Y	UGI Utilities, Inc.	UGI Corporation	6,935	3,241	956,654
2013Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	7,170	3,376	505,418
2014Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	7,388	1,272	533,929
2015Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	8,026	275	460,811
2016Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	8,244	782	444,498
2017Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	8,980	130	455,496
2013Y	Unitil Energy Systems, Inc.	Unitil Corporation	23,753	0	1,234,354
2014Y	Unitil Energy Systems, Inc.	Unitil Corporation	22,418	0	1,230,055
2015Y	Unitil Energy Systems, Inc.	Unitil Corporation	25,401	0	1,229,879
2016Y	Unitil Energy Systems, Inc.	Unitil Corporation	27,707	0	1,203,404
2017Y	Unitil Energy Systems, Inc.	Unitil Corporation	30,265	0	1,215,797
2013Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	13,676	12,117	5,993,477
2014Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	15,566	23,338	6,240,584
2015Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	17,885	8,640	5,795,918
2016Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	21,206	17,190	5,610,259
2017Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	17,802	12,054	5,220,819

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2013Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	263,488	0	32,555,334
2014Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	275,927	0	32,942,828
2015Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	270,365	0	35,818,700
2016Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	293,123	0	35,894,209
2017Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	249,842	0	34,951,750
2013Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	120,106	0	16,129,893
2014Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	125,369	0	14,557,949
2015Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	135,533	0	14,839,077
2016Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	148,914	0	14,636,889
2017Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	139,007	0	14,814,995
2013Y	Kansas Gas and Electric Company	Westar Energy, Inc.	100,515	51,781	10,605,055
2014Y	Kansas Gas and Electric Company	Westar Energy, Inc.	124,606	94,400	10,800,465
2015Y	Kansas Gas and Electric Company	Westar Energy, Inc.	125,341	100,247	10,761,626
2016Y	Kansas Gas and Electric Company	Westar Energy, Inc.	127,328	60,430	11,297,034
2017Y	Kansas Gas and Electric Company	Westar Energy, Inc.	132,014	48,982	10,847,878
2013Y	Westar Energy (KPL)	Westar Energy, Inc.	102,195	64,304	17,484,374
2014Y	Westar Energy (KPL)	Westar Energy, Inc.	126,821	123,786	18,531,716
2015Y	Westar Energy (KPL)	Westar Energy, Inc.	129,031	47,299	17,180,535
2016Y	Westar Energy (KPL)	Westar Energy, Inc.	130,856	126,264	16,555,817
2017Y	Westar Energy (KPL)	Westar Energy, Inc.	133,385	96,081	18,790,662
2013Y	Westar Generating, Inc.	Westar Energy, Inc.	7	0	735,166
2014Y	Westar Generating, Inc.	Westar Energy, Inc.	2	0	608,351
2015Y	Westar Generating, Inc.	Westar Energy, Inc.	14	0	690,492
2016Y	Westar Generating, Inc.	Westar Energy, Inc.	2	0	945,870
2017Y	Westar Generating, Inc.	Westar Energy, Inc.	4	0	983,635
2013Y	Northern States Power Company - MN	Xcel Energy Inc.	244,340	160,201	37,474,524
2014Y	Northern States Power Company - MN	Xcel Energy Inc.	272,848	556,234	39,129,144
2015Y	Northern States Power Company - MN	Xcel Energy Inc.	309,442	466,046	39,484,126
2016Y	Northern States Power Company - MN	Xcel Energy Inc.	355,752	182,398	41,519,021
2017Y	Northern States Power Company - MN	Xcel Energy Inc.	369,339	146,364	40,720,489

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Transmission O&M Expense (\$000)	Total Transmission Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Northern States Power Company - WI	Xcel Energy Inc.	47,064	69,655	6,562,368
2014Y	Northern States Power Company - WI	Xcel Energy Inc.	58,765	87,610	6,750,889
2015Y	Northern States Power Company - WI	Xcel Energy Inc.	46,131	234,332	6,647,300
2016Y	Northern States Power Company - WI	Xcel Energy Inc.	66,586	35,565	6,641,542
2017Y	Northern States Power Company - WI	Xcel Energy Inc.	80,072	34,794	6,727,740
2013Y	Public Service Company of Colorado	Xcel Energy Inc.	61,572	131,265	33,450,187
2014Y	Public Service Company of Colorado	Xcel Energy Inc.	58,061	116,518	32,498,488
2015Y	Public Service Company of Colorado	Xcel Energy Inc.	52,952	85,517	32,396,474
2016Y	Public Service Company of Colorado	Xcel Energy Inc.	53,338	107,704	34,472,722
2017Y	Public Service Company of Colorado	Xcel Energy Inc.	54,763	86,184	36,486,396
2013Y	Southwestern Public Service Company	Xcel Energy Inc.	115,728	170,080	28,292,788
2014Y	Southwestern Public Service Company	Xcel Energy Inc.	126,490	497,237	28,265,391
2015Y	Southwestern Public Service Company	Xcel Energy Inc.	145,594	333,420	28,414,831
2016Y	Southwestern Public Service Company	Xcel Energy Inc.	173,307	258,530	28,383,129
2017Y	Southwestern Public Service Company	Xcel Energy Inc.	191,522	195,947	27,124,064
		Total	57,619,237	79,628,556	14,787,574,406

Distribution [2013-2017] Rankings Source: SNL

Holding Company	Distribution O&M	Distribution Plant: Add	Total Cash Costs	Total Sales of Elect. Volume (MWh)	Dist O&M and Plant/MWh	Ranking
ALLETE, Inc.	131,444,000	139,462,000	270,906,000	74,330,795	3.64	1
Entergy Corporation	1,222,166,000	2,849,524,000	4,071,690,000	694,118,461	5.87	2
Berkshire Hathaway Inc.	1,725,328,000	2,541,735,000	4,267,063,000	647,595,062	6.59	3
Otter Tail Corporation	83,277,000	92,318,000	175,595,000	26,396,332	6.65	4
AES Corporation	393,179,000	665,238,000	1,058,417,000	157,380,054	6.73	5
PNM Resources, Inc.	109,355,000	298,719,000	408,074,000	60,114,213	6.79	6
LKE	526,284,290	789,470,000	1,315,754,290	177,006,629	7.43	7
Xcel Energy Inc.	1,356,048,000	2,718,575,000	4,074,623,000	541,441,613	7.53	8
CenterPoint Energy, Inc.	1,160,162,000	2,067,320,000	3,227,482,000	421,479,989	7.66	9
IDACORP, Inc.	242,318,000	373,729,000	616,047,000	80,222,328	7.68	10
El Paso Electric Company	111,835,000	311,389,000	423,224,000	54,312,529	7.79	11
Southern Company	2,747,952,000	4,459,294,000	7,207,246,000	915,739,927	7.87	12
SCANA Corporation	264,964,000	669,186,000	934,150,000	115,124,628	8.11	13
Vectren Corporation	77,943,000	160,072,000	238,015,000	28,861,057	8.25	14
Sempra Energy	1,799,652,000	4,343,929,000	6,143,581,000	732,367,419	8.39	15
NiSource Inc.	226,592,000	509,640,000	736,232,000	85,969,484	8.56	16
Westar Energy, Inc.	452,871,000	771,147,000	1,224,018,000	142,855,162	8.57	17
Duke Energy Corporation	3,606,542,000	7,365,314,000	10,971,856,000	1,280,342,802	8.57	18
FirstEnergy Corp.	2,325,781,000	4,618,961,000	6,944,742,000	795,797,359	8.73	19
Cleco Partners LP	149,310,000	375,156,000	524,466,000	58,299,323	9.00	20
Great Plains Energy Inc	433,341,000	935,725,000	1,369,066,000	149,872,607	9.13	21
WEC Energy Group, Inc.	644,496,000	1,640,123,000	2,284,619,000	247,141,624	9.24	22
Puget Holdings LLC	406,914,000	821,874,000	1,228,788,000	132,788,263	9.25	23
Dominion Energy, Inc.	971,051,000	2,979,749,000	3,950,800,000	424,814,207	9.30	24
OGE Energy Corp.	411,823,000	950,189,000	1,362,012,000	145,554,088	9.36	25
AEP	3,473,281,000	5,502,148,000	8,975,429,000	926,060,218	9.69	26
Avista Corporation	179,854,000	461,608,000	641,462,000	63,822,212	10.05	27
Pinnacle West Capital Corp	498,192,000	1,228,762,000	1,726,954,000	161,506,003	10.69	28
Emera Incorporated	332,232,000	846,943,000	1,179,175,000	106,439,317	11.08	29
Fortis Inc.	373,224,000	647,033,000	1,020,257,000	90,696,008	11.25	30

Distribution [2013-2017] Rankings Source: SNL

Holding Company	Distribution O&M	Distribution Plant: Add	Total Cash Costs	Total Sales of Elect. Volume (MWh)	Dist O&M and Plant/MWh	Ranking
Black Hills Corporation	137,730,000	226,125,000	363,855,000	32,232,125	11.29	31
Alliant Energy Corporation	300,268,000	1,526,881,000	1,827,149,000	158,149,961	11.55	32
Ameren Corporation	1,915,446,000	2,839,002,000	4,754,448,000	396,912,264	11.98	33
PPL Corporation	823,592,000	1,550,544,000	2,374,136,000	188,245,085	12.61	34
Portland General Electric Co	531,921,000	821,320,000	1,353,241,000	105,742,391	12.80	35
DQE Holdings LLC	213,949,000	653,506,000	867,455,000	67,127,889	12.92	36
NextEra Energy, Inc.	2,527,266,000	5,065,762,000	7,593,028,000	576,861,659	13.16	37
UGI Corporation	34,400,000	30,738,000	65,138,000	4,900,628	13.29	38
Public Service Enterprise Group	845,817,000	2,002,632,000	2,848,449,000	213,547,903	13.34	39
MGE Energy, Inc.	71,935,000	176,946,000	248,881,000	17,944,098	13.87	40
MDU Resources Group, Inc.	77,742,000	152,848,000	230,590,000	16,493,138	13.98	41
NorthWestern Corporation	241,548,000	481,396,000	722,944,000	48,516,397	14.90	42
Algonquin Power & Utilities	173,268,000	278,461,000	451,729,000	29,685,318	15.22	43
DTE Energy Company	1,455,783,000	2,187,763,000	3,643,546,000	230,365,093	15.82	44
Caisse de dépôt et	171,615,000	231,135,000	402,750,000	23,640,213	17.04	45
CMS Energy Corporation	912,735,000	2,183,419,000	3,096,154,000	180,393,075	17.16	46
Exelon Corporation	6,045,349,000	11,839,199,000	17,884,548,000	1,034,415,389	17.29	47
Eversource Energy	1,771,282,000	3,280,772,000	5,052,054,000	289,678,343	17.44	48
Edison International	2,501,196,000	7,718,230,000	10,219,426,000	476,972,294	21.43	49
Iberdrola, S.A.	2,035,673,000	1,476,155,000	3,511,828,000	157,875,239	22.24	50
Unitil Corporation	64,283,000	125,644,000	189,927,000	8,513,641	22.31	51
Balfour Beatty Infrastructure	65,142,000	35,986,000	101,128,000	4,147,629	24.38	52
Mt. Carmel Public Utility Co	6,951,000	5,249,000	12,200,000	490,041	24.90	53
PG&E Corporation	3,793,462,000	7,439,437,000	11,232,899,000	437,736,683	25.66	54
Consolidated Edison, Inc.	2,887,687,000	6,118,124,000	9,005,811,000	264,071,298	34.10	55
National Grid plc	2,338,864,000	2,781,997,000	5,120,861,000	138,240,421	37.04	56
	58,382,315,290	113,363,603,000	171,745,918,290	14,641,347,928		

Q1	8.35
Q2	10.89
Q3	14.98
Industry Avg.	11.73

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Year	Company Name	Ultimate Parent Company Name	Total Distribution O&M Expense (\$000)	Total Distribution Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Dayton Power and Light Company	AES Corporation	33,218	76,614	19,416,290
2014Y	Dayton Power and Light Company	AES Corporation	37,767	47,364	18,643,195
2015Y	Dayton Power and Light Company	AES Corporation	53,049	84,046	16,433,036
2016Y	Dayton Power and Light Company	AES Corporation	36,251	85,476	16,158,129
2017Y	Dayton Power and Light Company	AES Corporation	34,573	69,271	12,236,126
2013Y	Indianapolis Power & Light Company	AES Corporation	36,907	42,490	16,033,922
2014Y	Indianapolis Power & Light Company	AES Corporation	37,733	58,730	16,391,321
2015Y	Indianapolis Power & Light Company	AES Corporation	39,364	63,910	14,397,561
2016Y	Indianapolis Power & Light Company	AES Corporation	41,074	69,591	14,185,985
2017Y	Indianapolis Power & Light Company	AES Corporation	43,243	67,746	13,484,489
2013Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	26,783	28,798	5,620,276
2014Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	30,603	54,676	5,131,750
2015Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	29,023	32,341	4,940,028
2016Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	26,993	38,100	4,950,707
2017Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	24,891	51,716	4,841,355
2013Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	5,879	10,133	552,273
2014Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	7,729	20,866	910,825
2015Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	7,022	10,123	933,262
2016Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	7,443	18,127	910,242
2017Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	6,902	13,581	894,600
2013Y	ALLETE (Minnesota Power)	ALLETE, Inc.	22,181	21,045	13,264,062
2014Y	ALLETE (Minnesota Power)	ALLETE, Inc.	24,612	23,412	13,942,499
2015Y	ALLETE (Minnesota Power)	ALLETE, Inc.	24,187	20,733	14,369,559
2016Y	ALLETE (Minnesota Power)	ALLETE, Inc.	27,423	37,084	14,147,335
2017Y	ALLETE (Minnesota Power)	ALLETE, Inc.	25,593	27,828	14,692,658
2013Y	Superior Water, Light and Power Company	ALLETE, Inc.	1,651	2,612	687,209
2014Y	Superior Water, Light and Power Company	ALLETE, Inc.	1,336	1,229	770,427
2015Y	Superior Water, Light and Power Company	ALLETE, Inc.	1,614	465	788,342
2016Y	Superior Water, Light and Power Company	ALLETE, Inc.	1,664	2,053	820,880
2017Y	Superior Water, Light and Power Company	ALLETE, Inc.	1,183	3,001	847,824

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Year	Company Name	Ultimate Parent Company Name	Total Distribution O&M Expense (\$000)	Total Distribution Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Interstate Power and Light Company	Alliant Energy Corporation	32,277	126,320	17,194,056
2014Y	Interstate Power and Light Company	Alliant Energy Corporation	33,407	182,041	16,871,181
2015Y	Interstate Power and Light Company	Alliant Energy Corporation	34,043	171,110	16,703,172
2016Y	Interstate Power and Light Company	Alliant Energy Corporation	29,928	173,459	16,662,731
2017Y	Interstate Power and Light Company	Alliant Energy Corporation	34,379	259,309	17,406,995
2013Y	Wisconsin Power and Light Company	Alliant Energy Corporation	26,106	105,645	14,862,652
2014Y	Wisconsin Power and Light Company	Alliant Energy Corporation	26,389	109,817	14,603,712
2015Y	Wisconsin Power and Light Company	Alliant Energy Corporation	28,778	96,376	15,199,013
2016Y	Wisconsin Power and Light Company	Alliant Energy Corporation	26,421	124,143	14,480,783
2017Y	Wisconsin Power and Light Company	Alliant Energy Corporation	28,540	178,661	14,165,666
2013Y	Ameren Illinois Company	Ameren Corporation	207,143	250,806	38,012,834
2014Y	Ameren Illinois Company	Ameren Corporation	224,109	278,301	37,915,282
2015Y	Ameren Illinois Company	Ameren Corporation	241,816	388,443	36,850,871
2016Y	Ameren Illinois Company	Ameren Corporation	249,492	353,320	36,754,294
2017Y	Ameren Illinois Company	Ameren Corporation	238,697	379,177	35,537,431
2013Y	Union Electric Company	Ameren Corporation	167,177	206,199	43,158,138
2014Y	Union Electric Company	Ameren Corporation	160,869	241,888	43,192,724
2015Y	Union Electric Company	Ameren Corporation	149,481	202,503	43,255,846
2016Y	Union Electric Company	Ameren Corporation	136,774	295,438	39,997,209
2017Y	Union Electric Company	Ameren Corporation	139,888	242,927	42,237,635
2013Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA
2014Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	47,215,732
2015Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA
2016Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA
2017Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA
2013Y	AEP Texas Central Company	American Electric Power Company, Inc.	62,071	196,024	NA
2014Y	AEP Texas Central Company	American Electric Power Company, Inc.	69,234	174,479	NA
2015Y	AEP Texas Central Company	American Electric Power Company, Inc.	77,322	172,350	NA
2016Y	AEP Texas Central Company	American Electric Power Company, Inc.	68,675	182,424	NA
2017Y	AEP Texas Central Company	American Electric Power Company, Inc.	NA	NA	NA

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Year	Company Name	Ultimate Parent Company Name	Total Distribution O&M Expense (\$000)	Total Distribution Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	AEP Texas North Company	American Electric Power Company, Inc.	19,547	43,937	2,435,181
2014Y	AEP Texas North Company	American Electric Power Company, Inc.	24,254	56,654	1,741,758
2015Y	AEP Texas North Company	American Electric Power Company, Inc.	29,113	59,762	1,368,742
2016Y	AEP Texas North Company	American Electric Power Company, Inc.	22,061	52,971	1,381,295
2017Y	AEP Texas North Company	American Electric Power Company, Inc.	NA	NA	NA
2013Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA	NA
2014Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA	NA
2015Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA	NA
2016Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA	NA
2017Y	AEP Texas, Inc.	American Electric Power Company, Inc.	97,321	249,463	923,791
2013Y	Appalachian Power Company	American Electric Power Company, Inc.	168,579	185,628	47,596,529
2014Y	Appalachian Power Company	American Electric Power Company, Inc.	123,923	147,800	35,769,358
2015Y	Appalachian Power Company	American Electric Power Company, Inc.	139,749	175,404	34,847,578
2016Y	Appalachian Power Company	American Electric Power Company, Inc.	158,709	202,718	34,862,820
2017Y	Appalachian Power Company	American Electric Power Company, Inc.	148,298	238,727	33,601,395
2013Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	55,467	91,758	38,036,953
2014Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	64,522	87,507	35,331,017
2015Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	56,683	106,776	30,404,900
2016Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	67,671	120,617	28,379,413
2017Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	67,239	187,563	29,819,953
2013Y	Kentucky Power Company	American Electric Power Company, Inc.	39,261	49,458	9,933,527
2014Y	Kentucky Power Company	American Electric Power Company, Inc.	45,049	41,495	11,993,933
2015Y	Kentucky Power Company	American Electric Power Company, Inc.	47,371	38,204	8,700,986
2016Y	Kentucky Power Company	American Electric Power Company, Inc.	49,489	36,074	7,276,047
2017Y	Kentucky Power Company	American Electric Power Company, Inc.	48,993	39,656	7,106,360
2013Y	Kingsport Power Company	American Electric Power Company, Inc.	5,316	11,563	2,045,738
2014Y	Kingsport Power Company	American Electric Power Company, Inc.	3,693	7,045	2,120,716
2015Y	Kingsport Power Company	American Electric Power Company, Inc.	4,035	12,122	2,086,994
2016Y	Kingsport Power Company	American Electric Power Company, Inc.	5,439	8,475	2,038,552
2017Y	Kingsport Power Company	American Electric Power Company, Inc.	5,231	9,514	1,971,080

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 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Distribution O&M Expense (\$000)	Total Distribution Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Ohio Power Company	American Electric Power Company, Inc.	136,596	210,570	60,639,578
2014Y	Ohio Power Company	American Electric Power Company, Inc.	187,981	255,520	15,591,760
2015Y	Ohio Power Company	American Electric Power Company, Inc.	189,705	271,497	45,685,751
2016Y	Ohio Power Company	American Electric Power Company, Inc.	192,513	229,541	45,870,876
2017Y	Ohio Power Company	American Electric Power Company, Inc.	177,929	224,804	45,688,514
2013Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	73,808	143,570	19,239,394
2014Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	68,452	130,480	19,517,893
2015Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	71,355	175,607	18,916,965
2016Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	81,312	166,948	19,425,199
2017Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	97,537	155,889	19,052,676
2013Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	68,828	115,513	28,553,233
2014Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	73,292	77,000	28,644,882
2015Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	84,126	95,004	27,269,400
2016Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	77,198	99,450	26,169,526
2017Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	85,913	103,996	26,257,034
2013Y	Wheeling Power Company	American Electric Power Company, Inc.	5,670	18,386	2,703,781
2014Y	Wheeling Power Company	American Electric Power Company, Inc.	3,571	10,881	3,269,892
2015Y	Wheeling Power Company	American Electric Power Company, Inc.	6,399	8,627	4,451,364
2016Y	Wheeling Power Company	American Electric Power Company, Inc.	7,756	11,839	5,106,836
2017Y	Wheeling Power Company	American Electric Power Company, Inc.	9,025	10,858	5,015,316
2013Y	Alaska Electric Light and Power Company	Avista Corporation	2,848	1,199	377,005
2014Y	Alaska Electric Light and Power Company	Avista Corporation	2,772	1,849	422,784
2015Y	Alaska Electric Light and Power Company	Avista Corporation	2,755	1,357	398,066
2016Y	Alaska Electric Light and Power Company	Avista Corporation	2,877	1,325	395,154
2017Y	Alaska Electric Light and Power Company	Avista Corporation	3,148	1,190	414,210
2013Y	Avista Corporation	Avista Corporation	31,871	72,181	13,318,994
2014Y	Avista Corporation	Avista Corporation	32,653	79,545	12,839,533
2015Y	Avista Corporation	Avista Corporation	35,900	109,014	11,942,035
2016Y	Avista Corporation	Avista Corporation	32,193	91,970	11,733,626
2017Y	Avista Corporation	Avista Corporation	32,837	101,978	11,980,805

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.
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Year	Company Name	Ultimate Parent Company Name	Total Distribution O&M Expense (\$000)	Total Distribution Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	11,472	8,814	881,022
2014Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	13,418	4,749	845,665
2015Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	13,330	7,524	844,127
2016Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	12,958	4,392	831,622
2017Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	13,964	10,507	745,193
2013Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	92,116	122,563	32,680,735
2014Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	92,165	148,208	32,499,927
2015Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	82,796	133,032	31,832,657
2016Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	79,336	138,076	32,475,023
2017Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	88,643	161,635	33,727,302
2013Y	Nevada Power Company	Berkshire Hathaway Inc.	37,296	66,956	24,064,426
2014Y	Nevada Power Company	Berkshire Hathaway Inc.	38,593	101,659	22,745,488
2015Y	Nevada Power Company	Berkshire Hathaway Inc.	24,900	110,190	25,481,621
2016Y	Nevada Power Company	Berkshire Hathaway Inc.	25,690	121,544	25,062,084
2017Y	Nevada Power Company	Berkshire Hathaway Inc.	26,906	99,376	23,751,206
2013Y	PacifiCorp	Berkshire Hathaway Inc.	208,439	199,692	65,869,008
2014Y	PacifiCorp	Berkshire Hathaway Inc.	207,564	197,377	65,269,524
2015Y	PacifiCorp	Berkshire Hathaway Inc.	207,035	223,383	63,530,663
2016Y	PacifiCorp	Berkshire Hathaway Inc.	196,498	219,708	60,958,902
2017Y	PacifiCorp	Berkshire Hathaway Inc.	197,649	230,721	62,468,319
2013Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	22,969	55,966	9,185,572
2014Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	21,817	44,586	8,882,408
2015Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	23,601	64,835	8,911,051
2016Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	24,350	49,308	9,000,293
2017Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	26,965	52,920	9,198,853
2013Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	13,022	12,951	2,028,643
2014Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	13,318	15,895	1,957,695
2015Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	13,782	25,912	1,959,505
2016Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	13,688	18,343	1,985,177
2017Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	14,735	21,674	1,932,972

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2013Y	Black Hills Power, Inc.	Black Hills Corporation	8,902	14,230	3,084,298
2014Y	Black Hills Power, Inc.	Black Hills Corporation	9,814	22,117	2,905,098
2015Y	Black Hills Power, Inc.	Black Hills Corporation	9,615	18,714	2,873,371
2016Y	Black Hills Power, Inc.	Black Hills Corporation	10,470	12,816	2,611,946
2017Y	Black Hills Power, Inc.	Black Hills Corporation	12,668	12,680	2,992,386
2013Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	2,904	9,257	1,635,140
2014Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	3,433	8,429	1,639,680
2015Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	3,449	12,930	1,418,697
2016Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	3,634	7,190	1,559,870
2017Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	4,296	12,987	1,647,647
2013Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	33,895	51,951	4,853,495
2014Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	33,687	41,479	4,713,347
2015Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	32,541	36,390	4,751,076
2016Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	35,159	52,948	4,688,744
2017Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	36,333	48,367	4,633,551
2013Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	215,490	306,547	79,984,965
2014Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	233,541	409,069	81,839,060
2015Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	229,591	507,692	84,190,647
2016Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	238,421	423,848	86,828,900
2017Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	243,119	420,164	88,636,417
2013Y	Cleco Power LLC	Cleco Partners LP	28,603	117,936	11,115,732
2014Y	Cleco Power LLC	Cleco Partners LP	29,011	59,926	12,201,940
2015Y	Cleco Power LLC	Cleco Partners LP	30,537	64,581	12,105,640
2016Y	Cleco Power LLC	Cleco Partners LP	30,383	63,967	11,596,427
2017Y	Cleco Power LLC	Cleco Partners LP	30,776	68,746	11,279,584
2013Y	Consumers Energy Company	CMS Energy Corporation	203,882	350,005	35,276,791
2014Y	Consumers Energy Company	CMS Energy Corporation	183,778	382,396	35,893,242
2015Y	Consumers Energy Company	CMS Energy Corporation	171,489	413,482	36,357,438
2016Y	Consumers Energy Company	CMS Energy Corporation	167,789	486,494	36,746,531
2017Y	Consumers Energy Company	CMS Energy Corporation	185,797	551,042	36,119,073

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Year	Company Name	Ultimate Parent Company Name	Total Distribution O&M Expense (\$000)	Total Distribution Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	474,143	866,299	47,335,320
2014Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	512,137	1,350,617	46,406,542
2015Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	535,169	1,189,676	47,202,850
2016Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	512,680	1,254,844	47,450,242
2017Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	518,530	1,116,810	46,342,045
2013Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	50,834	50,381	4,263,699
2014Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	52,867	59,950	4,256,408
2015Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	54,299	46,401	4,415,840
2016Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	49,098	52,382	4,315,576
2017Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	50,566	45,382	4,056,841
2013Y	Rockland Electric Company	Consolidated Edison, Inc.	11,459	20,568	1,642,857
2014Y	Rockland Electric Company	Consolidated Edison, Inc.	11,980	8,919	1,610,904
2015Y	Rockland Electric Company	Consolidated Edison, Inc.	16,293	8,803	1,631,351
2016Y	Rockland Electric Company	Consolidated Edison, Inc.	18,771	32,095	1,601,861
2017Y	Rockland Electric Company	Consolidated Edison, Inc.	18,861	14,997	1,538,962
2013Y	Virginia Electric and Power Company	Dominion Energy, Inc.	185,193	500,016	82,852,117
2014Y	Virginia Electric and Power Company	Dominion Energy, Inc.	174,005	528,803	83,938,195
2015Y	Virginia Electric and Power Company	Dominion Energy, Inc.	178,553	638,659	85,178,907
2016Y	Virginia Electric and Power Company	Dominion Energy, Inc.	240,017	625,355	87,875,099
2017Y	Virginia Electric and Power Company	Dominion Energy, Inc.	193,283	686,916	84,969,889
2013Y	Duquesne Light Company	DQE Holdings LLC	39,294	118,856	14,007,273
2014Y	Duquesne Light Company	DQE Holdings LLC	42,059	120,190	13,747,339
2015Y	Duquesne Light Company	DQE Holdings LLC	43,206	122,883	13,503,863
2016Y	Duquesne Light Company	DQE Holdings LLC	47,867	125,143	13,172,591
2017Y	Duquesne Light Company	DQE Holdings LLC	41,523	166,434	12,696,823
2013Y	DTE Electric Company	DTE Energy Company	308,569	314,418	47,062,371
2014Y	DTE Electric Company	DTE Energy Company	292,153	449,127	46,076,577
2015Y	DTE Electric Company	DTE Energy Company	267,184	443,164	46,281,765
2016Y	DTE Electric Company	DTE Energy Company	283,327	441,562	45,998,164
2017Y	DTE Electric Company	DTE Energy Company	304,550	539,492	44,946,216

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2013Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	191,804	389,738	85,789,697
2014Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	244,244	414,986	87,645,520
2015Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	244,757	467,466	87,375,571
2016Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	270,760	554,486	88,544,715
2017Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	276,189	733,301	87,306,564
2013Y	Duke Energy Florida, LLC	Duke Energy Corporation	135,030	205,839	38,164,155
2014Y	Duke Energy Florida, LLC	Duke Energy Corporation	146,828	216,051	38,728,049
2015Y	Duke Energy Florida, LLC	Duke Energy Corporation	150,197	332,870	39,989,379
2016Y	Duke Energy Florida, LLC	Duke Energy Corporation	148,788	359,491	40,660,935
2017Y	Duke Energy Florida, LLC	Duke Energy Corporation	149,549	405,085	40,290,293
2013Y	Duke Energy Indiana, LLC	Duke Energy Corporation	78,965	114,687	33,714,982
2014Y	Duke Energy Indiana, LLC	Duke Energy Corporation	82,121	123,445	33,433,620
2015Y	Duke Energy Indiana, LLC	Duke Energy Corporation	91,194	167,360	33,517,569
2016Y	Duke Energy Indiana, LLC	Duke Energy Corporation	99,680	173,160	34,368,826
2017Y	Duke Energy Indiana, LLC	Duke Energy Corporation	99,541	272,420	33,145,670
2013Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	10,273	15,744	4,546,692
2014Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	11,669	18,659	4,447,988
2015Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	12,448	22,197	5,277,786
2016Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	12,929	19,097	4,672,987
2017Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	18,190	34,942	4,908,072
2013Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	57,544	113,700	39,309,749
2014Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	62,768	80,946	27,741,596
2015Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	68,231	105,920	20,805,363
2016Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	82,036	180,888	21,320,518
2017Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	94,330	205,811	20,805,946
2013Y	Duke Energy Progress, LLC	Duke Energy Corporation	130,114	179,180	60,204,063
2014Y	Duke Energy Progress, LLC	Duke Energy Corporation	178,322	242,406	62,871,047
2015Y	Duke Energy Progress, LLC	Duke Energy Corporation	138,636	341,230	64,880,560
2016Y	Duke Energy Progress, LLC	Duke Energy Corporation	165,907	417,747	69,052,154
2017Y	Duke Energy Progress, LLC	Duke Energy Corporation	153,498	456,462	66,822,736

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2013Y	Southern California Edison Company	Edison International	461,916	1,137,078	90,552,978
2014Y	Southern California Edison Company	Edison International	494,881	1,534,333	116,437,195
2015Y	Southern California Edison Company	Edison International	497,566	1,822,203	90,495,397
2016Y	Southern California Edison Company	Edison International	523,427	1,615,936	88,194,998
2017Y	Southern California Edison Company	Edison International	523,406	1,608,680	91,291,726
2013Y	El Paso Electric Company	El Paso Electric Company	21,740	54,441	10,884,241
2014Y	El Paso Electric Company	El Paso Electric Company	22,321	69,379	11,009,422
2015Y	El Paso Electric Company	El Paso Electric Company	22,881	56,155	10,915,601
2016Y	El Paso Electric Company	El Paso Electric Company	22,669	65,908	10,598,511
2017Y	El Paso Electric Company	El Paso Electric Company	22,224	65,506	10,904,754
2013Y	Emera Maine	Emera Incorporated	10,006	10,567	1,869,923
2014Y	Emera Maine	Emera Incorporated	16,828	110,544	2,344,241
2015Y	Emera Maine	Emera Incorporated	16,512	21,550	2,325,046
2016Y	Emera Maine	Emera Incorporated	17,269	31,711	2,217,874
2017Y	Emera Maine	Emera Incorporated	16,947	35,705	2,270,073
2013Y	Maine Public Service Company	Emera Incorporated	3,606	4,781	NA
2014Y	Maine Public Service Company	Emera Incorporated	NA	NA	NA
2015Y	Maine Public Service Company	Emera Incorporated	NA	NA	NA
2016Y	Maine Public Service Company	Emera Incorporated	NA	NA	NA
2017Y	Maine Public Service Company	Emera Incorporated	NA	NA	NA
2013Y	Tampa Electric Company	Emera Incorporated	48,426	118,551	18,639,927
2014Y	Tampa Electric Company	Emera Incorporated	49,304	115,200	18,784,911
2015Y	Tampa Electric Company	Emera Incorporated	52,920	115,088	19,121,762
2016Y	Tampa Electric Company	Emera Incorporated	52,325	143,592	19,440,142
2017Y	Tampa Electric Company	Emera Incorporated	48,089	139,654	19,425,418
2013Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA
2014Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA
2015Y	EL Investment Company, LLC	Entergy Corporation	41,061	84,622	31,482,380
2016Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA
2017Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA

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Year	Company Name	Ultimate Parent Company Name	Total Distribution O&M Expense (\$000)	Total Distribution Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Entergy Arkansas, Inc.	Entergy Corporation	59,067	156,217	29,788,956
2014Y	Entergy Arkansas, Inc.	Entergy Corporation	68,806	166,914	31,350,781
2015Y	Entergy Arkansas, Inc.	Entergy Corporation	84,018	142,038	31,379,457
2016Y	Entergy Arkansas, Inc.	Entergy Corporation	77,522	228,616	29,363,790
2017Y	Entergy Arkansas, Inc.	Entergy Corporation	85,182	170,888	29,219,532
2013Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	26,253	29,597	27,130,595
2014Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	25,398	80,050	28,713,874
2015Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	21,667	41,746	21,426,698
2016Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	NA	NA	NA
2017Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	NA	NA	NA
2013Y	Entergy Louisiana, LLC	Entergy Corporation	49,808	30,529	34,156,904
2014Y	Entergy Louisiana, LLC	Entergy Corporation	51,360	91,251	37,479,888
2015Y	Entergy Louisiana, LLC	Entergy Corporation	21,714	57,759	14,743,976
2016Y	Entergy Louisiana, LLC	Entergy Corporation	80,745	247,871	63,634,403
2017Y	Entergy Louisiana, LLC	Entergy Corporation	87,570	222,180	61,747,129
2013Y	Entergy Mississippi, Inc.	Entergy Corporation	42,432	85,913	14,965,739
2014Y	Entergy Mississippi, Inc.	Entergy Corporation	33,675	78,897	16,054,977
2015Y	Entergy Mississippi, Inc.	Entergy Corporation	40,332	89,475	14,969,217
2016Y	Entergy Mississippi, Inc.	Entergy Corporation	44,578	126,882	14,462,253
2017Y	Entergy Mississippi, Inc.	Entergy Corporation	47,296	125,919	13,904,918
2013Y	Entergy New Orleans, LLC	Entergy Corporation	9,764	26,176	5,615,573
2014Y	Entergy New Orleans, LLC	Entergy Corporation	11,673	32,651	6,570,789
2015Y	Entergy New Orleans, LLC	Entergy Corporation	10,522	11,079	7,138,626
2016Y	Entergy New Orleans, LLC	Entergy Corporation	12,626	31,681	6,947,771
2017Y	Entergy New Orleans, LLC	Entergy Corporation	16,854	45,497	7,327,377
2013Y	Entergy Texas, Inc.	Entergy Corporation	34,215	74,664	23,811,698
2014Y	Entergy Texas, Inc.	Entergy Corporation	33,681	78,551	22,661,605
2015Y	Entergy Texas, Inc.	Entergy Corporation	34,046	84,301	23,855,503
2016Y	Entergy Texas, Inc.	Entergy Corporation	32,599	103,503	23,892,632
2017Y	Entergy Texas, Inc.	Entergy Corporation	37,702	104,057	20,321,420

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2013Y	Connecticut Light and Power Company	Eversource Energy	143,521	274,402	23,299,945
2014Y	Connecticut Light and Power Company	Eversource Energy	152,990	253,325	22,647,162
2015Y	Connecticut Light and Power Company	Eversource Energy	148,411	248,804	22,643,456
2016Y	Connecticut Light and Power Company	Eversource Energy	158,485	306,517	22,342,433
2017Y	Connecticut Light and Power Company	Eversource Energy	176,464	347,614	21,611,697
2013Y	NSTAR Electric Company	Eversource Energy	126,695	186,136	23,996,935
2014Y	NSTAR Electric Company	Eversource Energy	112,493	227,266	23,629,876
2015Y	NSTAR Electric Company	Eversource Energy	104,053	207,947	23,856,657
2016Y	NSTAR Electric Company	Eversource Energy	111,750	292,731	23,127,763
2017Y	NSTAR Electric Company	Eversource Energy	98,772	197,349	21,529,739
2013Y	Public Service Company of New Hampshire	Eversource Energy	60,787	81,052	9,118,546
2014Y	Public Service Company of New Hampshire	Eversource Energy	58,180	103,440	8,595,895
2015Y	Public Service Company of New Hampshire	Eversource Energy	64,753	106,451	8,441,532
2016Y	Public Service Company of New Hampshire	Eversource Energy	66,977	145,558	8,388,691
2017Y	Public Service Company of New Hampshire	Eversource Energy	71,005	132,127	8,116,389
2013Y	Western Massachusetts Electric Company	Eversource Energy	22,921	35,212	3,724,299
2014Y	Western Massachusetts Electric Company	Eversource Energy	23,900	29,657	3,610,361
2015Y	Western Massachusetts Electric Company	Eversource Energy	21,812	37,734	3,601,321
2016Y	Western Massachusetts Electric Company	Eversource Energy	24,128	28,226	3,706,255
2017Y	Western Massachusetts Electric Company	Eversource Energy	23,185	39,224	3,689,391
2013Y	Atlantic City Electric Company	Exelon Corporation	59,421	130,114	11,562,281
2014Y	Atlantic City Electric Company	Exelon Corporation	66,772	123,264	11,658,993
2015Y	Atlantic City Electric Company	Exelon Corporation	72,953	90,123	11,225,247
2016Y	Atlantic City Electric Company	Exelon Corporation	87,419	84,930	10,723,259
2017Y	Atlantic City Electric Company	Exelon Corporation	91,245	129,933	9,822,917
2013Y	Baltimore Gas and Electric Company	Exelon Corporation	173,989	361,673	30,767,778
2014Y	Baltimore Gas and Electric Company	Exelon Corporation	208,530	238,478	30,562,078
2015Y	Baltimore Gas and Electric Company	Exelon Corporation	187,276	245,153	30,304,293
2016Y	Baltimore Gas and Electric Company	Exelon Corporation	235,527	233,269	30,019,586
2017Y	Baltimore Gas and Electric Company	Exelon Corporation	199,723	196,635	28,970,770

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2013Y	Commonwealth Edison Company	Exelon Corporation	438,781	782,667	93,089,440
2014Y	Commonwealth Edison Company	Exelon Corporation	466,699	967,798	90,578,581
2015Y	Commonwealth Edison Company	Exelon Corporation	465,652	1,304,735	87,297,520
2016Y	Commonwealth Edison Company	Exelon Corporation	469,753	1,551,281	89,608,490
2017Y	Commonwealth Edison Company	Exelon Corporation	465,285	1,369,475	87,568,519
2013Y	Delmarva Power & Light Company	Exelon Corporation	56,785	165,494	12,817,180
2014Y	Delmarva Power & Light Company	Exelon Corporation	72,681	160,980	12,782,957
2015Y	Delmarva Power & Light Company	Exelon Corporation	75,338	134,680	12,805,844
2016Y	Delmarva Power & Light Company	Exelon Corporation	83,796	119,135	12,486,406
2017Y	Delmarva Power & Light Company	Exelon Corporation	84,765	142,450	12,222,536
2013Y	PECO Energy Company	Exelon Corporation	200,354	306,220	38,044,130
2014Y	PECO Energy Company	Exelon Corporation	315,412	329,379	37,681,485
2015Y	PECO Energy Company	Exelon Corporation	248,456	272,951	38,124,845
2016Y	PECO Energy Company	Exelon Corporation	261,731	261,061	37,940,620
2017Y	PECO Energy Company	Exelon Corporation	262,335	281,032	37,233,657
2013Y	Potomac Electric Power Company	Exelon Corporation	124,164	385,985	25,807,813
2014Y	Potomac Electric Power Company	Exelon Corporation	121,596	406,471	25,750,549
2015Y	Potomac Electric Power Company	Exelon Corporation	134,876	353,223	25,987,432
2016Y	Potomac Electric Power Company	Exelon Corporation	158,378	276,139	26,114,290
2017Y	Potomac Electric Power Company	Exelon Corporation	155,657	434,471	24,855,893
2013Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	35,046	87,701	18,712,244
2014Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	36,239	86,647	18,733,302
2015Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	42,854	83,331	18,501,986
2016Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	47,827	105,434	18,817,928
2017Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	53,813	96,725	18,290,574
2013Y	Jersey Central Power & Light Company	FirstEnergy Corp.	102,374	151,695	21,836,806
2014Y	Jersey Central Power & Light Company	FirstEnergy Corp.	87,115	173,742	21,846,258
2015Y	Jersey Central Power & Light Company	FirstEnergy Corp.	106,069	206,136	21,332,986
2016Y	Jersey Central Power & Light Company	FirstEnergy Corp.	95,301	204,648	21,250,880
2017Y	Jersey Central Power & Light Company	FirstEnergy Corp.	93,750	154,814	20,535,764

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2013Y	Metropolitan Edison Company	FirstEnergy Corp.	36,657	67,415	14,226,643
2014Y	Metropolitan Edison Company	FirstEnergy Corp.	51,433	101,674	14,276,774
2015Y	Metropolitan Edison Company	FirstEnergy Corp.	39,665	88,633	14,291,940
2016Y	Metropolitan Edison Company	FirstEnergy Corp.	45,464	100,463	14,143,059
2017Y	Metropolitan Edison Company	FirstEnergy Corp.	51,442	112,504	13,777,426
2013Y	Monongahela Power Company	FirstEnergy Corp.	34,233	75,907	10,816,852
2014Y	Monongahela Power Company	FirstEnergy Corp.	60,903	79,074	17,361,198
2015Y	Monongahela Power Company	FirstEnergy Corp.	67,261	87,372	16,163,874
2016Y	Monongahela Power Company	FirstEnergy Corp.	65,326	82,242	17,434,322
2017Y	Monongahela Power Company	FirstEnergy Corp.	65,980	95,803	17,497,075
2013Y	Ohio Edison Company	FirstEnergy Corp.	58,468	114,168	27,059,942
2014Y	Ohio Edison Company	FirstEnergy Corp.	54,947	121,864	27,819,394
2015Y	Ohio Edison Company	FirstEnergy Corp.	56,758	114,984	27,056,153
2016Y	Ohio Edison Company	FirstEnergy Corp.	54,428	109,994	26,451,421
2017Y	Ohio Edison Company	FirstEnergy Corp.	74,846	98,189	23,977,058
2013Y	Pennsylvania Electric Company	FirstEnergy Corp.	41,874	95,006	15,484,578
2014Y	Pennsylvania Electric Company	FirstEnergy Corp.	42,236	103,508	14,771,582
2015Y	Pennsylvania Electric Company	FirstEnergy Corp.	43,420	92,701	14,473,442
2016Y	Pennsylvania Electric Company	FirstEnergy Corp.	44,600	137,435	14,386,263
2017Y	Pennsylvania Electric Company	FirstEnergy Corp.	65,175	124,714	14,363,454
2013Y	Pennsylvania Power Company	FirstEnergy Corp.	13,245	22,620	4,567,609
2014Y	Pennsylvania Power Company	FirstEnergy Corp.	12,063	35,005	4,714,488
2015Y	Pennsylvania Power Company	FirstEnergy Corp.	12,443	53,076	4,526,159
2016Y	Pennsylvania Power Company	FirstEnergy Corp.	12,053	48,083	4,615,081
2017Y	Pennsylvania Power Company	FirstEnergy Corp.	16,137	49,940	4,633,922
2013Y	Potomac Edison Company	FirstEnergy Corp.	26,135	71,187	11,862,840
2014Y	Potomac Edison Company	FirstEnergy Corp.	42,664	60,676	11,898,341
2015Y	Potomac Edison Company	FirstEnergy Corp.	33,403	60,897	11,823,082
2016Y	Potomac Edison Company	FirstEnergy Corp.	32,613	73,657	11,554,451
2017Y	Potomac Edison Company	FirstEnergy Corp.	31,397	72,714	11,322,812

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Year	Company Name	Ultimate Parent Company Name	Total Distribution O&M Expense (\$000)	Total Distribution Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Toledo Edison Company	FirstEnergy Corp.	17,264	26,853	11,956,365
2014Y	Toledo Edison Company	FirstEnergy Corp.	16,372	38,991	11,873,197
2015Y	Toledo Edison Company	FirstEnergy Corp.	19,736	33,332	11,779,382
2016Y	Toledo Edison Company	FirstEnergy Corp.	17,331	36,645	12,079,562
2017Y	Toledo Edison Company	FirstEnergy Corp.	19,936	27,191	10,856,745
2013Y	West Penn Power Company	FirstEnergy Corp.	37,859	110,210	20,052,177
2014Y	West Penn Power Company	FirstEnergy Corp.	38,564	81,148	20,291,236
2015Y	West Penn Power Company	FirstEnergy Corp.	54,854	94,485	20,083,013
2016Y	West Penn Power Company	FirstEnergy Corp.	48,706	130,113	19,998,876
2017Y	West Penn Power Company	FirstEnergy Corp.	67,502	137,615	19,616,843
2013Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	44,377	45,480	2,761,676
2014Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	44,142	35,593	2,623,309
2015Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	44,594	52,511	2,608,207
2016Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	44,997	49,968	2,684,357
2017Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	50,433	49,711	2,602,989
2013Y	Tucson Electric Power Company	Fortis Inc.	21,731	57,690	13,025,375
2014Y	Tucson Electric Power Company	Fortis Inc.	24,117	71,192	13,311,011
2015Y	Tucson Electric Power Company	Fortis Inc.	22,407	76,080	14,279,396
2016Y	Tucson Electric Power Company	Fortis Inc.	23,432	65,102	13,718,397
2017Y	Tucson Electric Power Company	Fortis Inc.	23,490	66,461	13,442,595
2013Y	UNS Electric, Inc.	Fortis Inc.	6,076	9,584	2,230,041
2014Y	UNS Electric, Inc.	Fortis Inc.	5,497	18,143	1,982,714
2015Y	UNS Electric, Inc.	Fortis Inc.	5,245	16,226	1,746,289
2016Y	UNS Electric, Inc.	Fortis Inc.	5,760	18,696	1,762,853
2017Y	UNS Electric, Inc.	Fortis Inc.	6,926	14,596	1,916,799
2013Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	53,615	89,550	21,683,329
2014Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	51,169	137,982	22,472,307
2015Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	53,422	159,751	20,796,733
2016Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	55,971	110,062	21,433,876
2017Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	56,071	111,477	21,322,723

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Year	Company Name	Ultimate Parent Company Name	Total Distribution O&M Expense (\$000)	Total Distribution Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	29,003	59,334	8,413,828
2014Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	32,301	52,029	8,511,766
2015Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	31,845	68,176	8,385,574
2016Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	34,872	70,091	8,465,650
2017Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	35,072	77,273	8,386,821
2013Y	Central Maine Power Company	Iberdrola, S.A.	101,202	55,111	603,824
2014Y	Central Maine Power Company	Iberdrola, S.A.	95,837	62,111	590,204
2015Y	Central Maine Power Company	Iberdrola, S.A.	95,668	18,842	600,705
2016Y	Central Maine Power Company	Iberdrola, S.A.	95,005	63,971	599,743
2017Y	Central Maine Power Company	Iberdrola, S.A.	97,758	99,396	172,595
2013Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	128,820	93,551	19,115,201
2014Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	140,939	78,076	18,690,994
2015Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	126,688	54,453	17,887,199
2016Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	184,037	53,098	17,455,920
2017Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	230,586	95,728	16,633,428
2013Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	45,602	53,434	9,024,632
2014Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	46,080	41,357	7,970,527
2015Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	52,426	9,802	7,319,681
2016Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	54,581	21,771	7,365,999
2017Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	65,432	90,175	7,216,272
2013Y	United Illuminating Company	Iberdrola, S.A.	84,008	129,682	5,422,427
2014Y	United Illuminating Company	Iberdrola, S.A.	83,114	171,739	5,327,395
2015Y	United Illuminating Company	Iberdrola, S.A.	98,347	132,046	5,450,238
2016Y	United Illuminating Company	Iberdrola, S.A.	102,068	97,207	5,334,351
2017Y	United Illuminating Company	Iberdrola, S.A.	107,475	54,605	5,093,904
2013Y	Idaho Power Co.	IDACORP, Inc.	46,979	57,666	16,302,681
2014Y	Idaho Power Co.	IDACORP, Inc.	46,305	69,497	16,312,786
2015Y	Idaho Power Co.	IDACORP, Inc.	48,358	77,325	15,518,629
2016Y	Idaho Power Co.	IDACORP, Inc.	50,033	77,748	15,381,629
2017Y	Idaho Power Co.	IDACORP, Inc.	50,643	91,493	16,706,603

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2013Y	Kentucky Utilities Company	LKE	56,507	66,870	21,629,993
2014Y	Kentucky Utilities Company	LKE	60,874	87,349	21,986,858
2015Y	Kentucky Utilities Company	LKE	56,957	77,963	21,810,131
2016Y	Kentucky Utilities Company	LKE	57,318	105,455	21,437,963
2017Y	Kentucky Utilities Company	LKE	56,162	83,549	20,497,797
2013Y	Louisville Gas and Electric Company	LKE	46,074	47,343	14,478,316
2014Y	Louisville Gas and Electric Company	LKE	51,335	78,051	15,373,731
2015Y	Louisville Gas and Electric Company	LKE	49,032	78,271	13,502,213
2016Y	Louisville Gas and Electric Company	LKE	46,816	78,681	13,156,493
2017Y	Louisville Gas and Electric Company	LKE	45,209	85,938	13,133,134
2013Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	15,581	33,419	3,195,882
2014Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	15,440	40,430	3,331,202
2015Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	15,747	34,104	3,316,058
2016Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	15,619	25,079	3,303,555
2017Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	15,355	19,816	3,346,441
2013Y	Madison Gas and Electric Company	MGE Energy, Inc.	14,756	41,569	3,557,446
2014Y	Madison Gas and Electric Company	MGE Energy, Inc.	14,099	35,040	3,514,574
2015Y	Madison Gas and Electric Company	MGE Energy, Inc.	14,141	27,493	3,545,081
2016Y	Madison Gas and Electric Company	MGE Energy, Inc.	14,644	35,044	3,741,999
2017Y	Madison Gas and Electric Company	MGE Energy, Inc.	14,295	37,800	3,584,998
2013Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	1,052	800	99,446
2014Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	1,093	946	99,841
2015Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	1,431	1,097	99,902
2016Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	1,618	1,220	95,751
2017Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	1,757	1,186	95,101
2013Y	Massachusetts Electric Company	National Grid plc	182,207	144,261	11,080,137
2014Y	Massachusetts Electric Company	National Grid plc	154,189	202,739	10,608,963
2015Y	Massachusetts Electric Company	National Grid plc	152,459	267,123	8,699,117
2016Y	Massachusetts Electric Company	National Grid plc	167,144	232,709	6,486,573
2017Y	Massachusetts Electric Company	National Grid plc	158,884	265,180	6,427,679

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2013Y	Narragansett Electric Company	National Grid plc	51,188	39,112	5,133,864
2014Y	Narragansett Electric Company	National Grid plc	47,799	74,616	5,006,934
2015Y	Narragansett Electric Company	National Grid plc	40,698	78,670	4,492,267
2016Y	Narragansett Electric Company	National Grid plc	50,220	61,018	3,954,763
2017Y	Narragansett Electric Company	National Grid plc	52,514	73,062	3,868,162
2013Y	New England Power Company	National Grid plc	77	0	570,917
2014Y	New England Power Company	National Grid plc	27	-869	565,418
2015Y	New England Power Company	National Grid plc	35	7,940	566,430
2016Y	New England Power Company	National Grid plc	40	-7,346	314,990
2017Y	New England Power Company	National Grid plc	71	0	239,434
2013Y	Niagara Mohawk Power Corporation	National Grid plc	277,222	187,286	16,348,792
2014Y	Niagara Mohawk Power Corporation	National Grid plc	257,711	324,129	13,620,478
2015Y	Niagara Mohawk Power Corporation	National Grid plc	218,069	346,170	13,464,032
2016Y	Niagara Mohawk Power Corporation	National Grid plc	239,049	249,747	13,600,814
2017Y	Niagara Mohawk Power Corporation	National Grid plc	289,261	236,450	13,190,657
2013Y	Florida Power & Light Company	NextEra Energy, Inc.	265,813	581,682	107,373,794
2014Y	Florida Power & Light Company	NextEra Energy, Inc.	268,585	737,597	112,929,729
2015Y	Florida Power & Light Company	NextEra Energy, Inc.	274,770	1,085,860	119,405,262
2016Y	Florida Power & Light Company	NextEra Energy, Inc.	271,303	1,205,032	119,279,691
2017Y	Florida Power & Light Company	NextEra Energy, Inc.	1,446,795	1,455,591	117,873,183
2013Y	Northern Indiana Public Service Company	NiSource Inc.	48,247	71,715	17,468,011
2014Y	Northern Indiana Public Service Company	NiSource Inc.	43,588	83,457	18,186,288
2015Y	Northern Indiana Public Service Company	NiSource Inc.	41,331	99,516	16,758,427
2016Y	Northern Indiana Public Service Company	NiSource Inc.	43,824	128,135	16,831,194
2017Y	Northern Indiana Public Service Company	NiSource Inc.	49,602	126,817	16,725,564
2013Y	NorthWestern Corporation	NorthWestern Corporation	53,600	73,778	9,519,519
2014Y	NorthWestern Corporation	NorthWestern Corporation	50,360	84,915	10,006,908
2015Y	NorthWestern Corporation	NorthWestern Corporation	49,950	100,394	11,027,880
2016Y	NorthWestern Corporation	NorthWestern Corporation	43,025	89,122	9,037,846
2017Y	NorthWestern Corporation	NorthWestern Corporation	44,613	133,187	8,924,244

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2013Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	80,209	198,520	28,578,159
2014Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	80,858	187,793	30,234,927
2015Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	74,150	194,277	28,867,056
2016Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	80,041	184,692	29,762,475
2017Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	96,565	184,907	28,111,471
2013Y	Otter Tail Power Company	Otter Tail Corporation	16,699	18,910	6,219,751
2014Y	Otter Tail Power Company	Otter Tail Corporation	16,511	20,041	5,470,896
2015Y	Otter Tail Power Company	Otter Tail Corporation	15,514	16,797	4,709,464
2016Y	Otter Tail Power Company	Otter Tail Corporation	16,791	17,137	4,955,630
2017Y	Otter Tail Power Company	Otter Tail Corporation	17,762	19,433	5,040,591
2013Y	Pacific Gas and Electric Company	PG&E Corporation	629,019	1,483,663	88,322,913
2014Y	Pacific Gas and Electric Company	PG&E Corporation	675,094	1,277,867	88,189,685
2015Y	Pacific Gas and Electric Company	PG&E Corporation	829,694	1,504,948	87,981,023
2016Y	Pacific Gas and Electric Company	PG&E Corporation	933,331	1,508,269	85,067,412
2017Y	Pacific Gas and Electric Company	PG&E Corporation	726,324	1,664,690	88,175,650
2013Y	Arizona Public Service Company	Pinnacle West Capital Corporation	96,398	203,565	32,087,545
2014Y	Arizona Public Service Company	Pinnacle West Capital Corporation	92,229	213,685	32,951,388
2015Y	Arizona Public Service Company	Pinnacle West Capital Corporation	95,469	243,885	33,628,854
2016Y	Arizona Public Service Company	Pinnacle West Capital Corporation	104,812	247,452	31,928,046
2017Y	Arizona Public Service Company	Pinnacle West Capital Corporation	109,284	320,175	30,910,170
2013Y	Public Service Company of New Mexico	PNM Resources, Inc.	24,289	63,008	12,001,980
2014Y	Public Service Company of New Mexico	PNM Resources, Inc.	21,773	64,261	11,836,387
2015Y	Public Service Company of New Mexico	PNM Resources, Inc.	22,882	61,865	11,541,512
2016Y	Public Service Company of New Mexico	PNM Resources, Inc.	19,744	60,790	12,280,191
2017Y	Public Service Company of New Mexico	PNM Resources, Inc.	20,667	48,795	12,454,143
2013Y	Portland General Electric Company	Portland General Electric Company	86,417	139,424	21,226,863
2014Y	Portland General Electric Company	Portland General Electric Company	99,839	144,332	21,080,082
2015Y	Portland General Electric Company	Portland General Electric Company	101,417	154,813	20,859,230
2016Y	Portland General Electric Company	Portland General Electric Company	116,611	164,649	21,247,271
2017Y	Portland General Electric Company	Portland General Electric Company	127,637	218,102	21,328,945

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2013Y	PPL Electric Utilities Corporation	PPL Corporation	166,294	279,496	37,712,878
2014Y	PPL Electric Utilities Corporation	PPL Corporation	176,101	259,358	38,005,667
2015Y	PPL Electric Utilities Corporation	PPL Corporation	157,935	266,973	37,967,738
2016Y	PPL Electric Utilities Corporation	PPL Corporation	166,677	317,766	37,618,811
2017Y	PPL Electric Utilities Corporation	PPL Corporation	156,585	426,951	36,939,991
2013Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	161,707	367,725	44,103,026
2014Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	169,243	215,303	42,728,622
2015Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	169,001	374,845	43,533,905
2016Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	176,532	486,743	42,288,312
2017Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	169,334	558,016	40,894,038
2013Y	Puget Sound Energy, Inc.	Puget Holdings LLC	77,322	86,240	26,265,216
2014Y	Puget Sound Energy, Inc.	Puget Holdings LLC	84,585	163,238	21,968,767
2015Y	Puget Sound Energy, Inc.	Puget Holdings LLC	82,427	150,204	28,183,148
2016Y	Puget Sound Energy, Inc.	Puget Holdings LLC	86,298	208,702	29,143,765
2017Y	Puget Sound Energy, Inc.	Puget Holdings LLC	76,282	213,490	27,227,367
2013Y	South Carolina Electric & Gas Co.	SCANA Corporation	46,623	135,213	22,326,578
2014Y	South Carolina Electric & Gas Co.	SCANA Corporation	51,470	125,185	23,332,942
2015Y	South Carolina Electric & Gas Co.	SCANA Corporation	56,138	135,005	23,114,845
2016Y	South Carolina Electric & Gas Co.	SCANA Corporation	55,248	154,146	23,471,194
2017Y	South Carolina Electric & Gas Co.	SCANA Corporation	55,485	119,637	22,879,069
2013Y	Oncor Electric Delivery Company LLC	Sempra Energy	191,839	394,462	112,312,279
2014Y	Oncor Electric Delivery Company LLC	Sempra Energy	200,557	436,384	114,905,829
2015Y	Oncor Electric Delivery Company LLC	Sempra Energy	236,440	537,277	116,594,625
2016Y	Oncor Electric Delivery Company LLC	Sempra Energy	250,555	621,144	115,791,379
2017Y	Oncor Electric Delivery Company LLC	Sempra Energy	252,411	705,889	117,017,075
2013Y	San Diego Gas & Electric Co.	Sempra Energy	128,782	242,705	32,916,382
2014Y	San Diego Gas & Electric Co.	Sempra Energy	112,219	259,549	30,952,957
2015Y	San Diego Gas & Electric Co.	Sempra Energy	141,442	361,852	33,132,033
2016Y	San Diego Gas & Electric Co.	Sempra Energy	141,031	341,598	29,443,890
2017Y	San Diego Gas & Electric Co.	Sempra Energy	144,376	443,069	29,300,970

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2013Y	Alabama Power Company	Southern Company	170,411	287,329	66,309,626
2014Y	Alabama Power Company	Southern Company	188,700	321,366	67,155,314
2015Y	Alabama Power Company	Southern Company	177,116	301,021	63,847,336
2016Y	Alabama Power Company	Southern Company	184,276	346,170	63,873,423
2017Y	Alabama Power Company	Southern Company	239,283	408,891	63,290,561
2013Y	Georgia Power Company	Southern Company	237,660	351,116	84,726,779
2014Y	Georgia Power Company	Southern Company	302,102	414,508	89,190,865
2015Y	Georgia Power Company	Southern Company	276,806	432,873	87,859,128
2016Y	Georgia Power Company	Southern Company	302,244	521,749	89,686,468
2017Y	Georgia Power Company	Southern Company	268,673	568,705	86,478,222
2013Y	Gulf Power Company	Southern Company	42,915	71,849	14,909,545
2014Y	Gulf Power Company	Southern Company	46,843	61,302	16,028,868
2015Y	Gulf Power Company	Southern Company	45,678	56,040	14,031,937
2016Y	Gulf Power Company	Southern Company	45,456	57,848	14,616,769
2017Y	Gulf Power Company	Southern Company	48,030	63,408	15,445,454
2013Y	Mississippi Power Company	Southern Company	34,358	34,770	14,591,834
2014Y	Mississippi Power Company	Southern Company	36,912	35,685	17,059,643
2015Y	Mississippi Power Company	Southern Company	32,805	48,948	16,487,788
2016Y	Mississippi Power Company	Southern Company	36,118	35,587	14,866,485
2017Y	Mississippi Power Company	Southern Company	31,566	40,129	15,283,882
2013Y	UGI Utilities, Inc.	UGI Corporation	5,952	5,198	1,000,701
2014Y	UGI Utilities, Inc.	UGI Corporation	7,773	5,183	975,771
2015Y	UGI Utilities, Inc.	UGI Corporation	6,669	5,480	990,384
2016Y	UGI Utilities, Inc.	UGI Corporation	7,012	4,908	977,118
2017Y	UGI Utilities, Inc.	UGI Corporation	6,994	9,969	956,654
2013Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	3,318	4,521	505,418
2014Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	3,960	4,903	533,929
2015Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	3,680	7,246	460,811
2016Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	3,714	7,911	444,498
2017Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	4,363	7,327	455,496

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2013Y	Unitil Energy Systems, Inc.	Unitil Corporation	9,592	15,524	1,234,354
2014Y	Unitil Energy Systems, Inc.	Unitil Corporation	8,801	13,803	1,230,055
2015Y	Unitil Energy Systems, Inc.	Unitil Corporation	9,010	12,567	1,229,879
2016Y	Unitil Energy Systems, Inc.	Unitil Corporation	8,719	23,715	1,203,404
2017Y	Unitil Energy Systems, Inc.	Unitil Corporation	9,126	28,127	1,215,797
2013Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	15,196	22,238	5,993,477
2014Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	15,881	27,090	6,240,584
2015Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	15,461	31,883	5,795,918
2016Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	15,350	31,886	5,610,259
2017Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	16,055	46,975	5,220,819
2013Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	92,452	190,113	32,555,334
2014Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	80,131	216,010	32,942,828
2015Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	80,602	238,644	35,818,700
2016Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	92,874	252,002	35,894,209
2017Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	78,376	287,164	34,951,750
2013Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	46,236	37,798	16,129,893
2014Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	51,622	62,710	14,557,949
2015Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	52,052	94,857	14,839,077
2016Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	37,348	112,114	14,636,889
2017Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	32,803	148,711	14,814,995
2013Y	Kansas Gas and Electric Company	Westar Energy, Inc.	41,913	26,896	10,605,055
2014Y	Kansas Gas and Electric Company	Westar Energy, Inc.	45,361	56,626	10,800,465
2015Y	Kansas Gas and Electric Company	Westar Energy, Inc.	36,881	58,332	10,761,626
2016Y	Kansas Gas and Electric Company	Westar Energy, Inc.	42,611	85,473	11,297,034
2017Y	Kansas Gas and Electric Company	Westar Energy, Inc.	40,354	104,586	10,847,878
2013Y	Westar Energy (KPL)	Westar Energy, Inc.	59,147	41,700	17,484,374
2014Y	Westar Energy (KPL)	Westar Energy, Inc.	49,269	76,430	18,531,716
2015Y	Westar Energy (KPL)	Westar Energy, Inc.	49,632	104,404	17,180,535
2016Y	Westar Energy (KPL)	Westar Energy, Inc.	45,165	123,111	16,555,817
2017Y	Westar Energy (KPL)	Westar Energy, Inc.	42,538	93,589	18,790,662

Notes: "NA" data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Distribution O&M Expense (\$000)	Total Distribution Plant: Add (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Northern States Power Company - MN	Xcel Energy Inc.	121,107	171,686	37,474,524
2014Y	Northern States Power Company - MN	Xcel Energy Inc.	117,778	188,375	39,129,144
2015Y	Northern States Power Company - MN	Xcel Energy Inc.	106,452	166,340	39,484,126
2016Y	Northern States Power Company - MN	Xcel Energy Inc.	110,969	206,460	41,519,021
2017Y	Northern States Power Company - MN	Xcel Energy Inc.	111,166	172,861	40,720,489
2013Y	Northern States Power Company - WI	Xcel Energy Inc.	25,725	37,741	6,562,368
2014Y	Northern States Power Company - WI	Xcel Energy Inc.	24,836	47,930	6,750,889
2015Y	Northern States Power Company - WI	Xcel Energy Inc.	24,951	46,180	6,647,300
2016Y	Northern States Power Company - WI	Xcel Energy Inc.	25,096	45,148	6,641,542
2017Y	Northern States Power Company - WI	Xcel Energy Inc.	26,246	45,576	6,727,740
2013Y	Public Service Company of Colorado	Xcel Energy Inc.	103,101	217,189	33,450,187
2014Y	Public Service Company of Colorado	Xcel Energy Inc.	94,666	239,321	32,498,488
2015Y	Public Service Company of Colorado	Xcel Energy Inc.	92,990	231,178	32,396,474
2016Y	Public Service Company of Colorado	Xcel Energy Inc.	96,620	248,655	34,472,722
2017Y	Public Service Company of Colorado	Xcel Energy Inc.	97,636	235,993	36,486,396
2013Y	Southwestern Public Service Company	Xcel Energy Inc.	35,179	58,439	28,292,788
2014Y	Southwestern Public Service Company	Xcel Energy Inc.	36,160	74,526	28,265,391
2015Y	Southwestern Public Service Company	Xcel Energy Inc.	38,256	107,628	28,414,831
2016Y	Southwestern Public Service Company	Xcel Energy Inc.	30,994	81,287	28,383,129
2017Y	Southwestern Public Service Company	Xcel Energy Inc.	36,120	96,062	27,124,064
		Total	58,382,315	113,363,603	14,641,347,928

Customer Service Rankings [2013-2017]

Source: SNL

Holding Company	CA O&M	CS&I O&M	Sales O&M	CS O&M	Total Sales of Elect. Volume (MWh)	CS O&M/MWh	Ranking
CenterPoint Energy, Inc.	162,439,000	197,953,000	0	360,392,000	421,479,989	0.86	1
NiSource Inc.	93,272,000	2,734,000	5,524,000	101,530,000	85,969,484	1.18	2
Westar Energy, Inc.	150,871,000	18,014,000	2,000	168,887,000	142,855,162	1.18	3
ALLETE, Inc.	33,300,000	54,395,000	869,000	88,564,000	74,330,795	1.19	4
MDU Resources Group, Inc.	21,613,000	1,270,000	677,000	23,560,000	16,493,138	1.43	5
Dominion Energy, Inc.	439,980,000	175,490,000	88,000	615,558,000	424,814,207	1.45	6
Black Hills Corporation	39,069,000	10,800,000	185,000	50,054,000	32,232,125	1.55	7
Duke Energy Corporation	1,267,387,000	734,174,000	111,519,000	2,113,080,000	1,280,342,802	1.65	8
Entergy Corporation	681,360,000	472,990,000	29,855,000	1,184,205,000	694,118,461	1.71	9
PNM Resources, Inc.	75,588,000	4,093,000	23,389,000	103,070,000	60,114,213	1.71	10
El Paso Electric Company	94,772,000	1,040,000	0	95,812,000	54,312,529	1.76	11
NextEra Energy, Inc.	564,942,000	500,604,000	24,482,000	1,090,028,000	576,861,659	1.89	12
NorthWestern Corporation	59,911,000	32,141,000	2,767,000	94,819,000	48,516,397	1.95	13
Sempra Energy	329,721,000	1,143,888,000	118,000	1,473,727,000	732,367,419	2.01	14
Cleco Partners LP	62,686,000	37,608,000	24,297,000	124,591,000	58,299,323	2.14	15
LKE	222,919,810	178,486,000	4,703,000	406,108,810	177,006,629	2.29	16
Caisse de dépôt et	39,645,000	14,653,000	253,000	54,551,000	23,640,213	2.31	17
OGE Energy Corp.	108,700,000	208,136,000	28,493,000	345,329,000	145,554,088	2.37	18
Algonquin Power & Utilities Corp.	59,128,000	16,283,000	1,550,000	76,961,000	29,685,318	2.59	19
SCANA Corporation	237,883,000	59,843,000	7,910,000	305,636,000	115,124,628	2.65	20
AEP	1,593,674,000	894,932,000	16,588,000	2,505,194,000	926,060,218	2.71	21
Southern Company	1,411,466,000	828,270,000	345,608,000	2,585,344,000	915,739,927	2.82	22
WEC Energy Group, Inc.	344,698,000	379,294,000	2,858,000	726,850,000	247,141,624	2.94	23
Vectren Corporation	30,806,000	2,703,000	53,341,000	86,850,000	28,861,057	3.01	24
Alliant Energy Corporation	170,260,000	306,565,000	0	476,825,000	158,149,961	3.02	25
Great Plains Energy Incorporated	160,502,000	302,006,000	3,646,000	466,154,000	149,872,607	3.11	26

Customer Service Rankings [2013-2017]

Source: SNL

Holding Company	CA O&M	CS&I O&M	Sales O&M	CS O&M	Total Sales of Elect. Volume		Ranking
					(MWh)	CS O&M/MWh	
Ameren Corporation	488,090,000	749,302,000	2,126,000	1,239,518,000	396,912,264	3.12	27
Portland General Electric Company	270,282,000	72,413,000	0	342,695,000	105,742,391	3.24	28
AES Corporation	358,451,000	159,247,000	0	517,698,000	157,380,054	3.29	29
FirstEnergy Corp.	1,085,378,000	1,566,723,000	11,122,000	2,663,223,000	795,797,359	3.35	30
Xcel Energy Inc.	592,390,000	1,215,984,000	4,203,000	1,812,577,000	541,441,613	3.35	31
Avista Corporation	83,892,000	129,760,000	7,000	213,659,000	63,822,212	3.35	32
Berkshire Hathaway Inc.	817,844,000	1,390,145,000	23,904,000	2,231,893,000	647,595,062	3.45	33
UGI Corporation	15,319,000	1,696,000	146,000	17,161,000	4,900,628	3.50	34
Emera Incorporated	192,682,000	218,461,000	4,034,000	415,177,000	106,439,317	3.90	35
Pinnacle West Capital Corporation	270,894,000	306,326,000	56,863,000	634,083,000	161,506,003	3.93	36
IDACORP, Inc.	111,820,000	208,459,000	80,000	320,359,000	80,222,328	3.99	37
Mt. Carmel Public Utility Company	1,997,000	37,000	26,000	2,060,000	490,041	4.20	38
MGE Energy, Inc.	33,486,000	41,101,000	1,139,000	75,726,000	17,944,098	4.22	39
Otter Tail Corporation	64,959,000	45,164,000	2,113,000	112,236,000	26,396,332	4.25	40
DQE Holdings LLC	130,876,000	168,045,000	0	298,921,000	67,127,889	4.45	41
PPL Corporation	391,953,000	473,262,000	10,344,000	875,559,000	188,245,085	4.65	42
Exelon Corporation	3,259,289,000	1,672,212,000	6,644,000	4,938,145,000	1,034,415,389	4.77	43
CMS Energy Corporation	375,388,000	522,325,000	1,093,000	898,806,000	180,393,075	4.98	44
DTE Energy Company	800,272,000	427,083,000	9,419,000	1,236,774,000	230,365,093	5.37	45
Fortis Inc.	206,686,000	320,902,000	685,000	528,273,000	90,696,008	5.82	46
Puget Holdings LLC	257,578,000	577,763,000	2,356,000	837,697,000	132,788,263	6.31	47
Balfour Beatty Infrastructure	18,276,000	13,179,000	0	31,455,000	4,147,629	7.58	48
Edison International	864,759,000	2,819,813,000	49,144,000	3,733,716,000	476,972,294	7.83	49
Unitil Corporation	33,817,000	34,545,000	3,826,000	72,188,000	8,513,641	8.48	50
PG&E Corporation	1,116,120,000	2,986,920,000	30,751,000	4,133,791,000	437,736,683	9.44	51
Public Service Enterprise Group Inc	1,354,998,000	884,543,000	6,595,000	2,246,136,000	213,547,903	10.52	52

Customer Service Rankings [2013-2017]

Source: SNL

Holding Company	CA O&M	CS&I O&M	Sales O&M	CS O&M	Total Sales of Elect. Volume (MWh)	CS O&M/MWh	Ranking
Eversource Energy	1,040,861,000	2,187,690,000	7,268,000	3,235,819,000	289,678,343	11.17	53
Iberdrola, S.A.	819,054,000	889,669,000	66,892,000	1,775,615,000	157,875,239	11.25	54
Consolidated Edison, Inc.	1,204,293,000	2,029,448,000	9,736,000	3,243,477,000	264,071,298	12.28	55
National Grid plc	882,152,000	2,400,556,000	21,747,000	3,304,455,000	160,448,295	20.60	56
Grand Total	25,600,448,810	31,091,138,000	1,020,985,000	57,712,571,810	14,663,555,802		

CA = Customer Account Expense

CS&I = Customer Service and Informational Expense

Q1	2.11
Q2	3.27
Q3	4.68
Industry Avg.	3.94

Notes: NA data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Dayton Power and Light Company	AES Corporation	72,695	19,421	0	19,416,290
2014Y	Dayton Power and Light Company	AES Corporation	64,226	22,864	0	18,643,195
2015Y	Dayton Power and Light Company	AES Corporation	44,135	28,756	0	16,433,036
2016Y	Dayton Power and Light Company	AES Corporation	50,237	42,788	0	16,158,129
2017Y	Dayton Power and Light Company	AES Corporation	21,638	36,072	0	12,236,126
2013Y	Indianapolis Power & Light Company	AES Corporation	20,099	2,227	0	16,033,922
2014Y	Indianapolis Power & Light Company	AES Corporation	21,399	1,963	0	16,391,321
2015Y	Indianapolis Power & Light Company	AES Corporation	21,360	1,590	0	14,397,561
2016Y	Indianapolis Power & Light Company	AES Corporation	20,773	1,661	0	14,185,985
2017Y	Indianapolis Power & Light Company	AES Corporation	21,889	1,905	0	13,484,489
2013Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	10,067	2,209	349	5,620,276
2014Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	9,770	2,910	180	5,131,750
2015Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	8,624	2,986	195	4,940,028
2016Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	8,062	3,371	154	4,950,707
2017Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	8,354	4,036	158	4,841,355
2013Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	2,599	176	57	552,273
2014Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	3,435	170	172	910,825
2015Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	3,660	206	49	933,262
2016Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	2,368	169	83	910,242
2017Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	2,189	50	153	894,600
2013Y	ALLETE (Minnesota Power)	ALLETE, Inc.	5,824	13,459	217	13,264,062
2014Y	ALLETE (Minnesota Power)	ALLETE, Inc.	5,600	11,771	143	13,942,499
2015Y	ALLETE (Minnesota Power)	ALLETE, Inc.	5,473	8,402	127	14,369,559
2016Y	ALLETE (Minnesota Power)	ALLETE, Inc.	5,802	4,018	163	14,147,335
2017Y	ALLETE (Minnesota Power)	ALLETE, Inc.	6,572	11,667	219	14,692,658
2013Y	Superior Water, Light and Power Company	ALLETE, Inc.	698	1,049	0	687,209
2014Y	Superior Water, Light and Power Company	ALLETE, Inc.	845	1,052	0	770,427
2015Y	Superior Water, Light and Power Company	ALLETE, Inc.	815	1,042	0	788,342
2016Y	Superior Water, Light and Power Company	ALLETE, Inc.	829	1,016	0	820,880
2017Y	Superior Water, Light and Power Company	ALLETE, Inc.	842	919	0	847,824
2013Y	Interstate Power and Light Company	Alliant Energy Corporation	21,688	39,823	0	17,194,056
2014Y	Interstate Power and Light Company	Alliant Energy Corporation	22,665	42,555	0	16,871,181
2015Y	Interstate Power and Light Company	Alliant Energy Corporation	19,872	46,725	0	16,703,172
2016Y	Interstate Power and Light Company	Alliant Energy Corporation	25,303	47,294	0	16,662,731

Notes: NA data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Sales of Electricity Volume (MWh)
2017Y	Interstate Power and Light Company	Alliant Energy Corporation	25,805	41,492	0	17,406,995
2013Y	Wisconsin Power and Light Company	Alliant Energy Corporation	9,135	21,643	0	14,862,652
2014Y	Wisconsin Power and Light Company	Alliant Energy Corporation	10,442	43,600	0	14,603,712
2015Y	Wisconsin Power and Light Company	Alliant Energy Corporation	10,818	9,005	0	15,199,013
2016Y	Wisconsin Power and Light Company	Alliant Energy Corporation	10,275	-6,451	0	14,480,783
2017Y	Wisconsin Power and Light Company	Alliant Energy Corporation	14,257	20,879	0	14,165,666
2013Y	Ameren Illinois Company	Ameren Corporation	50,285	61,910	2	38,012,834
2014Y	Ameren Illinois Company	Ameren Corporation	49,945	87,566	2	37,915,282
2015Y	Ameren Illinois Company	Ameren Corporation	54,084	84,795	2	36,850,871
2016Y	Ameren Illinois Company	Ameren Corporation	55,984	89,742	0	36,754,294
2017Y	Ameren Illinois Company	Ameren Corporation	52,232	42,798	0	35,537,431
2013Y	Union Electric Company	Ameren Corporation	38,686	57,800	447	43,158,138
2014Y	Union Electric Company	Ameren Corporation	39,791	66,225	463	43,192,724
2015Y	Union Electric Company	Ameren Corporation	50,894	97,842	458	43,255,846
2016Y	Union Electric Company	Ameren Corporation	49,258	72,182	364	39,997,209
2017Y	Union Electric Company	Ameren Corporation	46,931	88,442	388	42,237,635
2013Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA	NA
2014Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA	47,215,732
2015Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA	NA
2016Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA	NA
2017Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA	NA	NA
2013Y	AEP Texas Central Company	American Electric Power Company, Inc.	11,717	15,471	139	NA
2014Y	AEP Texas Central Company	American Electric Power Company, Inc.	9,440	15,026	261	NA
2015Y	AEP Texas Central Company	American Electric Power Company, Inc.	10,081	16,602	225	NA
2016Y	AEP Texas Central Company	American Electric Power Company, Inc.	7,701	15,645	189	NA
2017Y	AEP Texas Central Company	American Electric Power Company, Inc.	NA	NA	NA	NA
2013Y	AEP Texas North Company	American Electric Power Company, Inc.	2,881	3,542	31	2,435,181
2014Y	AEP Texas North Company	American Electric Power Company, Inc.	2,358	3,077	59	1,741,758
2015Y	AEP Texas North Company	American Electric Power Company, Inc.	2,519	3,295	51	1,368,742
2016Y	AEP Texas North Company	American Electric Power Company, Inc.	1,908	2,846	43	1,381,295
2017Y	AEP Texas North Company	American Electric Power Company, Inc.	NA	NA	NA	NA
2013Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA	NA	NA
2014Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA	NA	NA
2015Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA	NA	NA

Notes: NA data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Sales of Electricity Volume (MWh)
2016Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA	NA	NA
2017Y	AEP Texas, Inc.	American Electric Power Company, Inc.	11,154	17,611	298	923,791
2013Y	Appalachian Power Company	American Electric Power Company, Inc.	35,569	6,965	155	47,596,529
2014Y	Appalachian Power Company	American Electric Power Company, Inc.	40,890	8,717	297	35,769,358
2015Y	Appalachian Power Company	American Electric Power Company, Inc.	37,672	11,144	264	34,847,578
2016Y	Appalachian Power Company	American Electric Power Company, Inc.	37,801	16,466	213	34,862,820
2017Y	Appalachian Power Company	American Electric Power Company, Inc.	39,807	17,920	275	33,601,395
2013Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	15,722	31,205	99	38,036,953
2014Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	16,054	14,317	212	35,331,017
2015Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	15,383	19,819	314	30,404,900
2016Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	15,399	21,929	66	28,379,413
2017Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	15,024	25,384	211	29,819,953
2013Y	Kentucky Power Company	American Electric Power Company, Inc.	5,734	3,691	31	9,933,527
2014Y	Kentucky Power Company	American Electric Power Company, Inc.	6,201	4,938	54	11,993,933
2015Y	Kentucky Power Company	American Electric Power Company, Inc.	6,131	3,909	47	8,700,986
2016Y	Kentucky Power Company	American Electric Power Company, Inc.	5,707	6,544	94	7,276,047
2017Y	Kentucky Power Company	American Electric Power Company, Inc.	5,920	14,530	53	7,106,360
2013Y	Kingsport Power Company	American Electric Power Company, Inc.	1,497	53	7	2,045,738
2014Y	Kingsport Power Company	American Electric Power Company, Inc.	1,492	57	15	2,120,716
2015Y	Kingsport Power Company	American Electric Power Company, Inc.	1,446	112	12	2,086,994
2016Y	Kingsport Power Company	American Electric Power Company, Inc.	1,488	109	10	2,038,552
2017Y	Kingsport Power Company	American Electric Power Company, Inc.	1,564	372	14	1,971,080
2013Y	Ohio Power Company	American Electric Power Company, Inc.	235,451	91,566	1,913	60,639,578
2014Y	Ohio Power Company	American Electric Power Company, Inc.	239,732	80,889	2,236	15,591,760
2015Y	Ohio Power Company	American Electric Power Company, Inc.	229,629	63,565	2,138	45,685,751
2016Y	Ohio Power Company	American Electric Power Company, Inc.	249,681	63,769	2,532	45,870,876
2017Y	Ohio Power Company	American Electric Power Company, Inc.	71,152	52,814	2,531	45,688,514
2013Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	18,603	21,640	115	19,239,394
2014Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	19,586	30,573	204	19,517,893
2015Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	19,118	30,579	159	18,916,965
2016Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	15,640	32,808	139	19,425,199
2017Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	14,920	35,115	171	19,052,676
2013Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	21,582	15,772	85	28,553,233
2014Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	22,604	15,240	163	28,644,882

Notes: NA data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Sales of Electricity Volume (MWh)
2015Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	21,413	19,057	140	27,269,400
2016Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	20,475	17,268	118	26,169,526
2017Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	19,948	15,362	153	26,257,034
2013Y	Wheeling Power Company	American Electric Power Company, Inc.	1,301	861	7	2,703,781
2014Y	Wheeling Power Company	American Electric Power Company, Inc.	1,849	1,514	13	3,269,892
2015Y	Wheeling Power Company	American Electric Power Company, Inc.	1,678	1,816	11	4,451,364
2016Y	Wheeling Power Company	American Electric Power Company, Inc.	1,412	1,759	9	5,106,836
2017Y	Wheeling Power Company	American Electric Power Company, Inc.	1,640	1,669	12	5,015,316
2013Y	Alaska Electric Light and Power Company	Avista Corporation	1,160	5	0	377,005
2014Y	Alaska Electric Light and Power Company	Avista Corporation	1,168	2	0	422,784
2015Y	Alaska Electric Light and Power Company	Avista Corporation	1,114	4	0	398,066
2016Y	Alaska Electric Light and Power Company	Avista Corporation	1,109	4	0	395,154
2017Y	Alaska Electric Light and Power Company	Avista Corporation	1,182	19	0	414,210
2013Y	Avista Corporation	Avista Corporation	15,187	21,884	7	13,318,994
2014Y	Avista Corporation	Avista Corporation	14,540	26,943	0	12,839,533
2015Y	Avista Corporation	Avista Corporation	15,539	25,612	0	11,942,035
2016Y	Avista Corporation	Avista Corporation	16,702	24,905	0	11,733,626
2017Y	Avista Corporation	Avista Corporation	16,191	30,382	0	11,980,805
2013Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	3,284	2,493	0	881,022
2014Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	3,422	2,556	0	845,665
2015Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	3,507	2,661	0	844,127
2016Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	3,296	2,718	0	831,622
2017Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	4,767	2,751	0	745,193
2013Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	26,766	56,919	4,769	32,680,735
2014Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	28,091	78,013	4,617	32,499,927
2015Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	27,460	80,221	3,602	31,832,657
2016Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	27,496	85,276	3,658	32,475,023
2017Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	27,940	107,483	3,769	33,727,302
2013Y	Nevada Power Company	Berkshire Hathaway Inc.	42,720	68,921	218	24,064,426
2014Y	Nevada Power Company	Berkshire Hathaway Inc.	40,032	53,978	135	22,745,488
2015Y	Nevada Power Company	Berkshire Hathaway Inc.	39,787	62,223	147	25,481,621
2016Y	Nevada Power Company	Berkshire Hathaway Inc.	40,887	62,873	193	25,062,084
2017Y	Nevada Power Company	Berkshire Hathaway Inc.	41,320	42,560	215	23,751,206
2013Y	PacifiCorp	Berkshire Hathaway Inc.	87,534	116,605	0	65,869,008

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2014Y	PacifiCorp	Berkshire Hathaway Inc.	85,292	136,012	0	65,269,524
2015Y	PacifiCorp	Berkshire Hathaway Inc.	81,366	135,712	0	63,530,663
2016Y	PacifiCorp	Berkshire Hathaway Inc.	83,187	147,415	0	60,958,902
2017Y	PacifiCorp	Berkshire Hathaway Inc.	86,106	91,522	0	62,468,319
2013Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	13,429	18,622	562	9,185,572
2014Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	10,592	6,712	547	8,882,408
2015Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	9,477	11,264	466	8,911,051
2016Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	9,315	14,571	523	9,000,293
2017Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	9,047	13,243	483	9,198,853
2013Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	3,296	431	29	2,028,643
2014Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	4,056	121	29	1,957,695
2015Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	3,975	60	15	1,959,505
2016Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	3,668	65	7	1,985,177
2017Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	3,868	51	8	1,932,972
2013Y	Black Hills Power, Inc.	Black Hills Corporation	2,850	1,338	39	3,084,298
2014Y	Black Hills Power, Inc.	Black Hills Corporation	3,251	1,536	25	2,905,098
2015Y	Black Hills Power, Inc.	Black Hills Corporation	3,239	1,717	4	2,873,371
2016Y	Black Hills Power, Inc.	Black Hills Corporation	3,037	1,498	2	2,611,946
2017Y	Black Hills Power, Inc.	Black Hills Corporation	3,005	1,010	3	2,992,386
2013Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	1,098	773	8	1,635,140
2014Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	1,082	812	6	1,639,680
2015Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	961	644	3	1,418,697
2016Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	885	457	5	1,559,870
2017Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	798	287	2	1,647,647
2013Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	8,549	3,771	3	4,853,495
2014Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	8,949	3,375	23	4,713,347
2015Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	9,145	2,572	28	4,751,076
2016Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	7,523	2,452	122	4,688,744
2017Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	5,479	2,483	77	4,633,551
2013Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	30,163	40,320	0	79,984,965
2014Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	30,132	40,888	0	81,839,060
2015Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	35,480	42,889	0	84,190,647
2016Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	34,309	38,303	0	86,828,900
2017Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	32,355	35,553	0	88,636,417

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2013Y	Cleco Power LLC	Cleco Partners LP	11,227	5,919	4,529	11,115,732
2014Y	Cleco Power LLC	Cleco Partners LP	10,857	5,911	4,834	12,201,940
2015Y	Cleco Power LLC	Cleco Partners LP	12,231	9,111	5,911	12,105,640
2016Y	Cleco Power LLC	Cleco Partners LP	15,195	8,265	4,870	11,596,427
2017Y	Cleco Power LLC	Cleco Partners LP	13,176	8,402	4,153	11,279,584
2013Y	Consumers Energy Company	CMS Energy Corporation	82,676	82,970	72	35,276,791
2014Y	Consumers Energy Company	CMS Energy Corporation	84,296	105,188	279	35,893,242
2015Y	Consumers Energy Company	CMS Energy Corporation	78,263	103,218	199	36,357,438
2016Y	Consumers Energy Company	CMS Energy Corporation	69,143	107,131	165	36,746,531
2017Y	Consumers Energy Company	CMS Energy Corporation	61,010	123,818	378	36,119,073
2013Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	227,454	288,861	9,641	47,335,320
2014Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	235,949	341,180	0	46,406,542
2015Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	216,744	380,851	0	47,202,850
2016Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	200,873	387,254	0	47,450,242
2017Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	211,764	416,725	0	46,342,045
2013Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	14,564	27,905	9	4,263,699
2014Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	18,444	32,499	13	4,256,408
2015Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	17,271	35,243	26	4,415,840
2016Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	18,010	32,295	19	4,315,576
2017Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	18,248	34,674	15	4,056,841
2013Y	Rockland Electric Company	Consolidated Edison, Inc.	4,967	10,556	2	1,642,857
2014Y	Rockland Electric Company	Consolidated Edison, Inc.	4,421	11,831	2	1,610,904
2015Y	Rockland Electric Company	Consolidated Edison, Inc.	4,839	8,954	6	1,631,351
2016Y	Rockland Electric Company	Consolidated Edison, Inc.	5,290	10,002	2	1,601,861
2017Y	Rockland Electric Company	Consolidated Edison, Inc.	5,455	10,618	1	1,538,962
2013Y	Virginia Electric and Power Company	Dominion Energy, Inc.	84,749	24,653	0	82,852,117
2014Y	Virginia Electric and Power Company	Dominion Energy, Inc.	103,838	32,437	0	83,938,195
2015Y	Virginia Electric and Power Company	Dominion Energy, Inc.	89,770	37,651	0	85,178,907
2016Y	Virginia Electric and Power Company	Dominion Energy, Inc.	80,534	43,352	0	87,875,099
2017Y	Virginia Electric and Power Company	Dominion Energy, Inc.	81,089	37,397	88	84,969,889
2013Y	Duquesne Light Company	DQE Holdings LLC	20,307	29,038	0	14,007,273
2014Y	Duquesne Light Company	DQE Holdings LLC	24,116	25,729	0	13,747,339
2015Y	Duquesne Light Company	DQE Holdings LLC	31,620	41,642	0	13,503,863
2016Y	Duquesne Light Company	DQE Holdings LLC	28,334	34,761	0	13,172,591

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2017Y	Duquesne Light Company	DQE Holdings LLC	26,499	36,875	0	12,696,823
2013Y	DTE Electric Company	DTE Energy Company	157,975	69,017	1,801	47,062,371
2014Y	DTE Electric Company	DTE Energy Company	157,639	87,951	1,038	46,076,577
2015Y	DTE Electric Company	DTE Energy Company	162,184	88,340	382	46,281,765
2016Y	DTE Electric Company	DTE Energy Company	152,087	91,192	1,456	45,998,164
2017Y	DTE Electric Company	DTE Energy Company	170,387	90,583	4,742	44,946,216
2013Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	79,219	28,943	1,427	85,789,697
2014Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	78,523	21,845	7,325	87,645,520
2015Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	81,499	19,266	9,243	87,375,571
2016Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	83,506	20,610	10,355	88,544,715
2017Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	84,236	20,720	11,583	87,306,564
2013Y	Duke Energy Florida, LLC	Duke Energy Corporation	46,992	94,825	1,937	38,164,155
2014Y	Duke Energy Florida, LLC	Duke Energy Corporation	57,525	115,469	2,331	38,728,049
2015Y	Duke Energy Florida, LLC	Duke Energy Corporation	57,771	83,883	3,657	39,989,379
2016Y	Duke Energy Florida, LLC	Duke Energy Corporation	59,606	101,995	4,499	40,660,935
2017Y	Duke Energy Florida, LLC	Duke Energy Corporation	57,717	97,908	7,284	40,290,293
2013Y	Duke Energy Indiana, LLC	Duke Energy Corporation	39,353	11,036	270	33,714,982
2014Y	Duke Energy Indiana, LLC	Duke Energy Corporation	40,233	6,905	2,209	33,433,620
2015Y	Duke Energy Indiana, LLC	Duke Energy Corporation	41,014	5,651	2,884	33,517,569
2016Y	Duke Energy Indiana, LLC	Duke Energy Corporation	27,491	5,087	3,560	34,368,826
2017Y	Duke Energy Indiana, LLC	Duke Energy Corporation	29,240	4,662	4,236	33,145,670
2013Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	6,495	1,506	51	4,546,692
2014Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	6,645	975	553	4,447,988
2015Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	6,599	563	909	5,277,786
2016Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	6,218	673	905	4,672,987
2017Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	5,442	593	889	4,908,072
2013Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	30,150	7,122	318	39,309,749
2014Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	26,830	4,769	1,700	27,741,596
2015Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	29,239	3,640	2,953	20,805,363
2016Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	23,016	3,710	3,042	21,320,518
2017Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	21,576	3,481	3,289	20,805,946
2013Y	Duke Energy Progress, LLC	Duke Energy Corporation	44,157	51,420	1,800	60,204,063
2014Y	Duke Energy Progress, LLC	Duke Energy Corporation	49,288	4,646	4,171	62,871,047
2015Y	Duke Energy Progress, LLC	Duke Energy Corporation	52,930	3,708	5,624	64,880,560

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2016Y	Duke Energy Progress, LLC	Duke Energy Corporation	47,900	4,480	6,307	69,052,154
2017Y	Duke Energy Progress, LLC	Duke Energy Corporation	46,977	4,083	6,208	66,822,736
2013Y	Southern California Edison Company	Edison International	191,060	598,329	14,170	90,552,978
2014Y	Southern California Edison Company	Edison International	177,028	629,097	11,300	116,437,195
2015Y	Southern California Edison Company	Edison International	179,164	569,076	6,873	90,495,397
2016Y	Southern California Edison Company	Edison International	165,721	506,648	8,294	88,194,998
2017Y	Southern California Edison Company	Edison International	151,786	516,663	8,507	91,291,726
2013Y	El Paso Electric Company	El Paso Electric Company	17,602	200	0	10,884,241
2014Y	El Paso Electric Company	El Paso Electric Company	19,737	208	0	11,009,422
2015Y	El Paso Electric Company	El Paso Electric Company	19,148	222	0	10,915,601
2016Y	El Paso Electric Company	El Paso Electric Company	18,853	205	0	10,598,511
2017Y	El Paso Electric Company	El Paso Electric Company	19,432	205	0	10,904,754
2013Y	Emera Maine	Emera Incorporated	5,984	177	0	1,869,923
2014Y	Emera Maine	Emera Incorporated	8,220	279	0	2,344,241
2015Y	Emera Maine	Emera Incorporated	7,916	223	0	2,325,046
2016Y	Emera Maine	Emera Incorporated	8,929	186	0	2,217,874
2017Y	Emera Maine	Emera Incorporated	9,787	83	0	2,270,073
2013Y	Tampa Electric Company	Emera Incorporated	23,344	47,774	1,431	18,639,927
2014Y	Tampa Electric Company	Emera Incorporated	29,204	46,848	560	18,784,911
2015Y	Tampa Electric Company	Emera Incorporated	26,215	46,989	803	19,121,762
2016Y	Tampa Electric Company	Emera Incorporated	34,013	37,694	689	19,440,142
2017Y	Tampa Electric Company	Emera Incorporated	39,070	38,208	551	19,425,418
2013Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA	NA
2014Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA	NA
2015Y	EL Investment Company, LLC	Entergy Corporation	24,090	6,034	1,295	31,482,380
2016Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA	NA
2017Y	EL Investment Company, LLC	Entergy Corporation	NA	NA	NA	NA
2013Y	Entergy Arkansas, Inc.	Entergy Corporation	38,461	41,853	595	29,788,956
2014Y	Entergy Arkansas, Inc.	Entergy Corporation	36,880	68,221	774	31,350,781
2015Y	Entergy Arkansas, Inc.	Entergy Corporation	35,843	74,662	737	31,379,457
2016Y	Entergy Arkansas, Inc.	Entergy Corporation	34,220	66,675	611	29,363,790
2017Y	Entergy Arkansas, Inc.	Entergy Corporation	36,215	53,392	357	29,219,532
2013Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	17,739	2,468	2,409	27,130,595
2014Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	18,917	3,075	1,851	28,713,874

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2015Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	12,662	3,683	1,218	21,426,698
2016Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	NA	NA	NA	NA
2017Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	NA	NA	NA	NA
2013Y	Entergy Louisiana, LLC	Entergy Corporation	31,816	3,353	2,147	34,156,904
2014Y	Entergy Louisiana, LLC	Entergy Corporation	34,157	4,986	2,047	37,479,888
2015Y	Entergy Louisiana, LLC	Entergy Corporation	11,956	2,770	1,302	14,743,976
2016Y	Entergy Louisiana, LLC	Entergy Corporation	46,151	12,876	3,396	63,634,403
2017Y	Entergy Louisiana, LLC	Entergy Corporation	51,910	14,704	3,406	61,747,129
2013Y	Entergy Mississippi, Inc.	Entergy Corporation	24,263	4,036	422	14,965,739
2014Y	Entergy Mississippi, Inc.	Entergy Corporation	24,275	4,873	1,339	16,054,977
2015Y	Entergy Mississippi, Inc.	Entergy Corporation	23,580	8,835	944	14,969,217
2016Y	Entergy Mississippi, Inc.	Entergy Corporation	21,021	6,801	587	14,462,253
2017Y	Entergy Mississippi, Inc.	Entergy Corporation	21,572	11,730	862	13,904,918
2013Y	Entergy New Orleans, LLC	Entergy Corporation	9,508	1,938	530	5,615,573
2014Y	Entergy New Orleans, LLC	Entergy Corporation	8,432	1,229	489	6,570,789
2015Y	Entergy New Orleans, LLC	Entergy Corporation	8,252	5,303	519	7,138,626
2016Y	Entergy New Orleans, LLC	Entergy Corporation	11,180	6,855	293	6,947,771
2017Y	Entergy New Orleans, LLC	Entergy Corporation	9,829	8,384	206	7,327,377
2013Y	Entergy Texas, Inc.	Entergy Corporation	17,710	12,601	337	23,811,698
2014Y	Entergy Texas, Inc.	Entergy Corporation	18,046	8,046	418	22,661,605
2015Y	Entergy Texas, Inc.	Entergy Corporation	17,159	13,672	364	23,855,503
2016Y	Entergy Texas, Inc.	Entergy Corporation	16,632	9,509	227	23,892,632
2017Y	Entergy Texas, Inc.	Entergy Corporation	18,884	10,426	173	20,321,420
2013Y	Connecticut Light and Power Company	Eversource Energy	96,010	109,185	115	23,299,945
2014Y	Connecticut Light and Power Company	Eversource Energy	111,840	176,925	154	22,647,162
2015Y	Connecticut Light and Power Company	Eversource Energy	99,752	174,601	62	22,643,456
2016Y	Connecticut Light and Power Company	Eversource Energy	105,644	171,144	-29	22,342,433
2017Y	Connecticut Light and Power Company	Eversource Energy	92,420	141,430	0	21,611,697
2013Y	NSTAR Electric Company	Eversource Energy	59,449	200,433	3,102	23,996,935
2014Y	NSTAR Electric Company	Eversource Energy	51,405	184,100	2,241	23,629,876
2015Y	NSTAR Electric Company	Eversource Energy	29,900	199,400	1,216	23,856,657
2016Y	NSTAR Electric Company	Eversource Energy	77,547	268,159	190	23,127,763
2017Y	NSTAR Electric Company	Eversource Energy	76,121	263,228	56	21,529,739
2013Y	Public Service Company of New Hampshire	Eversource Energy	29,001	18,751	42	9,118,546

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Year	Company Name	Ultimate Parent Company Name	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Sales of Electricity Volume (MWh)
2014Y	Public Service Company of New Hampshire	Eversource Energy	32,405	17,562	61	8,595,895
2015Y	Public Service Company of New Hampshire	Eversource Energy	34,226	16,026	24	8,441,532
2016Y	Public Service Company of New Hampshire	Eversource Energy	29,651	16,146	-10	8,388,691
2017Y	Public Service Company of New Hampshire	Eversource Energy	28,814	16,301	0	8,116,389
2013Y	Western Massachusetts Electric Company	Eversource Energy	16,437	39,424	17	3,724,299
2014Y	Western Massachusetts Electric Company	Eversource Energy	13,151	42,706	22	3,610,361
2015Y	Western Massachusetts Electric Company	Eversource Energy	18,279	41,901	10	3,601,321
2016Y	Western Massachusetts Electric Company	Eversource Energy	18,677	46,876	-5	3,706,255
2017Y	Western Massachusetts Electric Company	Eversource Energy	20,132	43,392	0	3,689,391
2013Y	Atlantic City Electric Company	Exelon Corporation	55,157	36,230	0	11,562,281
2014Y	Atlantic City Electric Company	Exelon Corporation	60,224	34,973	0	11,658,993
2015Y	Atlantic City Electric Company	Exelon Corporation	80,958	35,384	4	11,225,247
2016Y	Atlantic City Electric Company	Exelon Corporation	89,038	37,025	0	10,723,259
2017Y	Atlantic City Electric Company	Exelon Corporation	64,348	36,619	0	9,822,917
2013Y	Baltimore Gas and Electric Company	Exelon Corporation	76,518	4,355	0	30,767,778
2014Y	Baltimore Gas and Electric Company	Exelon Corporation	86,771	5,142	0	30,562,078
2015Y	Baltimore Gas and Electric Company	Exelon Corporation	56,076	4,942	0	30,304,293
2016Y	Baltimore Gas and Electric Company	Exelon Corporation	38,239	4,316	0	30,019,586
2017Y	Baltimore Gas and Electric Company	Exelon Corporation	53,272	4,154	0	28,970,770
2013Y	Commonwealth Edison Company	Exelon Corporation	229,749	187,943	0	93,089,440
2014Y	Commonwealth Edison Company	Exelon Corporation	252,022	244,512	0	90,578,581
2015Y	Commonwealth Edison Company	Exelon Corporation	248,386	250,479	0	87,297,520
2016Y	Commonwealth Edison Company	Exelon Corporation	243,296	226,858	0	89,608,490
2017Y	Commonwealth Edison Company	Exelon Corporation	229,443	132,730	0	87,568,519
2013Y	Delmarva Power & Light Company	Exelon Corporation	53,329	3,159	428	12,817,180
2014Y	Delmarva Power & Light Company	Exelon Corporation	57,688	4,688	390	12,782,957
2015Y	Delmarva Power & Light Company	Exelon Corporation	74,278	5,202	590	12,805,844
2016Y	Delmarva Power & Light Company	Exelon Corporation	73,878	4,988	596	12,486,406
2017Y	Delmarva Power & Light Company	Exelon Corporation	54,619	7,941	606	12,222,536
2013Y	PECO Energy Company	Exelon Corporation	153,767	60,870	899	38,044,130
2014Y	PECO Energy Company	Exelon Corporation	135,516	77,724	1,006	37,681,485
2015Y	PECO Energy Company	Exelon Corporation	104,607	86,565	766	38,124,845
2016Y	PECO Energy Company	Exelon Corporation	102,080	79,400	616	37,940,620
2017Y	PECO Energy Company	Exelon Corporation	98,209	68,108	737	37,233,657

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Year	Company Name	Ultimate Parent Company Name	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Potomac Electric Power Company	Exelon Corporation	82,763	1,990	3	25,807,813
2014Y	Potomac Electric Power Company	Exelon Corporation	90,071	3,774	0	25,750,549
2015Y	Potomac Electric Power Company	Exelon Corporation	115,437	4,140	135	25,987,432
2016Y	Potomac Electric Power Company	Exelon Corporation	110,158	8,685	-132	26,114,290
2017Y	Potomac Electric Power Company	Exelon Corporation	89,392	9,316	0	24,855,893
2013Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	18,809	17,273	331	18,712,244
2014Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	18,862	16,051	422	18,733,302
2015Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	24,034	13,144	475	18,501,986
2016Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	24,518	7,415	577	18,817,928
2017Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	24,926	16,833	887	18,290,574
2013Y	Jersey Central Power & Light Company	FirstEnergy Corp.	36,629	132,126	0	21,836,806
2014Y	Jersey Central Power & Light Company	FirstEnergy Corp.	33,640	134,475	0	21,846,258
2015Y	Jersey Central Power & Light Company	FirstEnergy Corp.	37,931	142,013	25	21,332,986
2016Y	Jersey Central Power & Light Company	FirstEnergy Corp.	36,853	141,494	103	21,250,880
2017Y	Jersey Central Power & Light Company	FirstEnergy Corp.	35,110	129,628	301	20,535,764
2013Y	Metropolitan Edison Company	FirstEnergy Corp.	24,965	41,900	14	14,226,643
2014Y	Metropolitan Edison Company	FirstEnergy Corp.	25,745	35,919	29	14,276,774
2015Y	Metropolitan Edison Company	FirstEnergy Corp.	30,405	34,512	39	14,291,940
2016Y	Metropolitan Edison Company	FirstEnergy Corp.	27,391	33,168	74	14,143,059
2017Y	Metropolitan Edison Company	FirstEnergy Corp.	25,130	33,997	123	13,777,426
2013Y	Monongahela Power Company	FirstEnergy Corp.	15,100	3,520	0	10,816,852
2014Y	Monongahela Power Company	FirstEnergy Corp.	15,506	3,599	0	17,361,198
2015Y	Monongahela Power Company	FirstEnergy Corp.	21,219	3,889	13	16,163,874
2016Y	Monongahela Power Company	FirstEnergy Corp.	16,539	3,689	47	17,434,322
2017Y	Monongahela Power Company	FirstEnergy Corp.	18,017	5,040	97	17,497,075
2013Y	Ohio Edison Company	FirstEnergy Corp.	26,166	24,190	1,046	27,059,942
2014Y	Ohio Edison Company	FirstEnergy Corp.	27,397	21,686	1,025	27,819,394
2015Y	Ohio Edison Company	FirstEnergy Corp.	33,195	16,238	1,192	27,056,153
2016Y	Ohio Edison Company	FirstEnergy Corp.	34,184	9,420	1,304	26,451,421
2017Y	Ohio Edison Company	FirstEnergy Corp.	33,895	22,383	2,027	23,977,058
2013Y	Pennsylvania Electric Company	FirstEnergy Corp.	22,777	44,947	14	15,484,578
2014Y	Pennsylvania Electric Company	FirstEnergy Corp.	22,106	37,630	31	14,771,582
2015Y	Pennsylvania Electric Company	FirstEnergy Corp.	28,658	35,996	41	14,473,442
2016Y	Pennsylvania Electric Company	FirstEnergy Corp.	27,031	36,753	81	14,386,263

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Year	Company Name	Ultimate Parent Company Name	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Sales of Electricity Volume (MWh)
2017Y	Pennsylvania Electric Company	FirstEnergy Corp.	23,792	37,889	138	14,363,454
2013Y	Pennsylvania Power Company	FirstEnergy Corp.	4,882	12,042	4	4,567,609
2014Y	Pennsylvania Power Company	FirstEnergy Corp.	4,833	10,693	9	4,714,488
2015Y	Pennsylvania Power Company	FirstEnergy Corp.	6,639	9,557	11	4,526,159
2016Y	Pennsylvania Power Company	FirstEnergy Corp.	6,134	10,294	20	4,615,081
2017Y	Pennsylvania Power Company	FirstEnergy Corp.	5,589	10,829	35	4,633,922
2013Y	Potomac Edison Company	FirstEnergy Corp.	13,425	14,287	0	11,862,840
2014Y	Potomac Edison Company	FirstEnergy Corp.	12,364	23,321	0	11,898,341
2015Y	Potomac Edison Company	FirstEnergy Corp.	13,703	15,701	12	11,823,082
2016Y	Potomac Edison Company	FirstEnergy Corp.	13,916	19,682	37	11,554,451
2017Y	Potomac Edison Company	FirstEnergy Corp.	12,009	14,060	90	11,322,812
2013Y	Toledo Edison Company	FirstEnergy Corp.	10,589	8,034	4	11,956,365
2014Y	Toledo Edison Company	FirstEnergy Corp.	10,133	8,320	11	11,873,197
2015Y	Toledo Edison Company	FirstEnergy Corp.	13,327	8,317	23	11,779,382
2016Y	Toledo Edison Company	FirstEnergy Corp.	12,991	3,225	48	12,079,562
2017Y	Toledo Edison Company	FirstEnergy Corp.	12,753	7,782	132	10,856,745
2013Y	West Penn Power Company	FirstEnergy Corp.	27,287	21,121	0	20,052,177
2014Y	West Penn Power Company	FirstEnergy Corp.	33,517	15,590	0	20,291,236
2015Y	West Penn Power Company	FirstEnergy Corp.	27,631	29,180	11	20,083,013
2016Y	West Penn Power Company	FirstEnergy Corp.	26,887	41,209	81	19,998,876
2017Y	West Penn Power Company	FirstEnergy Corp.	26,239	46,662	138	19,616,843
2013Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	16,190	38,802	336	2,761,676
2014Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	19,691	43,955	270	2,623,309
2015Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	20,136	48,387	54	2,608,207
2016Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	17,538	42,612	11	2,684,357
2017Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	18,023	45,718	14	2,602,989
2013Y	Tucson Electric Power Company	Fortis Inc.	18,213	15,663	0	13,025,375
2014Y	Tucson Electric Power Company	Fortis Inc.	17,568	13,048	0	13,311,011
2015Y	Tucson Electric Power Company	Fortis Inc.	17,871	15,282	0	14,279,396
2016Y	Tucson Electric Power Company	Fortis Inc.	19,668	20,645	0	13,718,397
2017Y	Tucson Electric Power Company	Fortis Inc.	20,583	16,212	0	13,442,595
2013Y	UNS Electric, Inc.	Fortis Inc.	4,338	4,222	0	2,230,041
2014Y	UNS Electric, Inc.	Fortis Inc.	4,717	3,734	0	1,982,714
2015Y	UNS Electric, Inc.	Fortis Inc.	3,978	3,990	0	1,746,289

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2016Y	UNS Electric, Inc.	Fortis Inc.	4,069	4,625	0	1,762,853
2017Y	UNS Electric, Inc.	Fortis Inc.	4,103	4,007	0	1,916,799
2013Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	19,211	13,659	423	21,683,329
2014Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	19,055	17,553	403	22,472,307
2015Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	20,274	32,898	470	20,796,733
2016Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	19,997	49,104	487	21,433,876
2017Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	20,531	43,008	574	21,322,723
2013Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	12,307	14,906	224	8,413,828
2014Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	12,119	21,176	219	8,511,766
2015Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	12,314	36,440	263	8,385,574
2016Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	12,344	31,427	274	8,465,650
2017Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	12,350	41,835	309	8,386,821
2013Y	Central Maine Power Company	Iberdrola, S.A.	29,123	1,311	2,482	603,824
2014Y	Central Maine Power Company	Iberdrola, S.A.	30,924	1,235	2,849	590,204
2015Y	Central Maine Power Company	Iberdrola, S.A.	31,815	8,550	3,279	600,705
2016Y	Central Maine Power Company	Iberdrola, S.A.	33,020	22,962	1,943	599,743
2017Y	Central Maine Power Company	Iberdrola, S.A.	32,435	24,010	1,626	172,595
2013Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	60,942	76,423	5,734	19,115,201
2014Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	61,737	86,451	7,143	18,690,994
2015Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	71,348	95,109	7,165	17,887,199
2016Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	57,894	76,755	5,892	17,455,920
2017Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	61,159	86,040	7,986	16,633,428
2013Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	26,811	43,239	2,862	9,024,632
2014Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	27,917	46,387	2,760	7,970,527
2015Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	35,119	51,733	5,876	7,319,681
2016Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	26,317	41,765	4,262	7,365,999
2017Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	29,911	46,488	5,033	7,216,272
2013Y	United Illuminating Company	Iberdrola, S.A.	36,862	22,980	0	5,422,427
2014Y	United Illuminating Company	Iberdrola, S.A.	44,955	37,961	0	5,327,395
2015Y	United Illuminating Company	Iberdrola, S.A.	47,509	44,582	0	5,450,238
2016Y	United Illuminating Company	Iberdrola, S.A.	35,484	40,297	0	5,334,351
2017Y	United Illuminating Company	Iberdrola, S.A.	37,772	35,391	0	5,093,904
2013Y	Idaho Power Co.	IDACORP, Inc.	21,841	44,062	0	16,302,681
2014Y	Idaho Power Co.	IDACORP, Inc.	25,549	35,814	0	16,312,786

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2015Y	Idaho Power Co.	IDACORP, Inc.	21,157	39,575	80	15,518,629
2016Y	Idaho Power Co.	IDACORP, Inc.	20,845	42,924	0	15,381,629
2017Y	Idaho Power Co.	IDACORP, Inc.	22,428	46,084	0	16,706,603
2013Y	Kentucky Utilities Company	LKE	28,190	19,563	42	21,629,993
2014Y	Kentucky Utilities Company	LKE	34,679	18,365	94	21,986,858
2015Y	Kentucky Utilities Company	LKE	32,619	18,532	307	21,810,131
2016Y	Kentucky Utilities Company	LKE	32,262	22,509	817	21,437,963
2017Y	Kentucky Utilities Company	LKE	32,654	22,093	792	20,497,797
2013Y	Louisville Gas and Electric Company	LKE	11,099	15,059	42	14,478,316
2014Y	Louisville Gas and Electric Company	LKE	13,768	15,142	47	15,373,731
2015Y	Louisville Gas and Electric Company	LKE	12,601	14,306	610	13,502,213
2016Y	Louisville Gas and Electric Company	LKE	12,343	16,461	920	13,156,493
2017Y	Louisville Gas and Electric Company	LKE	12,706	16,456	1,032	13,133,134
2013Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	3,900	255	139	3,195,882
2014Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	4,111	261	166	3,331,202
2015Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	4,147	253	154	3,316,058
2016Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	4,897	256	107	3,303,555
2017Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	4,558	245	111	3,346,441
2013Y	Madison Gas and Electric Company	MGE Energy, Inc.	7,051	8,458	223	3,557,446
2014Y	Madison Gas and Electric Company	MGE Energy, Inc.	6,868	7,671	187	3,514,574
2015Y	Madison Gas and Electric Company	MGE Energy, Inc.	5,369	8,158	214	3,545,081
2016Y	Madison Gas and Electric Company	MGE Energy, Inc.	6,252	8,235	263	3,741,999
2017Y	Madison Gas and Electric Company	MGE Energy, Inc.	7,946	8,579	252	3,584,998
2013Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	260	10	10	99,446
2014Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	284	7	2	99,841
2015Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	370	7	6	99,902
2016Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	520	11	3	95,751
2017Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	563	2	5	95,101
2013Y	Massachusetts Electric Company	National Grid plc	61,952	199,119	2,873	11,080,137
2014Y	Massachusetts Electric Company	National Grid plc	75,178	236,180	1,922	10,608,963
2015Y	Massachusetts Electric Company	National Grid plc	100,307	275,385	1,473	8,699,117
2016Y	Massachusetts Electric Company	National Grid plc	87,111	256,142	2,222	6,486,573
2017Y	Massachusetts Electric Company	National Grid plc	77,302	263,936	2,196	6,427,679
2013Y	Narragansett Electric Company	National Grid plc	25,702	64,373	788	5,133,864

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Year	Company Name	Ultimate Parent Company Name	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Sales of Electricity Volume (MWh)
2014Y	Narragansett Electric Company	National Grid plc	31,778	87,876	670	5,006,934
2015Y	Narragansett Electric Company	National Grid plc	21,033	88,757	731	4,492,267
2016Y	Narragansett Electric Company	National Grid plc	20,198	72,972	473	3,954,763
2017Y	Narragansett Electric Company	National Grid plc	23,534	89,667	987	3,868,162
2013Y	National Grid Generation, LLC	National Grid plc	1,425	0	0	4,823,499
2014Y	National Grid Generation, LLC	National Grid plc	171	0	0	4,558,386
2015Y	National Grid Generation, LLC	National Grid plc	5,149	0	0	5,050,928
2016Y	National Grid Generation, LLC	National Grid plc	-3,347	0	0	4,561,590
2017Y	National Grid Generation, LLC	National Grid plc	84	0	0	3,213,471
2013Y	New England Power Company	National Grid plc	110	8	0	570,917
2014Y	New England Power Company	National Grid plc	384	1	0	565,418
2015Y	New England Power Company	National Grid plc	121	4	0	566,430
2016Y	New England Power Company	National Grid plc	380	2	0	314,990
2017Y	New England Power Company	National Grid plc	379	10	0	239,434
2013Y	Niagara Mohawk Power Corporation	National Grid plc	43,647	196,872	1,635	16,348,792
2014Y	Niagara Mohawk Power Corporation	National Grid plc	79,593	232,387	1,278	13,620,478
2015Y	Niagara Mohawk Power Corporation	National Grid plc	69,484	228,877	2,092	13,464,032
2016Y	Niagara Mohawk Power Corporation	National Grid plc	83,313	44,993	1,727	13,600,814
2017Y	Niagara Mohawk Power Corporation	National Grid plc	77,164	62,995	680	13,190,657
2013Y	Florida Power & Light Company	NextEra Energy, Inc.	134,779	137,369	4,799	107,373,794
2014Y	Florida Power & Light Company	NextEra Energy, Inc.	118,415	149,974	3,287	112,929,729
2015Y	Florida Power & Light Company	NextEra Energy, Inc.	110,574	102,185	4,597	119,405,262
2016Y	Florida Power & Light Company	NextEra Energy, Inc.	103,438	53,636	3,730	119,279,691
2017Y	Florida Power & Light Company	NextEra Energy, Inc.	97,736	57,440	8,069	117,873,183
2013Y	Northern Indiana Public Service Company	NiSource Inc.	21,117	576	923	17,468,011
2014Y	Northern Indiana Public Service Company	NiSource Inc.	20,345	505	967	18,186,288
2015Y	Northern Indiana Public Service Company	NiSource Inc.	19,140	371	928	16,758,427
2016Y	Northern Indiana Public Service Company	NiSource Inc.	17,248	543	1,222	16,831,194
2017Y	Northern Indiana Public Service Company	NiSource Inc.	15,422	739	1,484	16,725,564
2013Y	NorthWestern Corporation	NorthWestern Corporation	11,867	6,416	573	9,519,519
2014Y	NorthWestern Corporation	NorthWestern Corporation	12,706	6,400	615	10,006,908
2015Y	NorthWestern Corporation	NorthWestern Corporation	11,615	6,693	554	11,027,880
2016Y	NorthWestern Corporation	NorthWestern Corporation	10,627	6,601	503	9,037,846
2017Y	NorthWestern Corporation	NorthWestern Corporation	13,096	6,031	522	8,924,244

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Year	Company Name	Ultimate Parent Company Name	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	22,210	31,269	6,107	28,578,159
2014Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	21,054	35,892	8,242	30,234,927
2015Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	20,171	39,927	4,682	28,867,056
2016Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	21,973	50,081	4,713	29,762,475
2017Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	23,292	50,967	4,749	28,111,471
2013Y	Otter Tail Power Company	Otter Tail Corporation	13,422	8,132	623	6,219,751
2014Y	Otter Tail Power Company	Otter Tail Corporation	13,358	8,029	493	5,470,896
2015Y	Otter Tail Power Company	Otter Tail Corporation	12,791	8,864	313	4,709,464
2016Y	Otter Tail Power Company	Otter Tail Corporation	12,476	10,781	345	4,955,630
2017Y	Otter Tail Power Company	Otter Tail Corporation	12,912	9,358	339	5,040,591
2013Y	Pacific Gas and Electric Company	PG&E Corporation	248,874	616,738	13,922	88,322,913
2014Y	Pacific Gas and Electric Company	PG&E Corporation	216,187	614,606	10,382	88,189,685
2015Y	Pacific Gas and Electric Company	PG&E Corporation	222,794	631,523	2,979	87,981,023
2016Y	Pacific Gas and Electric Company	PG&E Corporation	212,307	611,149	2,273	85,067,412
2017Y	Pacific Gas and Electric Company	PG&E Corporation	215,958	512,904	1,195	88,175,650
2013Y	Arizona Public Service Company	Pinnacle West Capital Corporation	52,597	77,723	9,332	32,087,545
2014Y	Arizona Public Service Company	Pinnacle West Capital Corporation	52,544	60,160	9,974	32,951,388
2015Y	Arizona Public Service Company	Pinnacle West Capital Corporation	52,455	55,010	11,296	33,628,854
2016Y	Arizona Public Service Company	Pinnacle West Capital Corporation	54,257	59,023	12,389	31,928,046
2017Y	Arizona Public Service Company	Pinnacle West Capital Corporation	59,041	54,410	13,872	30,910,170
2013Y	Public Service Company of New Mexico	PNM Resources, Inc.	15,288	961	5,299	12,001,980
2014Y	Public Service Company of New Mexico	PNM Resources, Inc.	15,368	748	4,814	11,836,387
2015Y	Public Service Company of New Mexico	PNM Resources, Inc.	14,956	1,283	4,792	11,541,512
2016Y	Public Service Company of New Mexico	PNM Resources, Inc.	14,810	644	4,099	12,280,191
2017Y	Public Service Company of New Mexico	PNM Resources, Inc.	15,166	457	4,385	12,454,143
2013Y	Portland General Electric Company	Portland General Electric Company	48,824	13,288	0	21,226,863
2014Y	Portland General Electric Company	Portland General Electric Company	51,831	14,179	0	21,080,082
2015Y	Portland General Electric Company	Portland General Electric Company	54,700	15,058	0	20,859,230
2016Y	Portland General Electric Company	Portland General Electric Company	56,434	14,192	0	21,247,271
2017Y	Portland General Electric Company	Portland General Electric Company	58,493	15,696	0	21,328,945
2013Y	PPL Electric Utilities Corporation	PPL Corporation	74,898	81,586	2,533	37,712,878
2014Y	PPL Electric Utilities Corporation	PPL Corporation	78,943	91,321	2,343	38,005,667
2015Y	PPL Electric Utilities Corporation	PPL Corporation	86,548	105,952	2,233	37,967,738
2016Y	PPL Electric Utilities Corporation	PPL Corporation	82,383	94,624	1,638	37,618,811

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2017Y	PPL Electric Utilities Corporation	PPL Corporation	69,181	99,779	1,597	36,939,991
2013Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	285,256	225,491	743	44,103,026
2014Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	310,842	196,580	655	42,728,622
2015Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	290,553	174,407	3,828	43,533,905
2016Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	228,368	165,366	1,073	42,288,312
2017Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	239,979	122,699	296	40,894,038
2013Y	Puget Sound Energy, Inc.	Puget Holdings LLC	51,298	105,724	288	26,265,216
2014Y	Puget Sound Energy, Inc.	Puget Holdings LLC	59,106	113,232	526	21,968,767
2015Y	Puget Sound Energy, Inc.	Puget Holdings LLC	49,097	118,438	389	28,183,148
2016Y	Puget Sound Energy, Inc.	Puget Holdings LLC	48,803	114,318	384	29,143,765
2017Y	Puget Sound Energy, Inc.	Puget Holdings LLC	49,274	126,051	769	27,227,367
2013Y	South Carolina Electric & Gas Co.	SCANA Corporation	46,737	7,698	1,625	22,326,578
2014Y	South Carolina Electric & Gas Co.	SCANA Corporation	48,801	9,578	1,636	23,332,942
2015Y	South Carolina Electric & Gas Co.	SCANA Corporation	47,994	13,430	1,755	23,114,845
2016Y	South Carolina Electric & Gas Co.	SCANA Corporation	47,831	14,770	1,425	23,471,194
2017Y	South Carolina Electric & Gas Co.	SCANA Corporation	46,520	14,367	1,469	22,879,069
2013Y	Oncor Electric Delivery Company LLC	Sempra Energy	19,606	64,952	1	112,312,279
2014Y	Oncor Electric Delivery Company LLC	Sempra Energy	21,234	63,760	87	114,905,829
2015Y	Oncor Electric Delivery Company LLC	Sempra Energy	18,574	49,259	28	116,594,625
2016Y	Oncor Electric Delivery Company LLC	Sempra Energy	17,798	57,611	0	115,791,379
2017Y	Oncor Electric Delivery Company LLC	Sempra Energy	18,882	46,298	2	117,017,075
2013Y	San Diego Gas & Electric Co.	Sempra Energy	53,797	148,373	0	32,916,382
2014Y	San Diego Gas & Electric Co.	Sempra Energy	43,897	157,667	0	30,952,957
2015Y	San Diego Gas & Electric Co.	Sempra Energy	45,453	173,383	0	33,132,033
2016Y	San Diego Gas & Electric Co.	Sempra Energy	44,111	208,005	0	29,443,890
2017Y	San Diego Gas & Electric Co.	Sempra Energy	46,369	174,580	0	29,300,970
2013Y	Alabama Power Company	Southern Company	90,103	34,907	9,154	66,309,626
2014Y	Alabama Power Company	Southern Company	100,081	38,459	8,779	67,155,314
2015Y	Alabama Power Company	Southern Company	97,311	40,201	9,180	63,847,336
2016Y	Alabama Power Company	Southern Company	94,943	42,361	6,972	63,873,423
2017Y	Alabama Power Company	Southern Company	89,807	48,938	6,618	63,290,561
2013Y	Georgia Power Company	Southern Company	135,041	72,749	43,330	84,726,779
2014Y	Georgia Power Company	Southern Company	154,531	88,588	55,105	89,190,865
2015Y	Georgia Power Company	Southern Company	154,823	94,667	56,593	87,859,128

Notes: NA data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Sales of Electricity Volume (MWh)
2016Y	Georgia Power Company	Southern Company	154,466	98,184	63,588	89,686,468
2017Y	Georgia Power Company	Southern Company	137,123	83,472	58,694	86,478,222
2013Y	Gulf Power Company	Southern Company	21,295	35,993	1,186	14,909,545
2014Y	Gulf Power Company	Southern Company	25,421	25,819	1,460	16,028,868
2015Y	Gulf Power Company	Southern Company	24,629	30,098	1,391	14,031,937
2016Y	Gulf Power Company	Southern Company	25,341	23,677	1,132	14,616,769
2017Y	Gulf Power Company	Southern Company	26,321	27,078	1,391	15,445,454
2013Y	Mississippi Power Company	Southern Company	17,838	5,798	4,175	14,591,834
2014Y	Mississippi Power Company	Southern Company	16,158	7,922	4,941	17,059,643
2015Y	Mississippi Power Company	Southern Company	13,746	10,273	4,742	16,487,788
2016Y	Mississippi Power Company	Southern Company	16,769	10,008	4,293	14,866,485
2017Y	Mississippi Power Company	Southern Company	15,719	9,078	2,884	15,283,882
2013Y	UGI Utilities, Inc.	UGI Corporation	2,969	442	36	1,000,701
2014Y	UGI Utilities, Inc.	UGI Corporation	3,220	363	31	975,771
2015Y	UGI Utilities, Inc.	UGI Corporation	3,361	309	24	990,384
2016Y	UGI Utilities, Inc.	UGI Corporation	2,655	266	25	977,118
2017Y	UGI Utilities, Inc.	UGI Corporation	3,114	316	30	956,654
2013Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	2,895	3,924	619	505,418
2014Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	3,084	3,733	1,013	533,929
2015Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	3,619	4,772	1,201	460,811
2016Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	3,067	3,739	993	444,498
2017Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	2,810	4,203	0	455,496
2013Y	Unitil Energy Systems, Inc.	Unitil Corporation	3,763	2,901	0	1,234,354
2014Y	Unitil Energy Systems, Inc.	Unitil Corporation	3,895	3,091	0	1,230,055
2015Y	Unitil Energy Systems, Inc.	Unitil Corporation	3,697	2,469	0	1,229,879
2016Y	Unitil Energy Systems, Inc.	Unitil Corporation	3,577	2,637	0	1,203,404
2017Y	Unitil Energy Systems, Inc.	Unitil Corporation	3,410	3,076	0	1,215,797
2013Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	6,427	619	13,259	5,993,477
2014Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	5,880	592	12,227	6,240,584
2015Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	6,189	323	8,294	5,795,918
2016Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	5,908	617	10,444	5,610,259
2017Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	6,402	552	9,117	5,220,819
2013Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	54,545	51,157	845	32,555,334
2014Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	53,327	50,321	893	32,942,828

Notes: NA data generally represents a merger with another operating company within the same parent/holding company.
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Year	Company Name	Ultimate Parent Company Name	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Sales of Electricity Volume (MWh)
2015Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	54,234	65,658	680	35,818,700
2016Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	52,387	48,032	355	35,894,209
2017Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	51,647	46,852	80	34,951,750
2013Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	15,454	25,538	2	16,129,893
2014Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	15,788	24,665	1	14,557,949
2015Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	16,639	24,776	2	14,839,077
2016Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	16,520	20,638	0	14,636,889
2017Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	14,157	21,657	0	14,814,995
2013Y	Kansas Gas and Electric Company	Westar Energy, Inc.	12,619	1,827	0	10,605,055
2014Y	Kansas Gas and Electric Company	Westar Energy, Inc.	15,741	1,765	0	10,800,465
2015Y	Kansas Gas and Electric Company	Westar Energy, Inc.	13,961	1,713	1	10,761,626
2016Y	Kansas Gas and Electric Company	Westar Energy, Inc.	15,625	1,621	0	11,297,034
2017Y	Kansas Gas and Electric Company	Westar Energy, Inc.	14,004	1,559	0	10,847,878
2013Y	Westar Energy (KPL)	Westar Energy, Inc.	14,214	1,851	0	17,484,374
2014Y	Westar Energy (KPL)	Westar Energy, Inc.	13,976	1,868	0	18,531,716
2015Y	Westar Energy (KPL)	Westar Energy, Inc.	15,837	1,933	1	17,180,535
2016Y	Westar Energy (KPL)	Westar Energy, Inc.	17,854	1,935	0	16,555,817
2017Y	Westar Energy (KPL)	Westar Energy, Inc.	17,040	1,942	0	18,790,662
2013Y	Northern States Power Company - MN	Xcel Energy Inc.	55,250	84,666	18	37,474,524
2014Y	Northern States Power Company - MN	Xcel Energy Inc.	58,047	124,080	9	39,129,144
2015Y	Northern States Power Company - MN	Xcel Energy Inc.	55,350	69,454	2	39,484,126
2016Y	Northern States Power Company - MN	Xcel Energy Inc.	55,996	89,936	1	41,519,021
2017Y	Northern States Power Company - MN	Xcel Energy Inc.	55,401	106,677	5	40,720,489
2013Y	Northern States Power Company - WI	Xcel Energy Inc.	10,015	10,571	82	6,562,368
2014Y	Northern States Power Company - WI	Xcel Energy Inc.	10,384	11,134	80	6,750,889
2015Y	Northern States Power Company - WI	Xcel Energy Inc.	9,835	11,158	72	6,647,300
2016Y	Northern States Power Company - WI	Xcel Energy Inc.	9,336	12,318	55	6,641,542
2017Y	Northern States Power Company - WI	Xcel Energy Inc.	9,663	12,252	53	6,727,740
2013Y	Public Service Company of Colorado	Xcel Energy Inc.	38,200	125,572	641	33,450,187
2014Y	Public Service Company of Colorado	Xcel Energy Inc.	37,413	130,409	528	32,498,488
2015Y	Public Service Company of Colorado	Xcel Energy Inc.	33,293	121,395	589	32,396,474
2016Y	Public Service Company of Colorado	Xcel Energy Inc.	34,860	107,952	651	34,472,722
2017Y	Public Service Company of Colorado	Xcel Energy Inc.	34,160	113,706	627	36,486,396
2013Y	Southwestern Public Service Company	Xcel Energy Inc.	15,423	15,588	189	28,292,788

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Year	Company Name	Ultimate Parent Company Name	Total Customer Accounts Expense (\$000)	Total Customer Svc & Informational Expense (\$000)	Total Sales Expense (\$000)	Total Sales of Electricity Volume (MWh)
2014Y	Southwestern Public Service Company	Xcel Energy Inc.	15,673	15,174	188	28,265,391
2015Y	Southwestern Public Service Company	Xcel Energy Inc.	15,664	16,439	149	28,414,831
2016Y	Southwestern Public Service Company	Xcel Energy Inc.	20,045	19,019	136	28,383,129
2017Y	Southwestern Public Service Company	Xcel Energy Inc.	18,382	18,484	128	27,124,064
		Total	25,600,449	31,091,138	1,020,985	14,663,555,802

A&G Rankings [2013-2017]

Holding Company	Total Sales of Elect.			Ranking
	A&G O&M	Volume (MWh)	Total A&G/MWh	
CenterPoint Energy, Inc.	1,124,431,000	421,479,989	2.67	1
AEP	2,965,973,000	1,061,025,937	2.80	2
Berkshire Hathaway Inc.	1,836,625,000	647,595,062	2.84	3
FirstEnergy Corp.	2,445,607,000	795,797,359	3.07	4
NextEra Energy, Inc.	1,887,794,000	576,861,659	3.27	5
Dominion Energy, Inc.	1,796,341,000	424,814,207	4.23	6
CMS Energy Corporation	764,720,000	180,393,075	4.24	7
Puget Holdings LLC	577,363,000	132,788,263	4.35	8
OGE Energy Corp.	642,314,000	145,554,088	4.41	9
Public Service Enterprise Group	950,335,000	213,547,903	4.45	10
PPL Corporation	891,792,000	188,245,085	4.74	11
Cleco Partners LP	282,366,000	58,299,323	4.84	12
WEC Energy Group, Inc.	1,210,349,000	247,141,624	4.90	13
Entergy Corporation	3,677,412,000	748,921,761	4.91	14
Ameren Corporation	2,031,736,000	396,912,264	5.12	15
ALLETE, Inc.	385,436,000	74,330,795	5.19	16
Duke Energy Corporation	6,640,557,000	1,280,342,802	5.19	17
Xcel Energy Inc.	2,876,260,000	541,441,613	5.31	18
LKE	947,428,654	177,006,629	5.35	19
Exelon Corporation	5,661,971,000	1,034,415,389	5.47	20
Southern Company	5,101,599,000	923,010,412	5.53	21
Pinnacle West Capital Corp	943,750,000	161,506,003	5.84	22
Avista Corporation	373,418,000	63,822,212	5.85	23

A&G Rankings [2013-2017]

Holding Company	Total Sales of Elect.			Ranking
	A&G O&M	Volume (MWh)	Total A&G/MWh	
Sempra Energy	4,289,437,000	732,367,419	5.86	24
Alliant Energy Corporation	953,017,000	158,149,961	6.03	25
AES Corporation	1,055,499,000	157,380,054	6.71	26
SCANA Corporation	885,145,000	131,504,208	6.73	27
Emera Incorporated	725,688,000	106,439,317	6.82	28
Vectren Corporation	198,134,000	28,861,057	6.87	29
MDU Resources Group, Inc.	114,074,000	16,493,138	6.92	30
Westar Energy, Inc.	1,043,595,000	146,818,676	7.11	31
UGI Corporation	36,654,000	4,900,628	7.48	32
DTE Energy Company	1,734,419,000	230,365,093	7.53	33
NorthWestern Corporation	367,391,000	48,516,397	7.57	34
Great Plains Energy Inc	1,198,543,000	149,872,607	8.00	35
Otter Tail Corporation	213,607,000	26,396,332	8.09	36
Iberdrola, S.A.	1,279,036,000	157,875,239	8.10	37
Portland General Electric Co	858,523,000	105,742,391	8.12	38
DQE Holdings LLC	557,801,000	67,127,889	8.31	39
Eversource Energy	2,414,279,000	289,678,343	8.33	40
Wisconsin River Power Co	6,137,000	719,940	8.52	41
Unitil Corporation	73,044,000	8,513,641	8.58	42
Black Hills Corporation	284,467,000	32,232,125	8.83	43
IDACORP, Inc.	736,901,000	80,222,328	9.19	44
Algonquin Power & Utilities	278,402,000	29,685,318	9.38	45
Caisse de dépôt et	222,644,000	23,640,213	9.42	46

A&G Rankings [2013-2017]

Holding Company	A&G O&M	Total Sales of Elect.		Ranking
		Volume (MWh)	Total A&G/MWh	
MGE Energy, Inc.	174,332,000	17,944,098	9.72	47
Fortis Inc.	957,836,000	90,696,008	10.56	48
El Paso Electric Company	597,214,000	54,312,529	11.00	49
Edison International	5,388,228,000	476,972,294	11.30	50
PNM Resources, Inc.	707,960,000	60,114,213	11.78	51
NiSource Inc.	1,040,189,000	85,969,484	12.10	52
PG&E Corporation	5,557,300,000	437,736,683	12.70	53
Balfour Beatty Infrastructure	61,577,000	4,147,629	14.85	54
Consolidated Edison, Inc.	4,836,328,000	264,071,298	18.31	55
National Grid plc	4,408,386,000	160,448,295	27.48	56
Mt. Carmel Public Utility Co	14,399,000	490,041	29.38	57
Grand Total	89,285,763,654	14,881,658,340		

Q1	5.12
Q2	6.87
Q3	8.83
Industry Avg.	6.00

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Dayton Power and Light Company	AES Corporation	84,976	19,416,290
2014Y	Dayton Power and Light Company	AES Corporation	71,385	18,643,195
2015Y	Dayton Power and Light Company	AES Corporation	74,868	16,433,036
2016Y	Dayton Power and Light Company	AES Corporation	78,267	16,158,129
2017Y	Dayton Power and Light Company	AES Corporation	89,056	12,236,126
2013Y	Indianapolis Power & Light Company	AES Corporation	139,732	16,033,922
2014Y	Indianapolis Power & Light Company	AES Corporation	125,982	16,391,321
2015Y	Indianapolis Power & Light Company	AES Corporation	127,068	14,397,561
2016Y	Indianapolis Power & Light Company	AES Corporation	133,658	14,185,985
2017Y	Indianapolis Power & Light Company	AES Corporation	130,507	13,484,489
2013Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	44,700	5,620,276
2014Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	45,640	5,131,750
2015Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	46,209	4,940,028
2016Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	49,080	4,950,707
2017Y	Empire District Electric Company	Algonquin Power & Utilities Corp.	53,163	4,841,355
2013Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	9,544	552,273
2014Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	8,352	910,825
2015Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	7,133	933,262
2016Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	7,886	910,242
2017Y	Liberty Utilities (Granite State Electric) Corp.	Algonquin Power & Utilities Corp.	6,695	894,600
2013Y	ALLETE (Minnesota Power)	ALLETE, Inc.	69,292	13,264,062
2014Y	ALLETE (Minnesota Power)	ALLETE, Inc.	80,821	13,942,499
2015Y	ALLETE (Minnesota Power)	ALLETE, Inc.	73,416	14,369,559
2016Y	ALLETE (Minnesota Power)	ALLETE, Inc.	60,228	14,147,335

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2017Y	ALLETE (Minnesota Power)	ALLETE, Inc.	87,232	14,692,658
2013Y	Superior Water, Light and Power Company	ALLETE, Inc.	2,792	687,209
2014Y	Superior Water, Light and Power Company	ALLETE, Inc.	2,590	770,427
2015Y	Superior Water, Light and Power Company	ALLETE, Inc.	3,102	788,342
2016Y	Superior Water, Light and Power Company	ALLETE, Inc.	2,871	820,880
2017Y	Superior Water, Light and Power Company	ALLETE, Inc.	3,092	847,824
2013Y	Interstate Power and Light Company	Alliant Energy Corporation	92,498	17,194,056
2014Y	Interstate Power and Light Company	Alliant Energy Corporation	97,904	16,871,181
2015Y	Interstate Power and Light Company	Alliant Energy Corporation	103,499	16,703,172
2016Y	Interstate Power and Light Company	Alliant Energy Corporation	115,224	16,662,731
2017Y	Interstate Power and Light Company	Alliant Energy Corporation	117,573	17,406,995
2013Y	Wisconsin Power and Light Company	Alliant Energy Corporation	81,752	14,862,652
2014Y	Wisconsin Power and Light Company	Alliant Energy Corporation	81,895	14,603,712
2015Y	Wisconsin Power and Light Company	Alliant Energy Corporation	85,707	15,199,013
2016Y	Wisconsin Power and Light Company	Alliant Energy Corporation	88,857	14,480,783
2017Y	Wisconsin Power and Light Company	Alliant Energy Corporation	88,108	14,165,666
2013Y	Ameren Illinois Company	Ameren Corporation	140,454	38,012,834
2014Y	Ameren Illinois Company	Ameren Corporation	151,672	37,915,282
2015Y	Ameren Illinois Company	Ameren Corporation	151,661	36,850,871
2016Y	Ameren Illinois Company	Ameren Corporation	149,707	36,754,294
2017Y	Ameren Illinois Company	Ameren Corporation	157,181	35,537,431
2013Y	Union Electric Company	Ameren Corporation	251,904	43,158,138
2014Y	Union Electric Company	Ameren Corporation	278,701	43,192,724
2015Y	Union Electric Company	Ameren Corporation	264,623	43,255,846

Notes: NA data generally represents a merger with another operating company within the same parent/holding company.

Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2016Y	Union Electric Company	Ameren Corporation	251,783	39,997,209
2017Y	Union Electric Company	Ameren Corporation	234,050	42,237,635
2013Y	AEP Generating Company	American Electric Power Company, Inc.	5,909	10,546,276
2014Y	AEP Generating Company	American Electric Power Company, Inc.	6,076	11,675,906
2015Y	AEP Generating Company	American Electric Power Company, Inc.	8,563	12,994,269
2016Y	AEP Generating Company	American Electric Power Company, Inc.	7,548	13,491,086
2017Y	AEP Generating Company	American Electric Power Company, Inc.	4,815	6,069,003
2013Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA
2014Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	43,193	47,215,732
2015Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA
2016Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA
2017Y	AEP Generation Resources Inc.	American Electric Power Company, Inc.	NA	NA
2013Y	AEP Texas Central Company	American Electric Power Company, Inc.	43,644	NA
2014Y	AEP Texas Central Company	American Electric Power Company, Inc.	47,220	NA
2015Y	AEP Texas Central Company	American Electric Power Company, Inc.	52,017	NA
2016Y	AEP Texas Central Company	American Electric Power Company, Inc.	47,242	NA
2017Y	AEP Texas Central Company	American Electric Power Company, Inc.	NA	NA
2013Y	AEP Texas North Company	American Electric Power Company, Inc.	16,439	2,435,181
2014Y	AEP Texas North Company	American Electric Power Company, Inc.	17,109	1,741,758
2015Y	AEP Texas North Company	American Electric Power Company, Inc.	17,969	1,368,742
2016Y	AEP Texas North Company	American Electric Power Company, Inc.	17,352	1,381,295
2017Y	AEP Texas North Company	American Electric Power Company, Inc.	NA	NA
2013Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA
2014Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2015Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA
2016Y	AEP Texas, Inc.	American Electric Power Company, Inc.	NA	NA
2017Y	AEP Texas, Inc.	American Electric Power Company, Inc.	64,374	923,791
2013Y	Appalachian Power Company	American Electric Power Company, Inc.	104,512	47,596,529
2014Y	Appalachian Power Company	American Electric Power Company, Inc.	111,163	35,769,358
2015Y	Appalachian Power Company	American Electric Power Company, Inc.	104,606	34,847,578
2016Y	Appalachian Power Company	American Electric Power Company, Inc.	104,282	34,862,820
2017Y	Appalachian Power Company	American Electric Power Company, Inc.	101,376	33,601,395
2013Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	115,582	38,036,953
2014Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	126,248	35,331,017
2015Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	115,453	30,404,900
2016Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	114,698	28,379,413
2017Y	Indiana Michigan Power Company	American Electric Power Company, Inc.	107,631	29,819,953
2013Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	18,249	5,475,276
2014Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	16,124	5,936,251
2015Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	13,207	5,186,234
2016Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	13,933	4,985,411
2017Y	Indiana-Kentucky Electric Corporation	American Electric Power Company, Inc.	12,801	6,032,062
2013Y	Kentucky Power Company	American Electric Power Company, Inc.	19,790	9,933,527
2014Y	Kentucky Power Company	American Electric Power Company, Inc.	21,802	11,993,933
2015Y	Kentucky Power Company	American Electric Power Company, Inc.	22,615	8,700,986
2016Y	Kentucky Power Company	American Electric Power Company, Inc.	21,711	7,276,047
2017Y	Kentucky Power Company	American Electric Power Company, Inc.	24,852	7,106,360
2013Y	Kingsport Power Company	American Electric Power Company, Inc.	1,790	2,045,738

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2014Y	Kingsport Power Company	American Electric Power Company, Inc.	1,908	2,120,716
2015Y	Kingsport Power Company	American Electric Power Company, Inc.	2,925	2,086,994
2016Y	Kingsport Power Company	American Electric Power Company, Inc.	2,572	2,038,552
2017Y	Kingsport Power Company	American Electric Power Company, Inc.	2,505	1,971,080
2013Y	Ohio Power Company	American Electric Power Company, Inc.	137,830	60,639,578
2014Y	Ohio Power Company	American Electric Power Company, Inc.	84,436	15,591,760
2015Y	Ohio Power Company	American Electric Power Company, Inc.	79,307	45,685,751
2016Y	Ohio Power Company	American Electric Power Company, Inc.	79,284	45,870,876
2017Y	Ohio Power Company	American Electric Power Company, Inc.	78,682	45,688,514
2013Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	31,805	10,499,577
2014Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	33,237	11,400,464
2015Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	24,520	8,872,645
2016Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	23,545	9,919,829
2017Y	Ohio Valley Electric Corporation	American Electric Power Company, Inc.	31,441	11,881,430
2013Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	51,846	19,239,394
2014Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	58,605	19,517,893
2015Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	56,457	18,916,965
2016Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	55,328	19,425,199
2017Y	Public Service Company of Oklahoma	American Electric Power Company, Inc.	55,904	19,052,676
2013Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	64,549	28,553,233
2014Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	72,366	28,644,882
2015Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	70,386	27,269,400
2016Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	75,617	26,169,526
2017Y	Southwestern Electric Power Company	American Electric Power Company, Inc.	68,484	26,257,034

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Wheeling Power Company	American Electric Power Company, Inc.	2,187	2,703,781
2014Y	Wheeling Power Company	American Electric Power Company, Inc.	2,667	3,269,892
2015Y	Wheeling Power Company	American Electric Power Company, Inc.	8,230	4,451,364
2016Y	Wheeling Power Company	American Electric Power Company, Inc.	9,057	5,106,836
2017Y	Wheeling Power Company	American Electric Power Company, Inc.	8,398	5,015,316
2013Y	Alaska Electric Light and Power Company	Avista Corporation	4,316	377,005
2014Y	Alaska Electric Light and Power Company	Avista Corporation	4,191	422,784
2015Y	Alaska Electric Light and Power Company	Avista Corporation	4,429	398,066
2016Y	Alaska Electric Light and Power Company	Avista Corporation	4,330	395,154
2017Y	Alaska Electric Light and Power Company	Avista Corporation	4,576	414,210
2013Y	Avista Corporation	Avista Corporation	64,056	13,318,994
2014Y	Avista Corporation	Avista Corporation	67,943	12,839,533
2015Y	Avista Corporation	Avista Corporation	73,623	11,942,035
2016Y	Avista Corporation	Avista Corporation	73,986	11,733,626
2017Y	Avista Corporation	Avista Corporation	71,968	11,980,805
2013Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	11,337	881,022
2014Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	9,853	845,665
2015Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	17,556	844,127
2016Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	12,036	831,622
2017Y	Upper Peninsula Power Company	Balfour Beatty Infrastructure Partners, L.P.	10,795	745,193
2013Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	77,455	32,680,735
2014Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	72,945	32,499,927
2015Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	68,170	31,832,657
2016Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	63,771	32,475,023

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2017Y	MidAmerican Energy Company	Berkshire Hathaway Inc.	59,530	33,727,302
2013Y	Nevada Power Company	Berkshire Hathaway Inc.	139,802	24,064,426
2014Y	Nevada Power Company	Berkshire Hathaway Inc.	115,901	22,745,488
2015Y	Nevada Power Company	Berkshire Hathaway Inc.	99,676	25,481,621
2016Y	Nevada Power Company	Berkshire Hathaway Inc.	99,466	25,062,084
2017Y	Nevada Power Company	Berkshire Hathaway Inc.	104,964	23,751,206
2013Y	PacifiCorp	Berkshire Hathaway Inc.	175,800	65,869,008
2014Y	PacifiCorp	Berkshire Hathaway Inc.	103,887	65,269,524
2015Y	PacifiCorp	Berkshire Hathaway Inc.	134,217	63,530,663
2016Y	PacifiCorp	Berkshire Hathaway Inc.	129,633	60,958,902
2017Y	PacifiCorp	Berkshire Hathaway Inc.	142,110	62,468,319
2013Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	59,898	9,185,572
2014Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	50,018	8,882,408
2015Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	46,684	8,911,051
2016Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	47,076	9,000,293
2017Y	Sierra Pacific Power Company	Berkshire Hathaway Inc.	45,622	9,198,853
2013Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	22,454	2,028,643
2014Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	20,287	1,957,695
2015Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	20,082	1,959,505
2016Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	19,732	1,985,177
2017Y	Black Hills Colorado Electric Utility Company, LP	Black Hills Corporation	19,595	1,932,972
2013Y	Black Hills Power, Inc.	Black Hills Corporation	30,256	3,084,298
2014Y	Black Hills Power, Inc.	Black Hills Corporation	29,891	2,905,098
2015Y	Black Hills Power, Inc.	Black Hills Corporation	26,141	2,873,371

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2016Y	Black Hills Power, Inc.	Black Hills Corporation	23,125	2,611,946
2017Y	Black Hills Power, Inc.	Black Hills Corporation	25,139	2,992,386
2013Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	7,880	1,635,140
2014Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	9,082	1,639,680
2015Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	10,740	1,418,697
2016Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	9,537	1,559,870
2017Y	Cheyenne Light, Fuel and Power Company	Black Hills Corporation	10,526	1,647,647
2013Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	51,916	4,853,495
2014Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	46,640	4,713,347
2015Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	43,845	4,751,076
2016Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	39,113	4,688,744
2017Y	Green Mountain Power Corporation	Caisse de dépôt et placement du Québec	41,130	4,633,551
2013Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	212,275	79,984,965
2014Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	224,780	81,839,060
2015Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	228,393	84,190,647
2016Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	223,340	86,828,900
2017Y	CenterPoint Energy Houston Electric, LLC	CenterPoint Energy, Inc.	235,643	88,636,417
2013Y	Cleco Power LLC	Cleco Partners LP	54,127	11,115,732
2014Y	Cleco Power LLC	Cleco Partners LP	57,395	12,201,940
2015Y	Cleco Power LLC	Cleco Partners LP	60,469	12,105,640
2016Y	Cleco Power LLC	Cleco Partners LP	55,673	11,596,427
2017Y	Cleco Power LLC	Cleco Partners LP	54,702	11,279,584
2013Y	Consumers Energy Company	CMS Energy Corporation	178,714	35,276,791
2014Y	Consumers Energy Company	CMS Energy Corporation	144,938	35,893,242

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2015Y	Consumers Energy Company	CMS Energy Corporation	153,594	36,357,438
2016Y	Consumers Energy Company	CMS Energy Corporation	142,178	36,746,531
2017Y	Consumers Energy Company	CMS Energy Corporation	145,296	36,119,073
2013Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	972,467	47,335,320
2014Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	973,181	46,406,542
2015Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	886,291	47,202,850
2016Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	866,797	47,450,242
2017Y	Consolidated Edison Company of New York, Inc.	Consolidated Edison, Inc.	669,606	46,342,045
2013Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	77,322	4,263,699
2014Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	79,127	4,256,408
2015Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	77,737	4,415,840
2016Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	65,884	4,315,576
2017Y	Orange and Rockland Utilities, Inc.	Consolidated Edison, Inc.	63,266	4,056,841
2013Y	Rockland Electric Company	Consolidated Edison, Inc.	23,683	1,642,857
2014Y	Rockland Electric Company	Consolidated Edison, Inc.	20,925	1,610,904
2015Y	Rockland Electric Company	Consolidated Edison, Inc.	20,296	1,631,351
2016Y	Rockland Electric Company	Consolidated Edison, Inc.	19,309	1,601,861
2017Y	Rockland Electric Company	Consolidated Edison, Inc.	20,437	1,538,962
2013Y	Virginia Electric and Power Company	Dominion Energy, Inc.	388,641	82,852,117
2014Y	Virginia Electric and Power Company	Dominion Energy, Inc.	330,798	83,938,195
2015Y	Virginia Electric and Power Company	Dominion Energy, Inc.	354,234	85,178,907
2016Y	Virginia Electric and Power Company	Dominion Energy, Inc.	377,040	87,875,099
2017Y	Virginia Electric and Power Company	Dominion Energy, Inc.	345,628	84,969,889
2013Y	Duquesne Light Company	DQE Holdings LLC	101,997	14,007,273

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2014Y	Duquesne Light Company	DQE Holdings LLC	104,953	13,747,339
2015Y	Duquesne Light Company	DQE Holdings LLC	115,862	13,503,863
2016Y	Duquesne Light Company	DQE Holdings LLC	120,524	13,172,591
2017Y	Duquesne Light Company	DQE Holdings LLC	114,465	12,696,823
2013Y	DTE Electric Company	DTE Energy Company	377,304	47,062,371
2014Y	DTE Electric Company	DTE Energy Company	316,623	46,076,577
2015Y	DTE Electric Company	DTE Energy Company	314,033	46,281,765
2016Y	DTE Electric Company	DTE Energy Company	357,938	45,998,164
2017Y	DTE Electric Company	DTE Energy Company	368,521	44,946,216
2013Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	575,778	85,789,697
2014Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	460,331	87,645,520
2015Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	532,642	87,375,571
2016Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	491,096	88,544,715
2017Y	Duke Energy Carolinas, LLC	Duke Energy Corporation	414,143	87,306,564
2013Y	Duke Energy Florida, LLC	Duke Energy Corporation	279,602	38,164,155
2014Y	Duke Energy Florida, LLC	Duke Energy Corporation	237,312	38,728,049
2015Y	Duke Energy Florida, LLC	Duke Energy Corporation	242,876	39,989,379
2016Y	Duke Energy Florida, LLC	Duke Energy Corporation	257,542	40,660,935
2017Y	Duke Energy Florida, LLC	Duke Energy Corporation	217,891	40,290,293
2013Y	Duke Energy Indiana, LLC	Duke Energy Corporation	197,917	33,714,982
2014Y	Duke Energy Indiana, LLC	Duke Energy Corporation	155,383	33,433,620
2015Y	Duke Energy Indiana, LLC	Duke Energy Corporation	161,178	33,517,569
2016Y	Duke Energy Indiana, LLC	Duke Energy Corporation	152,284	34,368,826
2017Y	Duke Energy Indiana, LLC	Duke Energy Corporation	140,185	33,145,670

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	23,632	4,546,692
2014Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	18,599	4,447,988
2015Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	20,732	5,277,786
2016Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	19,370	4,672,987
2017Y	Duke Energy Kentucky, Inc.	Duke Energy Corporation	19,497	4,908,072
2013Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	143,718	39,309,749
2014Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	80,542	27,741,596
2015Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	86,660	20,805,363
2016Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	54,281	21,320,518
2017Y	Duke Energy Ohio, Inc.	Duke Energy Corporation	56,553	20,805,946
2013Y	Duke Energy Progress, LLC	Duke Energy Corporation	349,517	60,204,063
2014Y	Duke Energy Progress, LLC	Duke Energy Corporation	296,661	62,871,047
2015Y	Duke Energy Progress, LLC	Duke Energy Corporation	299,516	64,880,560
2016Y	Duke Energy Progress, LLC	Duke Energy Corporation	340,666	69,052,154
2017Y	Duke Energy Progress, LLC	Duke Energy Corporation	314,453	66,822,736
2013Y	Southern California Edison Company	Edison International	1,190,561	90,552,978
2014Y	Southern California Edison Company	Edison International	1,164,602	116,437,195
2015Y	Southern California Edison Company	Edison International	1,058,831	90,495,397
2016Y	Southern California Edison Company	Edison International	999,751	88,194,998
2017Y	Southern California Edison Company	Edison International	974,483	91,291,726
2013Y	El Paso Electric Company	El Paso Electric Company	125,348	10,884,241
2014Y	El Paso Electric Company	El Paso Electric Company	121,061	11,009,422
2015Y	El Paso Electric Company	El Paso Electric Company	116,878	10,915,601
2016Y	El Paso Electric Company	El Paso Electric Company	116,065	10,598,511

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2017Y	El Paso Electric Company	El Paso Electric Company	117,862	10,904,754
2013Y	Emera Maine	Emera Incorporated	12,342	1,869,923
2014Y	Emera Maine	Emera Incorporated	16,305	2,344,241
2015Y	Emera Maine	Emera Incorporated	18,529	2,325,046
2016Y	Emera Maine	Emera Incorporated	15,928	2,217,874
2017Y	Emera Maine	Emera Incorporated	15,413	2,270,073
2013Y	Maine Public Service Company	Emera Incorporated	3,641	NA
2014Y	Maine Public Service Company	Emera Incorporated	NA	NA
2015Y	Maine Public Service Company	Emera Incorporated	NA	NA
2016Y	Maine Public Service Company	Emera Incorporated	NA	NA
2017Y	Maine Public Service Company	Emera Incorporated	NA	NA
2013Y	Tampa Electric Company	Emera Incorporated	145,127	18,639,927
2014Y	Tampa Electric Company	Emera Incorporated	132,051	18,784,911
2015Y	Tampa Electric Company	Emera Incorporated	123,601	19,121,762
2016Y	Tampa Electric Company	Emera Incorporated	123,403	19,440,142
2017Y	Tampa Electric Company	Emera Incorporated	119,348	19,425,418
2013Y	EL Investment Company, LLC	Entergy Corporation	NA	NA
2014Y	EL Investment Company, LLC	Entergy Corporation	NA	NA
2015Y	EL Investment Company, LLC	Entergy Corporation	119,789	31,482,380
2016Y	EL Investment Company, LLC	Entergy Corporation	NA	NA
2017Y	EL Investment Company, LLC	Entergy Corporation	NA	NA
2013Y	Entergy Arkansas, Inc.	Entergy Corporation	190,048	29,788,956
2014Y	Entergy Arkansas, Inc.	Entergy Corporation	181,182	31,350,781
2015Y	Entergy Arkansas, Inc.	Entergy Corporation	197,103	31,379,457

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2016Y	Entergy Arkansas, Inc.	Entergy Corporation	185,467	29,363,790
2017Y	Entergy Arkansas, Inc.	Entergy Corporation	188,114	29,219,532
2013Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	137,996	27,130,595
2014Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	125,366	28,713,874
2015Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	94,552	21,426,698
2016Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	NA	NA
2017Y	Entergy Gulf States Louisiana, L.L.C.	Entergy Corporation	NA	NA
2013Y	Entergy Louisiana, LLC	Entergy Corporation	169,784	34,156,904
2014Y	Entergy Louisiana, LLC	Entergy Corporation	158,484	37,479,888
2015Y	Entergy Louisiana, LLC	Entergy Corporation	86,301	14,743,976
2016Y	Entergy Louisiana, LLC	Entergy Corporation	284,408	63,634,403
2017Y	Entergy Louisiana, LLC	Entergy Corporation	285,412	61,747,129
2013Y	Entergy Mississippi, Inc.	Entergy Corporation	82,429	14,965,739
2014Y	Entergy Mississippi, Inc.	Entergy Corporation	93,348	16,054,977
2015Y	Entergy Mississippi, Inc.	Entergy Corporation	79,355	14,969,217
2016Y	Entergy Mississippi, Inc.	Entergy Corporation	80,510	14,462,253
2017Y	Entergy Mississippi, Inc.	Entergy Corporation	79,308	13,904,918
2013Y	Entergy New Orleans, LLC	Entergy Corporation	48,573	5,615,573
2014Y	Entergy New Orleans, LLC	Entergy Corporation	42,466	6,570,789
2015Y	Entergy New Orleans, LLC	Entergy Corporation	36,414	7,138,626
2016Y	Entergy New Orleans, LLC	Entergy Corporation	38,691	6,947,771
2017Y	Entergy New Orleans, LLC	Entergy Corporation	36,890	7,327,377
2013Y	Entergy Texas, Inc.	Entergy Corporation	102,265	23,811,698
2014Y	Entergy Texas, Inc.	Entergy Corporation	80,724	22,661,605

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2015Y	Entergy Texas, Inc.	Entergy Corporation	88,856	23,855,503
2016Y	Entergy Texas, Inc.	Entergy Corporation	80,734	23,892,632
2017Y	Entergy Texas, Inc.	Entergy Corporation	77,937	20,321,420
2013Y	EWO Marketing, LLC	Entergy Corporation	4,085	2,589,069
2014Y	EWO Marketing, LLC	Entergy Corporation	2,149	2,505,358
2015Y	EWO Marketing, LLC	Entergy Corporation	2,706	2,504,139
2016Y	EWO Marketing, LLC	Entergy Corporation	1,541	2,638,560
2017Y	EWO Marketing, LLC	Entergy Corporation	1,374	2,648,461
2013Y	System Energy Resources, Inc.	Entergy Corporation	52,925	9,793,557
2014Y	System Energy Resources, Inc.	Entergy Corporation	37,377	9,218,542
2015Y	System Energy Resources, Inc.	Entergy Corporation	42,894	10,546,906
2016Y	System Energy Resources, Inc.	Entergy Corporation	39,232	5,683,560
2017Y	System Energy Resources, Inc.	Entergy Corporation	40,623	6,675,148
2013Y	Connecticut Light and Power Company	Eversource Energy	221,347	23,299,945
2014Y	Connecticut Light and Power Company	Eversource Energy	182,625	22,647,162
2015Y	Connecticut Light and Power Company	Eversource Energy	192,554	22,643,456
2016Y	Connecticut Light and Power Company	Eversource Energy	183,404	22,342,433
2017Y	Connecticut Light and Power Company	Eversource Energy	183,262	21,611,697
2013Y	NSTAR Electric Company	Eversource Energy	156,881	23,996,935
2014Y	NSTAR Electric Company	Eversource Energy	145,330	23,629,876
2015Y	NSTAR Electric Company	Eversource Energy	158,528	23,856,657
2016Y	NSTAR Electric Company	Eversource Energy	162,571	23,127,763
2017Y	NSTAR Electric Company	Eversource Energy	142,167	21,529,739
2013Y	Public Service Company of New Hampshire	Eversource Energy	108,755	9,118,546

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2014Y	Public Service Company of New Hampshire	Eversource Energy	95,348	8,595,895
2015Y	Public Service Company of New Hampshire	Eversource Energy	95,309	8,441,532
2016Y	Public Service Company of New Hampshire	Eversource Energy	89,542	8,388,691
2017Y	Public Service Company of New Hampshire	Eversource Energy	87,033	8,116,389
2013Y	Western Massachusetts Electric Company	Eversource Energy	48,971	3,724,299
2014Y	Western Massachusetts Electric Company	Eversource Energy	43,567	3,610,361
2015Y	Western Massachusetts Electric Company	Eversource Energy	40,171	3,601,321
2016Y	Western Massachusetts Electric Company	Eversource Energy	41,313	3,706,255
2017Y	Western Massachusetts Electric Company	Eversource Energy	35,601	3,689,391
2013Y	Atlantic City Electric Company	Exelon Corporation	62,287	11,562,281
2014Y	Atlantic City Electric Company	Exelon Corporation	63,970	11,658,993
2015Y	Atlantic City Electric Company	Exelon Corporation	63,611	11,225,247
2016Y	Atlantic City Electric Company	Exelon Corporation	92,346	10,723,259
2017Y	Atlantic City Electric Company	Exelon Corporation	79,824	9,822,917
2013Y	Baltimore Gas and Electric Company	Exelon Corporation	164,361	30,767,778
2014Y	Baltimore Gas and Electric Company	Exelon Corporation	181,561	30,562,078
2015Y	Baltimore Gas and Electric Company	Exelon Corporation	190,837	30,304,293
2016Y	Baltimore Gas and Electric Company	Exelon Corporation	190,297	30,019,586
2017Y	Baltimore Gas and Electric Company	Exelon Corporation	193,448	28,970,770
2013Y	Commonwealth Edison Company	Exelon Corporation	504,290	93,089,440
2014Y	Commonwealth Edison Company	Exelon Corporation	426,075	90,578,581
2015Y	Commonwealth Edison Company	Exelon Corporation	458,371	87,297,520
2016Y	Commonwealth Edison Company	Exelon Corporation	488,644	89,608,490
2017Y	Commonwealth Edison Company	Exelon Corporation	470,618	87,568,519

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Delmarva Power & Light Company	Exelon Corporation	69,461	12,817,180
2014Y	Delmarva Power & Light Company	Exelon Corporation	64,650	12,782,957
2015Y	Delmarva Power & Light Company	Exelon Corporation	69,386	12,805,844
2016Y	Delmarva Power & Light Company	Exelon Corporation	100,113	12,486,406
2017Y	Delmarva Power & Light Company	Exelon Corporation	88,600	12,222,536
2013Y	PECO Energy Company	Exelon Corporation	170,320	38,044,130
2014Y	PECO Energy Company	Exelon Corporation	168,781	37,681,485
2015Y	PECO Energy Company	Exelon Corporation	173,274	38,124,845
2016Y	PECO Energy Company	Exelon Corporation	187,942	37,940,620
2017Y	PECO Energy Company	Exelon Corporation	192,458	37,233,657
2013Y	Potomac Electric Power Company	Exelon Corporation	139,967	25,807,813
2014Y	Potomac Electric Power Company	Exelon Corporation	132,079	25,750,549
2015Y	Potomac Electric Power Company	Exelon Corporation	134,609	25,987,432
2016Y	Potomac Electric Power Company	Exelon Corporation	183,061	26,114,290
2017Y	Potomac Electric Power Company	Exelon Corporation	156,730	24,855,893
2013Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	-1,743	18,712,244
2014Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	68,702	18,733,302
2015Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	24,691	18,501,986
2016Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	79,371	18,817,928
2017Y	Cleveland Electric Illuminating Company	FirstEnergy Corp.	58,920	18,290,574
2013Y	Jersey Central Power & Light Company	FirstEnergy Corp.	12,105	21,836,806
2014Y	Jersey Central Power & Light Company	FirstEnergy Corp.	156,696	21,846,258
2015Y	Jersey Central Power & Light Company	FirstEnergy Corp.	92,158	21,332,986
2016Y	Jersey Central Power & Light Company	FirstEnergy Corp.	111,549	21,250,880

Notes: NA data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2017Y	Jersey Central Power & Light Company	FirstEnergy Corp.	112,628	20,535,764
2013Y	Metropolitan Edison Company	FirstEnergy Corp.	1,357	14,226,643
2014Y	Metropolitan Edison Company	FirstEnergy Corp.	75,295	14,276,774
2015Y	Metropolitan Edison Company	FirstEnergy Corp.	49,373	14,291,940
2016Y	Metropolitan Edison Company	FirstEnergy Corp.	58,329	14,143,059
2017Y	Metropolitan Edison Company	FirstEnergy Corp.	48,959	13,777,426
2013Y	Monongahela Power Company	FirstEnergy Corp.	3,568	10,816,852
2014Y	Monongahela Power Company	FirstEnergy Corp.	103,251	17,361,198
2015Y	Monongahela Power Company	FirstEnergy Corp.	49,864	16,163,874
2016Y	Monongahela Power Company	FirstEnergy Corp.	45,148	17,434,322
2017Y	Monongahela Power Company	FirstEnergy Corp.	88,527	17,497,075
2013Y	Ohio Edison Company	FirstEnergy Corp.	-17,423	27,059,942
2014Y	Ohio Edison Company	FirstEnergy Corp.	117,580	27,819,394
2015Y	Ohio Edison Company	FirstEnergy Corp.	70,226	27,056,153
2016Y	Ohio Edison Company	FirstEnergy Corp.	99,745	26,451,421
2017Y	Ohio Edison Company	FirstEnergy Corp.	74,961	23,977,058
2013Y	Pennsylvania Electric Company	FirstEnergy Corp.	-3,745	15,484,578
2014Y	Pennsylvania Electric Company	FirstEnergy Corp.	82,436	14,771,582
2015Y	Pennsylvania Electric Company	FirstEnergy Corp.	57,647	14,473,442
2016Y	Pennsylvania Electric Company	FirstEnergy Corp.	60,926	14,386,263
2017Y	Pennsylvania Electric Company	FirstEnergy Corp.	48,742	14,363,454
2013Y	Pennsylvania Power Company	FirstEnergy Corp.	-2,351	4,567,609
2014Y	Pennsylvania Power Company	FirstEnergy Corp.	20,237	4,714,488
2015Y	Pennsylvania Power Company	FirstEnergy Corp.	13,033	4,526,159

Notes: NA data generally represents a merger with another operating company within the same parent/holding company.
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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2016Y	Pennsylvania Power Company	FirstEnergy Corp.	16,950	4,615,081
2017Y	Pennsylvania Power Company	FirstEnergy Corp.	15,467	4,633,922
2013Y	Potomac Edison Company	FirstEnergy Corp.	8,558	11,862,840
2014Y	Potomac Edison Company	FirstEnergy Corp.	43,830	11,898,341
2015Y	Potomac Edison Company	FirstEnergy Corp.	22,303	11,823,082
2016Y	Potomac Edison Company	FirstEnergy Corp.	26,469	11,554,451
2017Y	Potomac Edison Company	FirstEnergy Corp.	30,899	11,322,812
2013Y	Toledo Edison Company	FirstEnergy Corp.	3,625	11,956,365
2014Y	Toledo Edison Company	FirstEnergy Corp.	46,524	11,873,197
2015Y	Toledo Edison Company	FirstEnergy Corp.	19,874	11,779,382
2016Y	Toledo Edison Company	FirstEnergy Corp.	34,416	12,079,562
2017Y	Toledo Edison Company	FirstEnergy Corp.	24,262	10,856,745
2013Y	West Penn Power Company	FirstEnergy Corp.	27,122	20,052,177
2014Y	West Penn Power Company	FirstEnergy Corp.	91,601	20,291,236
2015Y	West Penn Power Company	FirstEnergy Corp.	50,621	20,083,013
2016Y	West Penn Power Company	FirstEnergy Corp.	58,699	19,998,876
2017Y	West Penn Power Company	FirstEnergy Corp.	63,625	19,616,843
2013Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	86,177	2,761,676
2014Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	82,731	2,623,309
2015Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	68,770	2,608,207
2016Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	68,939	2,684,357
2017Y	Central Hudson Gas & Electric Corporation	Fortis Inc.	70,713	2,602,989
2013Y	Tucson Electric Power Company	Fortis Inc.	93,257	13,025,375
2014Y	Tucson Electric Power Company	Fortis Inc.	102,590	13,311,011

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2015Y	Tucson Electric Power Company	Fortis Inc.	106,428	14,279,396
2016Y	Tucson Electric Power Company	Fortis Inc.	111,249	13,718,397
2017Y	Tucson Electric Power Company	Fortis Inc.	115,191	13,442,595
2013Y	UNS Electric, Inc.	Fortis Inc.	11,529	2,230,041
2014Y	UNS Electric, Inc.	Fortis Inc.	9,469	1,982,714
2015Y	UNS Electric, Inc.	Fortis Inc.	9,472	1,746,289
2016Y	UNS Electric, Inc.	Fortis Inc.	11,116	1,762,853
2017Y	UNS Electric, Inc.	Fortis Inc.	10,205	1,916,799
2013Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	155,758	21,683,329
2014Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	161,898	22,472,307
2015Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	160,805	20,796,733
2016Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	168,097	21,433,876
2017Y	Kansas City Power & Light Company	Great Plains Energy Incorporated	156,680	21,322,723
2013Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	74,537	8,413,828
2014Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	74,615	8,511,766
2015Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	79,679	8,385,574
2016Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	81,446	8,465,650
2017Y	KCP&L Greater Missouri Operations Company	Great Plains Energy Incorporated	85,028	8,386,821
2013Y	Central Maine Power Company	Iberdrola, S.A.	49,541	603,824
2014Y	Central Maine Power Company	Iberdrola, S.A.	60,889	590,204
2015Y	Central Maine Power Company	Iberdrola, S.A.	66,961	600,705
2016Y	Central Maine Power Company	Iberdrola, S.A.	55,417	599,743
2017Y	Central Maine Power Company	Iberdrola, S.A.	46,507	172,595
2013Y	Maine Electric Power Company, Inc.	Iberdrola, S.A.	99	NA

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2014Y	Maine Electric Power Company, Inc.	Iberdrola, S.A.	167	NA
2015Y	Maine Electric Power Company, Inc.	Iberdrola, S.A.	241	NA
2016Y	Maine Electric Power Company, Inc.	Iberdrola, S.A.	329	NA
2017Y	Maine Electric Power Company, Inc.	Iberdrola, S.A.	342	NA
2013Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	118,188	19,115,201
2014Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	115,355	18,690,994
2015Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	111,757	17,887,199
2016Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	96,599	17,455,920
2017Y	New York State Electric & Gas Corporation	Iberdrola, S.A.	88,542	16,633,428
2013Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	72,913	9,024,632
2014Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	55,068	7,970,527
2015Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	54,907	7,319,681
2016Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	40,803	7,365,999
2017Y	Rochester Gas and Electric Corporation	Iberdrola, S.A.	39,870	7,216,272
2013Y	United Illuminating Company	Iberdrola, S.A.	49,291	5,422,427
2014Y	United Illuminating Company	Iberdrola, S.A.	32,927	5,327,395
2015Y	United Illuminating Company	Iberdrola, S.A.	65,125	5,450,238
2016Y	United Illuminating Company	Iberdrola, S.A.	31,949	5,334,351
2017Y	United Illuminating Company	Iberdrola, S.A.	25,249	5,093,904
2013Y	Idaho Power Co.	IDACORP, Inc.	151,020	16,302,681
2014Y	Idaho Power Co.	IDACORP, Inc.	155,933	16,312,786
2015Y	Idaho Power Co.	IDACORP, Inc.	140,370	15,518,629
2016Y	Idaho Power Co.	IDACORP, Inc.	146,887	15,381,629
2017Y	Idaho Power Co.	IDACORP, Inc.	142,691	16,706,603

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Kentucky Utilities Company	LKE	111,709	21,629,993
2014Y	Kentucky Utilities Company	LKE	99,819	21,986,858
2015Y	Kentucky Utilities Company	LKE	117,399	21,810,131
2016Y	Kentucky Utilities Company	LKE	108,557	21,437,963
2017Y	Kentucky Utilities Company	LKE	109,507	20,497,797
2013Y	Louisville Gas and Electric Company	LKE	84,240	14,478,316
2014Y	Louisville Gas and Electric Company	LKE	79,526	15,373,731
2015Y	Louisville Gas and Electric Company	LKE	81,077	13,502,213
2016Y	Louisville Gas and Electric Company	LKE	79,109	13,156,493
2017Y	Louisville Gas and Electric Company	LKE	76,486	13,133,134
2013Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	20,293	3,195,882
2014Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	20,256	3,331,202
2015Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	21,966	3,316,058
2016Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	24,873	3,303,555
2017Y	MDU Resources Group, Inc.	MDU Resources Group, Inc.	26,686	3,346,441
2013Y	Madison Gas and Electric Company	MGE Energy, Inc.	38,732	3,557,446
2014Y	Madison Gas and Electric Company	MGE Energy, Inc.	32,876	3,514,574
2015Y	Madison Gas and Electric Company	MGE Energy, Inc.	34,373	3,545,081
2016Y	Madison Gas and Electric Company	MGE Energy, Inc.	34,540	3,741,999
2017Y	Madison Gas and Electric Company	MGE Energy, Inc.	33,811	3,584,998
2013Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	3,130	99,446
2014Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	3,200	99,841
2015Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	2,727	99,902
2016Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	2,513	95,751

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2017Y	Mt. Carmel Public Utility Company	Mt. Carmel Public Utility Company	2,829	95,101
2013Y	Massachusetts Electric Company	National Grid plc	228,950	11,080,137
2014Y	Massachusetts Electric Company	National Grid plc	266,932	10,608,963
2015Y	Massachusetts Electric Company	National Grid plc	273,313	8,699,117
2016Y	Massachusetts Electric Company	National Grid plc	294,710	6,486,573
2017Y	Massachusetts Electric Company	National Grid plc	289,485	6,427,679
2013Y	Narragansett Electric Company	National Grid plc	85,931	5,133,864
2014Y	Narragansett Electric Company	National Grid plc	89,338	5,006,934
2015Y	Narragansett Electric Company	National Grid plc	90,146	4,492,267
2016Y	Narragansett Electric Company	National Grid plc	106,125	3,954,763
2017Y	Narragansett Electric Company	National Grid plc	118,556	3,868,162
2013Y	National Grid Generation, LLC	National Grid plc	66,239	4,823,499
2014Y	National Grid Generation, LLC	National Grid plc	68,310	4,558,386
2015Y	National Grid Generation, LLC	National Grid plc	70,258	5,050,928
2016Y	National Grid Generation, LLC	National Grid plc	71,798	4,561,590
2017Y	National Grid Generation, LLC	National Grid plc	61,006	3,213,471
2013Y	New England Power Company	National Grid plc	36,234	570,917
2014Y	New England Power Company	National Grid plc	52,570	565,418
2015Y	New England Power Company	National Grid plc	50,321	566,430
2016Y	New England Power Company	National Grid plc	49,527	314,990
2017Y	New England Power Company	National Grid plc	53,721	239,434
2013Y	Niagara Mohawk Power Corporation	National Grid plc	479,781	16,348,792
2014Y	Niagara Mohawk Power Corporation	National Grid plc	397,932	13,620,478
2015Y	Niagara Mohawk Power Corporation	National Grid plc	365,359	13,464,032

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2016Y	Niagara Mohawk Power Corporation	National Grid plc	370,611	13,600,814
2017Y	Niagara Mohawk Power Corporation	National Grid plc	371,233	13,190,657
2013Y	Florida Power & Light Company	NextEra Energy, Inc.	407,062	107,373,794
2014Y	Florida Power & Light Company	NextEra Energy, Inc.	354,091	112,929,729
2015Y	Florida Power & Light Company	NextEra Energy, Inc.	347,310	119,405,262
2016Y	Florida Power & Light Company	NextEra Energy, Inc.	335,632	119,279,691
2017Y	Florida Power & Light Company	NextEra Energy, Inc.	443,699	117,873,183
2013Y	Northern Indiana Public Service Company	NiSource Inc.	183,441	17,468,011
2014Y	Northern Indiana Public Service Company	NiSource Inc.	202,804	18,186,288
2015Y	Northern Indiana Public Service Company	NiSource Inc.	211,596	16,758,427
2016Y	Northern Indiana Public Service Company	NiSource Inc.	220,923	16,831,194
2017Y	Northern Indiana Public Service Company	NiSource Inc.	221,425	16,725,564
2013Y	NorthWestern Corporation	NorthWestern Corporation	64,655	9,519,519
2014Y	NorthWestern Corporation	NorthWestern Corporation	64,785	10,006,908
2015Y	NorthWestern Corporation	NorthWestern Corporation	76,796	11,027,880
2016Y	NorthWestern Corporation	NorthWestern Corporation	78,502	9,037,846
2017Y	NorthWestern Corporation	NorthWestern Corporation	82,653	8,924,244
2013Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	111,759	28,578,159
2014Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	118,327	30,234,927
2015Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	133,349	28,867,056
2016Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	141,320	29,762,475
2017Y	Oklahoma Gas and Electric Company	OGE Energy Corp.	137,559	28,111,471
2013Y	Otter Tail Power Company	Otter Tail Corporation	39,523	6,219,751
2014Y	Otter Tail Power Company	Otter Tail Corporation	41,787	5,470,896

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2015Y	Otter Tail Power Company	Otter Tail Corporation	42,025	4,709,464
2016Y	Otter Tail Power Company	Otter Tail Corporation	44,695	4,955,630
2017Y	Otter Tail Power Company	Otter Tail Corporation	45,577	5,040,591
2013Y	Pacific Gas and Electric Company	PG&E Corporation	978,665	88,322,913
2014Y	Pacific Gas and Electric Company	PG&E Corporation	1,018,104	88,189,685
2015Y	Pacific Gas and Electric Company	PG&E Corporation	1,052,736	87,981,023
2016Y	Pacific Gas and Electric Company	PG&E Corporation	1,329,265	85,067,412
2017Y	Pacific Gas and Electric Company	PG&E Corporation	1,178,530	88,175,650
2013Y	Arizona Public Service Company	Pinnacle West Capital Corporation	213,793	32,087,545
2014Y	Arizona Public Service Company	Pinnacle West Capital Corporation	192,118	32,951,388
2015Y	Arizona Public Service Company	Pinnacle West Capital Corporation	167,749	33,628,854
2016Y	Arizona Public Service Company	Pinnacle West Capital Corporation	186,773	31,928,046
2017Y	Arizona Public Service Company	Pinnacle West Capital Corporation	183,317	30,910,170
2013Y	Public Service Company of New Mexico	PNM Resources, Inc.	135,149	12,001,980
2014Y	Public Service Company of New Mexico	PNM Resources, Inc.	131,296	11,836,387
2015Y	Public Service Company of New Mexico	PNM Resources, Inc.	140,392	11,541,512
2016Y	Public Service Company of New Mexico	PNM Resources, Inc.	149,173	12,280,191
2017Y	Public Service Company of New Mexico	PNM Resources, Inc.	151,950	12,454,143
2013Y	Portland General Electric Company	Portland General Electric Company	157,719	21,226,863
2014Y	Portland General Electric Company	Portland General Electric Company	161,772	21,080,082
2015Y	Portland General Electric Company	Portland General Electric Company	171,798	20,859,230
2016Y	Portland General Electric Company	Portland General Electric Company	176,471	21,247,271
2017Y	Portland General Electric Company	Portland General Electric Company	190,763	21,328,945
2013Y	PPL Electric Utilities Corporation	PPL Corporation	155,674	37,712,878

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2014Y	PPL Electric Utilities Corporation	PPL Corporation	151,567	38,005,667
2015Y	PPL Electric Utilities Corporation	PPL Corporation	194,342	37,967,738
2016Y	PPL Electric Utilities Corporation	PPL Corporation	201,744	37,618,811
2017Y	PPL Electric Utilities Corporation	PPL Corporation	188,465	36,939,991
2013Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	198,397	44,103,026
2014Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	156,848	42,728,622
2015Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	200,581	43,533,905
2016Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	192,577	42,288,312
2017Y	Public Service Electric and Gas Company	Public Service Enterprise Group Incorporated	201,932	40,894,038
2013Y	Puget Sound Energy, Inc.	Puget Holdings LLC	109,153	26,265,216
2014Y	Puget Sound Energy, Inc.	Puget Holdings LLC	108,863	21,968,767
2015Y	Puget Sound Energy, Inc.	Puget Holdings LLC	110,378	28,183,148
2016Y	Puget Sound Energy, Inc.	Puget Holdings LLC	120,326	29,143,765
2017Y	Puget Sound Energy, Inc.	Puget Holdings LLC	128,643	27,227,367
2013Y	South Carolina Electric & Gas Co.	SCANA Corporation	163,369	22,326,578
2014Y	South Carolina Electric & Gas Co.	SCANA Corporation	169,415	23,332,942
2015Y	South Carolina Electric & Gas Co.	SCANA Corporation	166,943	23,114,845
2016Y	South Carolina Electric & Gas Co.	SCANA Corporation	191,727	23,471,194
2017Y	South Carolina Electric & Gas Co.	SCANA Corporation	166,141	22,879,069
2013Y	South Carolina Generating Company, Inc.	SCANA Corporation	5,546	3,343,690
2014Y	South Carolina Generating Company, Inc.	SCANA Corporation	5,549	3,702,495
2015Y	South Carolina Generating Company, Inc.	SCANA Corporation	5,599	3,734,928
2016Y	South Carolina Generating Company, Inc.	SCANA Corporation	5,858	2,991,906
2017Y	South Carolina Generating Company, Inc.	SCANA Corporation	4,998	2,606,561

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2013Y	Oncor Electric Delivery Company LLC	Sempra Energy	344,543	112,312,279
2014Y	Oncor Electric Delivery Company LLC	Sempra Energy	351,557	114,905,829
2015Y	Oncor Electric Delivery Company LLC	Sempra Energy	357,751	116,594,625
2016Y	Oncor Electric Delivery Company LLC	Sempra Energy	359,066	115,791,379
2017Y	Oncor Electric Delivery Company LLC	Sempra Energy	376,080	117,017,075
2013Y	San Diego Gas & Electric Co.	Sempra Energy	628,738	32,916,382
2014Y	San Diego Gas & Electric Co.	Sempra Energy	590,458	30,952,957
2015Y	San Diego Gas & Electric Co.	Sempra Energy	455,443	33,132,033
2016Y	San Diego Gas & Electric Co.	Sempra Energy	400,172	29,443,890
2017Y	San Diego Gas & Electric Co.	Sempra Energy	425,629	29,300,970
2013Y	Alabama Power Company	Southern Company	351,531	66,309,626
2014Y	Alabama Power Company	Southern Company	360,311	67,155,314
2015Y	Alabama Power Company	Southern Company	413,430	63,847,336
2016Y	Alabama Power Company	Southern Company	387,122	63,873,423
2017Y	Alabama Power Company	Southern Company	426,571	63,290,561
2013Y	Georgia Power Company	Southern Company	445,491	84,726,779
2014Y	Georgia Power Company	Southern Company	448,174	89,190,865
2015Y	Georgia Power Company	Southern Company	463,892	87,859,128
2016Y	Georgia Power Company	Southern Company	472,842	89,686,468
2017Y	Georgia Power Company	Southern Company	410,706	86,478,222
2013Y	Gulf Power Company	Southern Company	80,099	14,909,545
2014Y	Gulf Power Company	Southern Company	81,740	16,028,868
2015Y	Gulf Power Company	Southern Company	91,589	14,031,937
2016Y	Gulf Power Company	Southern Company	85,198	14,616,769

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Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2017Y	Gulf Power Company	Southern Company	92,689	15,445,454
2013Y	Mississippi Power Company	Southern Company	83,327	14,591,834
2014Y	Mississippi Power Company	Southern Company	88,045	17,059,643
2015Y	Mississippi Power Company	Southern Company	95,356	16,487,788
2016Y	Mississippi Power Company	Southern Company	100,982	14,866,485
2017Y	Mississippi Power Company	Southern Company	87,559	15,283,882
2013Y	Southern Electric Generating Company	Southern Company	8,815	2,107,334
2014Y	Southern Electric Generating Company	Southern Company	8,003	2,084,739
2015Y	Southern Electric Generating Company	Southern Company	7,073	1,277,061
2016Y	Southern Electric Generating Company	Southern Company	6,022	394,540
2017Y	Southern Electric Generating Company	Southern Company	5,032	1,406,811
2013Y	UGI Utilities, Inc.	UGI Corporation	6,228	1,000,701
2014Y	UGI Utilities, Inc.	UGI Corporation	7,295	975,771
2015Y	UGI Utilities, Inc.	UGI Corporation	8,848	990,384
2016Y	UGI Utilities, Inc.	UGI Corporation	5,745	977,118
2017Y	UGI Utilities, Inc.	UGI Corporation	8,538	956,654
2013Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	4,960	505,418
2014Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	5,455	533,929
2015Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	5,397	460,811
2016Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	5,546	444,498
2017Y	Fitchburg Gas and Electric Light Company	Unitil Corporation	5,928	455,496
2013Y	Unitil Energy Systems, Inc.	Unitil Corporation	8,527	1,234,354
2014Y	Unitil Energy Systems, Inc.	Unitil Corporation	8,508	1,230,055
2015Y	Unitil Energy Systems, Inc.	Unitil Corporation	9,125	1,229,879

Notes: NA data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2016Y	Unitil Energy Systems, Inc.	Unitil Corporation	9,606	1,203,404
2017Y	Unitil Energy Systems, Inc.	Unitil Corporation	9,992	1,215,797
2013Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	39,735	5,993,477
2014Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	39,876	6,240,584
2015Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	36,736	5,795,918
2016Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	38,839	5,610,259
2017Y	Southern Indiana Gas and Electric Company, Inc.	Vectren Corporation	42,948	5,220,819
2013Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	193,856	32,555,334
2014Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	165,748	32,942,828
2015Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	144,780	35,818,700
2016Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	134,459	35,894,209
2017Y	Wisconsin Electric Power Company	WEC Energy Group, Inc.	130,505	34,951,750
2013Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	92,912	16,129,893
2014Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	74,336	14,557,949
2015Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	81,249	14,839,077
2016Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	115,635	14,636,889
2017Y	Wisconsin Public Service Corporation	WEC Energy Group, Inc.	76,869	14,814,995
2013Y	Kansas Gas and Electric Company	Westar Energy, Inc.	103,866	10,605,055
2014Y	Kansas Gas and Electric Company	Westar Energy, Inc.	99,352	10,800,465
2015Y	Kansas Gas and Electric Company	Westar Energy, Inc.	106,387	10,761,626
2016Y	Kansas Gas and Electric Company	Westar Energy, Inc.	102,900	11,297,034
2017Y	Kansas Gas and Electric Company	Westar Energy, Inc.	99,142	10,847,878
2013Y	Westar Energy (KPL)	Westar Energy, Inc.	97,746	17,484,374
2014Y	Westar Energy (KPL)	Westar Energy, Inc.	107,569	18,531,716

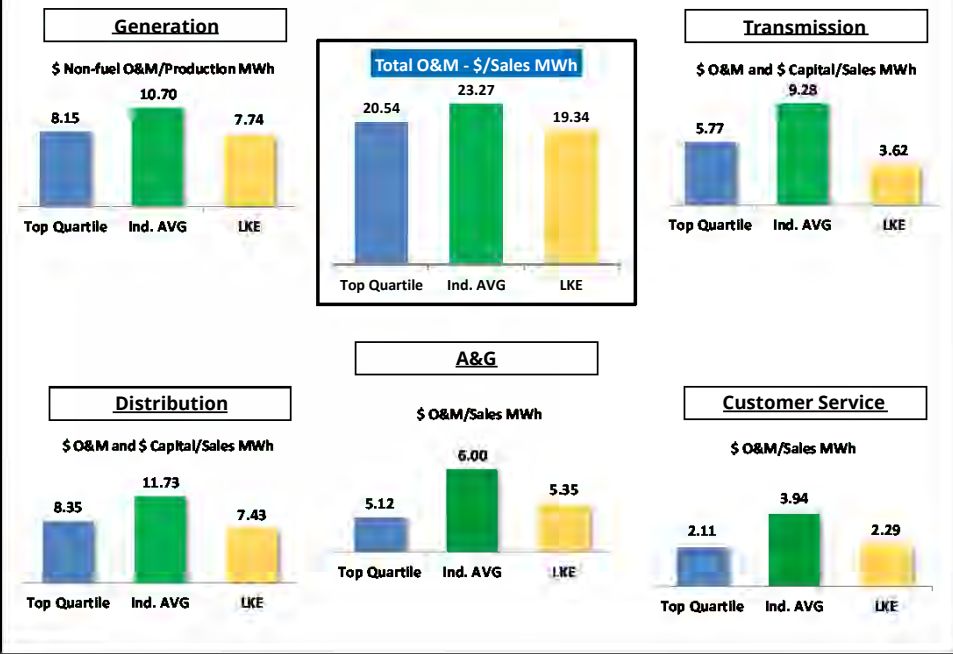
Notes: NA data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2015Y	Westar Energy (KPL)	Westar Energy, Inc.	114,098	17,180,535
2016Y	Westar Energy (KPL)	Westar Energy, Inc.	107,220	16,555,817
2017Y	Westar Energy (KPL)	Westar Energy, Inc.	100,252	18,790,662
2013Y	Westar Generating, Inc.	Westar Energy, Inc.	992	735,166
2014Y	Westar Generating, Inc.	Westar Energy, Inc.	994	608,351
2015Y	Westar Generating, Inc.	Westar Energy, Inc.	1,259	690,492
2016Y	Westar Generating, Inc.	Westar Energy, Inc.	878	945,870
2017Y	Westar Generating, Inc.	Westar Energy, Inc.	940	983,635
2013Y	Wisconsin River Power Company	Wisconsin River Power Company	1,348	20
2014Y	Wisconsin River Power Company	Wisconsin River Power Company	1,342	222,969
2015Y	Wisconsin River Power Company	Wisconsin River Power Company	1,289	204,110
2016Y	Wisconsin River Power Company	Wisconsin River Power Company	1,120	248,314
2017Y	Wisconsin River Power Company	Wisconsin River Power Company	1,038	44,527
2013Y	Northern States Power Company - MN	Xcel Energy Inc.	254,713	37,474,524
2014Y	Northern States Power Company - MN	Xcel Energy Inc.	257,214	39,129,144
2015Y	Northern States Power Company - MN	Xcel Energy Inc.	263,079	39,484,126
2016Y	Northern States Power Company - MN	Xcel Energy Inc.	265,532	41,519,021
2017Y	Northern States Power Company - MN	Xcel Energy Inc.	269,990	40,720,489
2013Y	Northern States Power Company - WI	Xcel Energy Inc.	41,603	6,562,368
2014Y	Northern States Power Company - WI	Xcel Energy Inc.	41,794	6,750,889
2015Y	Northern States Power Company - WI	Xcel Energy Inc.	44,911	6,647,300
2016Y	Northern States Power Company - WI	Xcel Energy Inc.	41,367	6,641,542
2017Y	Northern States Power Company - WI	Xcel Energy Inc.	44,065	6,727,740
2013Y	Public Service Company of Colorado	Xcel Energy Inc.	167,001	33,450,187

Notes: NA data generally represents a merger with another operating company within the same parent/holding company.
 Certain LKE adjustments were made to reclass labor and IT software costs from A&G to lines of business.

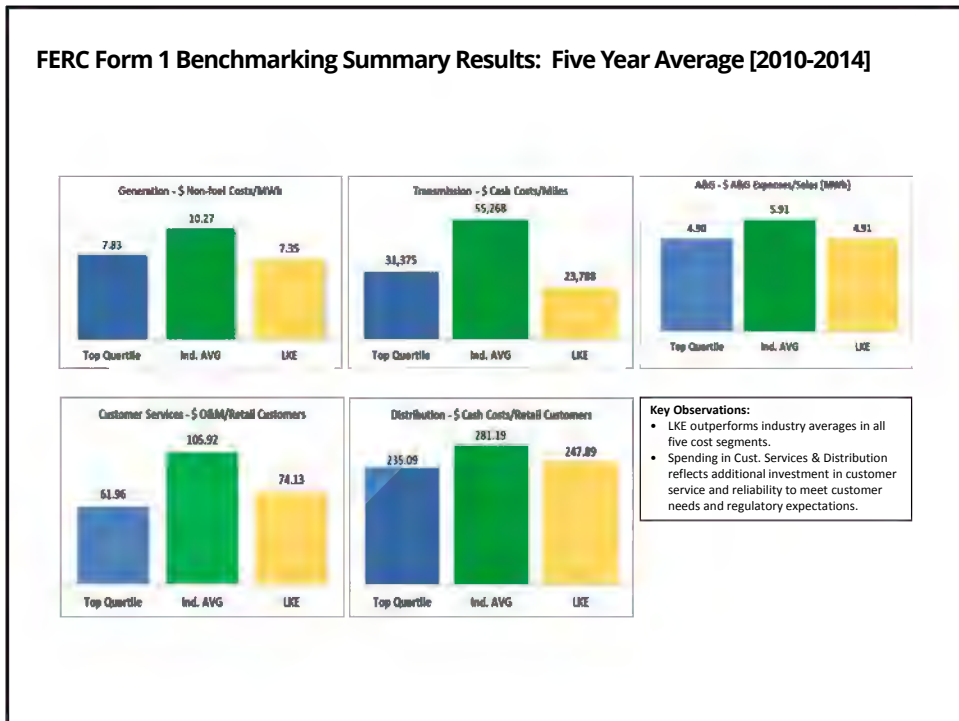
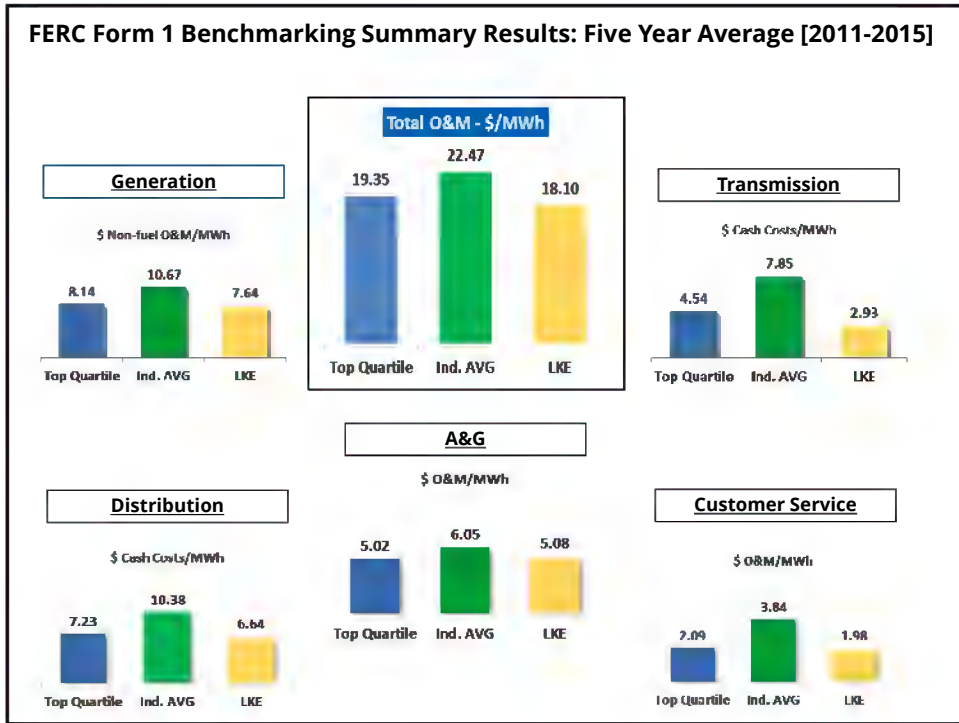
Year	Company Name	Ultimate Parent Company Name	Total Administrative & General O&M Expense (\$000)	Total Sales of Electricity Volume (MWh)
2014Y	Public Service Company of Colorado	Xcel Energy Inc.	163,014	32,498,488
2015Y	Public Service Company of Colorado	Xcel Energy Inc.	166,379	32,396,474
2016Y	Public Service Company of Colorado	Xcel Energy Inc.	165,928	34,472,722
2017Y	Public Service Company of Colorado	Xcel Energy Inc.	177,229	36,486,396
2013Y	Southwestern Public Service Company	Xcel Energy Inc.	96,828	28,292,788
2014Y	Southwestern Public Service Company	Xcel Energy Inc.	100,214	28,265,391
2015Y	Southwestern Public Service Company	Xcel Energy Inc.	107,892	28,414,831
2016Y	Southwestern Public Service Company	Xcel Energy Inc.	101,761	28,383,129
2017Y	Southwestern Public Service Company	Xcel Energy Inc.	105,746	27,124,064
		Total	<hr/> 89,285,764	<hr/> 14,881,658,340

FERC Form 1 Benchmarking Summary Results: Five Year Average [2013-2017]



FERC Form 1 Benchmarking Summary Results: Five Year Average [2012-2016]





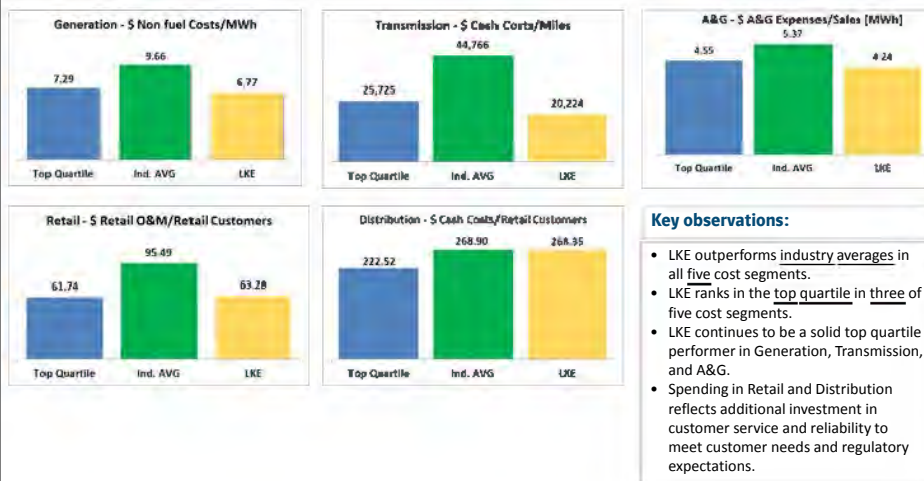
FERC Form 1 Benchmarking Summary Results: Five Year Average [2009-2013]



Key Observations:

- LKE outperforms industry averages in all five cost segments.
- LKE ranks in the top quartile in three of five cost segments.
- Spending in Customer Services and Distribution reflects additional investment in customer service and reliability to meet customer needs and regulatory expectations.

FERC Form 1 Benchmarking Summary Results: Five Year Average [2008-2012]



Key observations:

- LKE outperforms industry averages in all five cost segments.
- LKE ranks in the top quartile in three of five cost segments.
- LKE continues to be a solid top quartile performer in Generation, Transmission, and A&G.
- Spending in Retail and Distribution reflects additional investment in customer service and reliability to meet customer needs and regulatory expectations.

FERC Form 1 Benchmarking Summary Results: Five Year Average [2007-2011]

Utility Area	Metric Description	Metric	LKE Ranking	Last Year's Results (2006 - 2010)	
Generation	Non fuel O&M/MWH of Production	\$6.18	5th - top quartile	\$5.71	5th - top quartile
Transmission	Cash Cost/Transmission Mile	\$18,630	7th - top quartile	\$16,491	7th - top quartile
Distribution	Cash Cost/Customer	\$237.18	28th - second quartile	\$218.79	24th -second quartile
Retail	O&M Cost/Customer	\$57.93	15th - top quartile	\$52.44	16th - top quartile
Corporate A&G	A&G Cost/MWH of Sales	\$3.87	8th - top quartile	\$3.57	8th - top quartile

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FERC Form 1 Benchmarking Summary Results: Five Year Average [2006-2010]

Utility Area	Metric Description	Metric	LKE Ranking	Last Year's Results [2005 - 2009]	
Generation	Non fuel O&M/MWH of Production	\$5.71	5th - Top Quartile	\$5.22	5th - Top Quartile
Transmission	Cash Cost/Transmission Mile	\$16,491	7th - Top Quartile	\$11,549	7th - Top Quartile
Distribution	Cash Cost/Customer	\$218.79	24th - Second Quartile	\$199.25	16th - Top Quartile
Retail	O&M Cost/Customer	\$52.44	16th - Top Quartile	\$46.74	16th - Top Quartile
Corporate A&G	A&G Cost/MWH of Sales	\$3.57	8th - Top Quartile	\$3.39	8th - Top Quartile

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FERC Form 1 Benchmarking Summary Results: Five Year Average [2005-2009]

Utility Area	Metric Description	Metric	E.ON U.S. Ranking	Last Year's Results (2004 - 2008)	
Generation	Non fuel O&M/MWh of Production	\$5.22	5th - Top Decile	\$4.78	4th - Top Decile
Transmission	Cash Cost/Transmission Mile	\$11,549	7th - Top Quartile	\$10,702	6th - Top Decile
Distribution	Cash Cost/Customer	\$199.25	16th - Top Quartile	\$189	16th - Top Quartile
Retail	O&M Cost/Customer	\$46.74	16th - Top Quartile	\$41.51	11th - Top Quartile
Corporate A&G	A&G Cost/MWh of Sales	\$3.39	8th - Top Quartile	\$3.23	7th - Top Decile

FERC Form 1 Benchmarking Summary Results: Five Year Average [2004-2008]

Utility Area	Metric/E.ON U.S. Performance	E.ON U.S. Rank Out of Holding Companies
Generation	Non-fuel O&M/MWh of Production \$4.78	4th — Top Decile
Transmission	Cash Cost/Transmission Mile \$10,702	6th — Top Decile
Distribution	Cash Cost/Customer \$189 ¹	16th — Top Quartile
Retail	O&M Cost/Customer \$41.51	11th — Second Decile
Corporate A&G	A&G Cost/MWh of Sales \$3.23 ²	7th — Top Decile

¹If E.ON U.S. is not adjusted for CWIP changes over the five year period, our ranking is 8th at \$173.

²If adjusted for \$80m of VDT amortization costs over the five year period, our ranking improves to 5th at \$2.86.

FERC Form 1 Benchmarking Summary Results: Five Year Average [2003-2007]

Utility Area	Metric/E.ON U.S. Performance	E.ON U.S Rank Out of Holding Companies
Generation	Non-fuel O&M/ MWh of Production \$4.50	2nd — Top Decile
Transmission	Cash Cost/ Transmission Mile \$11,439	10th — Second Decile
Distribution	Cash Cost/ Customer \$180 ¹	15th — Top Quartile
Retail	O&M Cost/ Customer \$41.69	13th — Second Decile
Corporate A&G	A&G Cost/ MWh of Sales \$3.35 ²	9th — Second Decile

¹If E.ON U.S. is not adjusted for capital additions (CWIP) over the five year period, our ranking is 1st at \$135.
²If adjusted for \$116m of VDT amortization costs over the five year period, our ranking increases to 6th at \$2.81.

FERC Form 1 Benchmarking Summary Results: Five Year Average [2003-2006]

Utility Area	Metric/E.ON U.S. Performance	E.ON U.S Rank Out of IOU Holding Companies
Generation	Non-fuel O&M/ MWh of Production \$4.37	4th — Top Decile
Transmission	Cash Cost/ Transmission Mile \$11,230	13th — Second Decile
Distribution	Cash Cost/ Customer \$140	2nd — Top Decile
Retail	O&M Cost/ Customer \$41.29	13th — Second Decile
Corporate A&G ¹	A&G Cost/ MWh of Sales \$3.44	12th — Second Decile

¹If adjusted for \$116m of VDT amortization costs over the four year period, our ranking increases to 7th at \$2.77.

FERC Form 1 Benchmarking Summary Results: Four Year Average [2002-2005]

Utility Area	Metric/E.ON U.S. Performance	E.ON U.S Rank Out of IOU Holding Companies
Generation	Non-fuel O&M/ MWh of Production \$4.27	4th — Top Decile
Transmission	Cash Cost/ Transmission Mile \$12,508	19th — Third Decile
Distribution ¹	Cash Cost/ Customer \$141	5th — Top Decile
Retail ²	O&M Cost/ Customer \$42.10	15th — Top Quartile
Corporate A&G ³	A&G Cost/ MWh of Sales \$2.72	6th — Top Decile

¹ E.ON U.S. adjusted +\$6.0M for FERC account coding reclassifications

² E.ON U.S. adjusted +\$8M for FERC account coding reclassifications

³ E.ON U.S. adjusted -\$143M of VDT amortization costs and -\$14M FERC account coding reclassifications

FERC Form 1 Benchmarking Summary Results: Four Year Average [2001-2004]

Utility Area	Metric/LGE Performance	LGE Rank Out of IOU Holding Companies
Generation	Non-fuel O&M/ MWh of Production \$4.16	4th — Top Decile
Transmission	Cash Cost/ Transmission Mile \$11,071	17th — Top Quartile
Distribution ¹	Cash Cost/ Customer \$142	6th — Top Decile
Retail ²	O&M Cost/ Customer \$40	11th — Second Decile
Corporate A&G ³	A&G Cost/ MWh of Sales \$2.77	8th — Second Decile

¹ LGE adjusted -\$25M for Storm costs and +6.0M for FERC account coding reclassifications

² LGE adjusted +\$8M for FERC account coding reclassifications

³ LGE adjusted -\$129M of VDT amortization costs and -\$14M FERC account coding reclassifications

FERC Form 1 Benchmarking Summary Results: Four Year Average [2000-2003]

Utility Area	Metric/LGE Performance	LGE Rank Out of IOU Holding Companies
Generation	Non-fuel O&M/ MWH of Production \$4.12	4th — Top Decile
Transmission	Cash Cost/ Transmission Mile \$10,258	14th — Top Quartile
Distribution ¹	Cash Cost/ Customer \$149	5th — Top Decile
Retail ²	O&M Cost/ Customer \$41	12th — Second Decile
Corporate A&G ³	A&G Cost/ MWh of Sales \$2.62	7th — Top Decile

¹ LGE adjusted -\$9.5M for Ice Storm costs and +6.0M for FERC account coding reclassifications

² LGE adjusted +\$8M for FERC account coding reclassifications

³ LGE adjusted -\$97M of VDT amortization costs and -\$14M FERC account coding reclassifications

List of Vertically Integrated Holding Companies used for Consolidated O&M View for the Past Three Studies

Total O&M Rankings [2013-2017]

Holding Company
NextEra Energy, Inc.
Entergy Corporation
Berkshire Hathaway Inc.
AEP
OGE Energy Corp.
ALLETE, Inc.
Dominion Energy, Inc.
Avista Corporation
LKE
Cleco Partners LP
Duke Energy Corporation
Southern Company
Emera Incorporated
SCANA Corporation
Ameren Corporation
NorthWestern Corporation
Puget Holdings LLC
FirstEnergy Corp.
IDACORP, Inc.
AES Corporation
Xcel Energy Inc.
Great Plains Energy Inc
Iberdrola, S.A.
Otter Tail Corporation
Portland General Electric Co
El Paso Electric Company
Vectren Corporation
Black Hills Corporation
Pinnacle West Capital Corp
MDU Resources Group, Inc.
Algonquin Power & Utilities
Westar Energy, Inc.
NiSource Inc.
Edison International
PNM Resources, Inc.
Sempra Energy
Fortis Inc.
Eversource Energy
PG&E Corporation
Caisse de dépôt et placement du Québec
Consolidated Edison, Inc.

Total O&M Rankings [2012-2016]

Holding Company
NextEra Energy, Inc.
Entergy Corporation
AEP
Berkshire Hathaway Inc.
OGE Energy Corp.
Avista Corporation
ALLETE, Inc.
Cleco Corporate Holdings LLC
LKE
Dominion Energy, Inc.
FirstEnergy Corp.
Southern Company
NorthWestern Corporation
SCANA Corporation
Ameren Corporation
Duke Energy Corporation
Emera Incorporated
Puget Holdings LLC
IDACORP, Inc.
Xcel Energy Inc.
Otter Tail Corporation
Great Plains Energy Inc
Iberdrola, S.A.
AES Corporation
Portland General Electric Co
Black Hills Corporation
MDU Resources Group, Inc.
Algonquin Power & Utilities
El Paso Electric Company
Vectren Corporation
NiSource Inc.
Pinnacle West Capital Corp
Westar Energy, Inc.
Edison International
PNM Resources, Inc.
Fortis Inc.
Sempra Energy
Eversource Energy
PG&E Corporation
Caisse de dépôt et placement du Québec
Consolidated Edison, Inc.

Total O&M Rankings [2011-2015]

Holding Company
NextEra Energy, Inc.
Entergy Corporation
AEP
OGE Energy Corp.
Berkshire Hathaway Inc.
Avista Corporation
Cleco Corporate Holdings
LKE
ALLETE, Inc.
Dominion Resources, Inc.
FirstEnergy Corp.
NorthWestern Corp
SCANA Corporation
Ameren Corporation
Southern Company
Otter Tail Corporation
Emera Incorporated
Duke Energy Corp
Puget Holdings LLC
IDACORP, Inc.
Iberdrola, S.A.
Xcel Energy Inc.
Great Plains Energy Inc.
MDU Resources Group
Portland General Electric
Black Hills Corporation
Empire District Electric
AES Corporation
NiSource Inc.
Vectren Corporation
El Paso Electric Company
Westar Energy, Inc.
Pinnacle West Capital Corp
Fortis Inc.
Edison International
PNM Resources, Inc.
Eversource Energy
Sempra Energy
PG&E Corporation
Caisse de dépôt et placement du Québec
Consolidated Edison, Inc.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 3

Responding Witness: Robert M. Conroy

- Q-3. Refer to the direct testimony of Kent W. Blake, page 17, wherein he states, "the Companies' average residential rates remain some of the lowest in the state."
 - a. Provide support for this assertion.

- A-3. See the response to PSC 2-2.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 4

Responding Witness: David S. Sinclair

II. OVEC

- Q-4. Refer to the direct testimony of David S. Sinclair, page 30, wherein he described "Purchased Power."
- a. Is the Ohio Valley Electric Corporation ("OVEC") purchased power expense considered market economy? If the response is in the negative, why not?
 - b. Compare the OVEC purchase power expense by MWh to the market economy purchased power expense for the past 3 calendar years, the base period and forecasted test period.
 - c. Explain whether continued operation, and subsequent Company ownership, of OVEC is economic.
- A-4.
- a. No. The Companies do not label OVEC purchases as "market economy." The "market economy" label is used to refer to purchases from the markets at large and their many participants, not from long term purchase power agreements into which the Companies have each entered, such as the Companies' agreement with OVEC.
 - b. See the following table. The market economy prices reflect the cost of the Companies' executed market purchases, not the average market price. The Companies purchase market energy when it's less expensive than the marginal energy cost of their own units and when transmission capacity is available to import energy from the market.

<i>\$/MWh</i>	OVEC Energy and Demand	OVEC Energy Only	Market Economy
2015	62.69	28.49	20.27
2016	55.77	26.91	12.62
2017	60.41	24.62	16.99
Base Period	62.59	23.78	36.03
Test Period	75.31	24.86	39.58

- c. OVEC’s continued operation is determined by its board. It is economic for the Companies to continue purchasing energy from OVEC, given the Companies’ obligation to participate through 2040 in the Inter-Company Power Agreement, which was amended in 2010 and approved by the Kentucky Public Service Commission in Case Nos. 2011-00099 and 2011-00100.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 5

Responding Witness: David S. Sinclair

- Q-5. Regarding the Company's ownership interest in the OVEC:
- a. Provide the annual sums of energy, in MWh, that LG&E and KU purchase from OVEC.
 - b. Confirm that LG&E's current ownership interest in OVEC is 5.63% and KU's ownership interest is 2.50%.
 - c. State whether the annual energy purchases from OVEC are contractually required as a firm commitment. If not, describe under what circumstances LG&E and KU are or may be able to modify or eliminate their OVEC purchases.
 - d. Provide the rate at which LG&E and KU purchase power from OVEC under the inter-company power agreement ("ICPA"), both with and without sunk costs.
 - e. Confirm that in 2010, OVEC's owners extended the ICPA to the year 2040.
 - f. Confirm that in 2040, both OVEC generating stations will be 85 years old.
 - g. Confirm that in Case Nos. 2011-00099 and 2011-00100,¹ LG&E and KU in their supplemental responses to PSC 2-1 provided a copy of an independent technical review conducted by URS Corporation of OVEC's Kyger Creek and Clifty Creek generating stations ("Report"),² which stated that although the

¹ Case No. 2011-00099, Verified Application of Louisville Gas & Electric Co. for an Order Pursuant to KRS 278.300 and for Approval of a Long-Term Purchase Contract, and Case No. 2011-00100, Verified Application of Kentucky Utilities Co. for an Order Pursuant to KRS 278.300 and for Approval of a Long-Term Purchase Contract.

² Accessible at: https://psc.ky.gov/PSCSCF/2011%20cases/2011-00099/20110711_LGEs%20Response%20to%20Commission%20Staffs%20Supplemental%20Response%20Question%20No%201.pdf

stations could continue operating through 2040, major risks included, inter alia, any potential “major shift in fuel prices and technologies.”³

- h. Provide the most recent data regarding the extent to which the Clifty Creek and Kyger Creek stations have been depreciated. Provide each station’s net book value including the asset and reserve. Also provide the depreciation rates and average service lives.
- i. Provide the most recent data regarding the extent to which OVEC’s transmission plant has been depreciated. Provide the transmission plant’s net book value including the asset and reserve. Also provide the depreciation rates and average service lives.
- j. Provide the total energy production (excluding station use) of the Clifty Creek and Kyger Creek stations in MWh for each of the past seven years.
- k. Confirm that FirstEnergy Corporation has three unregulated subsidiaries⁴ whose combined OVEC ownership interest totals 8.35%.
- l. Confirm that on March 31, 2018 FirstEnergy Solutions Corp. filed a petition in the Northern District of Ohio seeking voluntary Chapter 11 bankruptcy.
- m. Confirm that the bankruptcy court has granted FirstEnergy Solutions Corp.’s motion to terminate its partnership in OVEC.⁵
- n. Confirm that as a result of the granting of the motion described in subpart (m), above, costs that FirstEnergy Solutions Corp. would have paid instead will be re-allocated among the remaining OVEC owners, including LG&E and KU.
- o. Provide the additional costs LG&E and KU customers will have to pay as a result of the re-allocation of OVEC costs described in subpart (n), above.
- p. Confirm that FirstEnergy Solution’s bankruptcy petition included analysis indicating that over the remaining 22-year projected lifespan of the two stations, the remaining owners of OVEC are collectively projected to lose in excess of \$5 billion.
- q. Confirm that OVEC’s plants are currently being subsidized by ratepayers residing in the state of Ohio.

³ Report, at 3-4.

⁴ Allegheny Energy Supply (3.01%), FirstEnergy Solutions Corp. (4.85%), and Monongahela Power Co. (0.49%).

⁵ Accessible at: https://www.eenews.net/assets/2018/05/24/document_pm_02.pdf

- r. Confirm that if the State of Ohio should discontinue the subsidy described in subpart (q), above, a second re-allocation of OVEC costs will occur, causing LG&E and KU customers to pay even more for OVEC's power.
 - s. State whether OVEC conducts IRP analyses, and if so, with which regulator the IRP plans are filed. If available, provide a link to OVEC's most recent IRP filing.
- A-5.
- a. See Attachment to Tab 28 – Section 16(7)(h)(7), which contains the Companies' forecast of annual energy from OVEC for years 2018 through 2021. See also Exhibit DSS-5 attached to Mr. Sinclair's testimony, which contains the Companies' actual and forecast energy from OVEC in the base and forecasted test periods.
 - b. Confirmed. LG&E's current ownership interest in OVEC is 5.63%, and KU's ownership interest is 2.50%. These figures also reflect each company's Power Participation Ratio in their participation with OVEC and other contracting parties in the Inter-Company Power Agreement ("ICPA") to purchase power from the OVEC units.
 - c. As defined in the ICPA, LG&E and KU each have a firm contractual commitment to take their percent ownership share of the minimum output from each available online OVEC generator on an hourly basis. In an hour, any energy that is available from the Companies' share of the generation resources above the minimum may be scheduled.
 - d. It is unclear what is meant by "sunk costs" in this question. The Companies purchase power from OVEC at OVEC's actual cost per the ICPA. See the response to Question No. 4(b) for the cost per MWh.
 - e. Confirmed. The amended ICPA with OVEC is dated September 10, 2010, and the Kentucky Public Service Commission approved the amended contract in Case Nos. 2011-00099 and 2011-00100.
 - f. Confirmed.
 - g. Confirmed.
 - h. The Companies do not have access to OVEC's detailed corporate, accounting, or operating information. However, OVEC's financial statements, FERC Form 1 reports, and 2017 Annual Report are publicly available on OVEC's website at <http://ovec.com>.
 - i. See the response to part (h).

- j. See the response to part (h).
- k. FirstEnergy Corporation's subsidiaries have the following relationship with OVEC:
- OVEC shareholder interests: Allegheny Energy Inc. (3.50%), Ohio Edison Company (0.85%) and Toledo Edison Company (4.00%).
 - ICPA (power contract) power participation ratios: Allegheny Energy Supply Company LLC (3.01%), FirstEnergy Solutions Corp. (in its capacity as assignee of FirstEnergy Generation, LLC) (4.85%) and Monongahela Power Company (0.49%).
- l. Confirmed.
- m. On August 9, 2018, the bankruptcy court issued an order granting FirstEnergy Solutions Corp.'s (FES) and FirstEnergy Generation, LLC's motion to reject the ICPA power contract, effective July 31, 2018. OVEC and certain other interested parties have appealed that order (as well as other aspects of the bankruptcy proceeding) to the U.S. Court of Appeals for the Sixth Circuit.
- n. The ICPA, by its terms, provides that parties, such as LG&E/KU, can only be billed for (i) their "power participation ratio" share (8.13% in LG&E/KU's combined case) with respect to demand charges, which generally represent OVEC's current and future fixed costs and (ii) with respect to energy charges, power they actually take. The ICPA further provides for "several, but not joint liability" meaning that each contract party, including LG&E/KU, can only be responsible for their agreed duties/obligations and not responsible for breaches or defaults of other parties. LG&E/KU believe this contract structure should be interpreted and enforced to prohibit direct or forced allocation or transfer of any former FES-share demand or energy charges to other ICPA parties. It is possible that the FES bankruptcy and OVEC's response to it could affect OVEC's costs or expenses (such as increased borrowing costs, etc.) of which LG&E/KU would be responsible for their 8.13% share of such (but LG&E/KU should not be charged FES 4.85% or any portion thereof). This effect is not unlike movement in OVEC's costs or expenses over time due to external events (such as changes in interest rates, environmental laws, wage levels, fuel prices, etc.)
- o. See the response to part (n). Such costs, if any, are speculative and not determinable.
- p. LG&E/KU is not able to address this question. LG&E/KU is not currently aware of the specific \$5 billion analysis or amount described, its calculation, inputs or assumptions, including whether or not it simply represents estimated aggregate operating costs or amounts and characterizes them as "losses."

- q. The Companies object to the request to the extent it asserts a legal argument and does so without any foundation. Without waiver of this objection, the Companies are not aware of a subsidy being provided by Ohio ratepayers to OVEC.
- r. The Companies object to the request to the extent it asserts a legal argument and does so without any foundation. Without waiver of this objection, see the response to part (q).
- s. OVEC only generates and transmits power, it does not serve a load obligation and therefore has no need to conduct IRP analyses.

KENTUCKY UTILITIES COMPANY

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Question No. 6

Responding Witness: Christopher M. Garrett

Q-6. Provide a detailed discussion of how KU accounts for its respective share of OVEC costs, and how these costs are passed on to retail ratepayers.

- a. Identify where in the application all of these costs can be found.
- b. Identify all journal entries the Companies make with regard to OVEC costs.

A-6.

- a. OVEC costs are included in Account 555, Purchased Power on Schedule C-2.1, Tab 56 of the Filing Requirements. See the response to KIUC 1-76 for a detailed breakdown of Purchased Power costs.
- b. KU records journal entries to accrue purchased power from OVEC based on estimated invoices sent by OVEC and to true-up the estimated amounts to the actual amounts when the final invoice is received from OVEC.

DR 555015 Energy Expense
DR 555016 Demand Expense
CR 232010 Wholesale Purchases Accounts Payable

Energy costs are recovered through the fuel adjustment clause, and demand costs are recovered through base rates.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
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Case No. 2018-00294

Question No. 7

Responding Witness: Lonnie E. Bellar

Q-7. Reference the Bellar testimony, p. 40, lines 3-16, in which he describes a project to add 345kV reactors to the Trimble County transmission substation, designed to prevent an overload of the 12.5 mile-long Trimble County to Clifty Creek 345 kV line during an outage of a neighboring system's transmission line. The line connects Trimble Station to OVEC's Clifty Creek Station. Mr. Bellar states "This is a major transmission line impacting power flows to and from other regional transmission systems."

- a. Given that the \$2.9 million project, which apparently is being funded by LG&E-KU ratepayers, provides so much benefit and value to OVEC and other transmission owners and utilities in the region, state whether the Companies have attempted to obtain at least partial funding from these other entities.
- b. Confirm that the project also benefits the PJM regional transmission organization.
- c. State whether any other utilities that will benefit from this project have applied for any funding for the project, for example, through PJM as an RTEP project. If so, provide complete details.

A-7.

- a. The primary functions of the Trimble County to Clifty Creek 345 kV line are to bring LG&E/KU's ownership share of power from OVEC Clifty Creek into LG&E/KU's electrical system and to provide an outlet for Trimble County generation. Trimble County generation would be limited below its capability without this line. In addition, the line increases LG&E/KU capacity to import and export power to neighboring systems.

The Companies have not attempted to obtain partial funding from other entities for the Trimble County reactor project. This project was identified as part of the Companies' annual transmission expansion planning process, which identifies constraints on the LG&E/KU transmission system and solutions to the sole benefit of LG&E/KU customers. This project addresses and corrects a deficiency identified through the application of the system performance

requirements mandated in North American Electric Reliability Corporation (NERC) Reliability Standard TPL-001⁶. LG&E/KU performs the assessment of the LG&E/KU transmission system required in NERC TPL-001 as part of the Companies' transmission expansion planning process. In the event that the planning assessment results indicate that the LG&E/KU transmission system does not meet system performance criteria specified in NERC TPL-001, the standard requires the Companies to mitigate this deficiency to achieve required system performance. The Trimble County reactor project is the lowest cost solution to address the NERC TPL-001 deficiency for the Trimble County to Clifty Creek 345 kV line.

Any benefits to PJM, or any other neighboring systems, are coincidental and were not considered in the decision to move forward with this project.

As the Trimble County reactor project is a reliability upgrade, the revenue requirement associated with this project will be incorporated into LG&E and KU's OATT transmission service rates. Therefore, OATT transmission service customers will also pay a portion of the revenue requirement associated with this project.

- b. See the response to part a.
- c. No.

⁶ NERC Reliability Standard TPL-001-4 was approved by the Federal Energy Regulatory Commission in Order No. 786, 145 FERC ¶61,051 (2013), with a January 1, 2015 effective date and is available at: <https://www.nerc.com/pa/Stand/Reliability%20Standards/TPL-001-4.pdf>.

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Case No. 2018-00294

Question No. 8

Responding Witness: Elizabeth J. McFarland

III. GENERAL

- Q-8. Refer to the direct testimony of Paul W. Thompson, page 11, wherein he discusses the Companies' "first 500-kilowatt increment for the Companies' voluntary Solar Share Program." Further reference is made to the November 5, 2018, letter from Rick E. Lovekamp filed electronically in Case No. 2016-00274, wherein he states, "the Companies have now completed the land purchase and have issued a Request for Proposal with regard to construction of the first Facility." Further reference is made to the Companies' July 2, 2016, application in Case No. 2016-00274 wherein the Companies stated that they had selected a contractor to construct the facilities, "[t]hrough a competitive request-for-proposals process" and included a copy of the contract between the chosen contractor and the Companies.
- a. Explain why the Companies informed the Commission in the referenced post-hearing correspondence that they had issued a Request for Proposal, when in the application for approval of the Solar Share program they had asserted that they had chosen a contractor and provided a copy of the contract.
 - b. Confirm that Exhibit 3 to the referenced application, described as the "preliminary design specifications for Solar Share Facility No. 1" was completed by and bears the name of the chosen contractor from the original "competitive request-for-proposal[]."
 - c. Did the Companies terminate the contract pursuant to section 7 of the contract provided as Exhibit 4 of the referenced application? If the answer is in the affirmative, provide a copy of the termination notice provided by the Companies. If the response is in the negative, explain whether the contract is still in place, and if so, what the purpose of the Request for Proposal referenced by Mr. Lovekamp is for.
- A-8.
- a. In Case No. 2016-00274, the Companies executed a contract as a result of a competitive bid process. In November 2018, the Companies determined that an Engineering, Procurement, and Construction contract would best serve the

Companies and their customers because one contractor would be responsible for both the first array and all of the common infrastructure. Obtaining current pricing from the market assures that our customers get the most recent and competitive costs.

- b. Confirmed. Exhibit 3 in Case No. 2016-00274 does bear the name of the contractor from the original competitive bid process.
- c. The Companies have not terminated the contract that was provided as Exhibit 4 in Case No. 2016-00274. The contract had no provision which provided exclusive right of the contractor to any projects the Companies may pursue. The RFP referenced in Mr. Lovekamp's letter was for the reasons described in response to part a.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
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Case No. 2018-00294

Question No. 9

Responding Witness: Lonnie E. Bellar / Robert M. Conroy

- Q-9. Refer to the direct testimony of Kent W. Blake, pages 10-11, wherein he discusses the Companies' Merger Mitigation Depancaking ("MMD") transmission rate mechanism.
- a. Does the MMD have the effect of reducing transmission revenues paid by certain municipalities, thus increasing the revenue requirement as compared to a scenario where the MMD does not exist?
 - b. How many years has the MMD been in effect?
 - c. Did the Kentucky Public Service Commission approve the MMD?
 - d. Is it fair to describe the MMD as a necessary effect of the Companies' merger activity and withdrawal from the Midcontinent Independent System Operator ("MISO")?
 - e. Should the Federal Energy Regulatory Commission ("FERC") approve the Companies' requested elimination of the MMD charges, explain what effect on retail rates the decision will have in the context of this case.
- A-9.
- a. MMD applies differently to exports to the Midcontinent Independent System Operator ("MISO") and imports from MISO. Under MMD, transmission charges for the combined transmission system of LG&E and KU for exports to MISO are waived for certain municipalities, reducing transmission revenues paid by those municipal customers. For imports of electricity from a source in MISO for delivery to load interconnected to the combined transmission system of LG&E and KU, under MMD, certain municipalities are billed for LG&E and KU transmission charges but LG&E and KU are obligated to credit to those municipal customers the MISO transmission charges associated with the delivery of the electricity to the MISO-LG&E/KU border. This typically results in a net payment to those municipal customers because the MISO transmission charges exceed the LG&E and KU transmission charges. As a result of these waived transmission charges and the crediting of MISO transmission charges,

MMD causes an increase in the LG&E and KU transmission revenue requirement.

- b. 12 years. MMD has been in effect since 2006. However, not all parties eligible for MMD have had import and/or export transactions with MISO to date. The cities of Princeton, Paducah, Paris, Benham, and Owensboro Municipal Utilities have had such transactions and have incurred MMD costs that increase the revenue requirement. Starting in May 2019 additional KU wholesale municipal customers will have MMD transactions. Additionally, Owensboro Municipal Utilities has recently made a claim for applicability of MMD to certain of its MISO-related transactions, which claim is currently being contested by LG&E and KU and is pending before FERC.⁷
- c. MMD is a transmission rate mechanism that applies to certain specific customers that take transmission service under the Companies' Open Access Transmission Tariff on file with FERC. As this mechanism applies to FERC-jurisdictional transmission service, it is required to be, and is a rate on file with FERC and not the Kentucky Public Service Commission. That said, the Commission was aware of FERC's March 17, 2006, conditional approval of the Companies' withdrawal from MISO when the Commission issued its own May 31, 2005 order authorizing the Companies to withdraw.⁸ The Commission further demonstrated its awareness of, and its consent for the Companies to recover through rates, MISO-exit-related transmission costs in its final orders in the Companies' 2008 base-rate cases.⁹
- d. In 1998 when the Companies sought FERC approval for the LG&E and KU merger, FERC determined that the merger raised horizontal market power issues. Ultimately FERC approved the merger, citing to MISO participation as part of the basis for satisfying these horizontal market power concerns. When the Companies sought FERC approval to withdraw from MISO, FERC required continued mitigation for the horizontal market power concerns through some other kind of mechanism. MMD was proffered as an alternative means of continuing horizontal market power mitigation. As such, a more accurate description would be that MMD satisfies the Federal Power Act Section 203 mitigation requirements that FERC required when LG&E and KU merged in 1998, as modified by FERC's orders approving the Companies' withdrawal from MISO in 2006.
- e. As discussed in the testimony of Mr. Blake, the Companies' revenue requirement and the rates proposed in this proceeding reflect the MMD charges.

⁷ FERC Docket No. EL18-203-000.

⁸ Case No. 2003-00266, Order at 26 (May 31, 2005) ("On March 17, 2006, FERC granted conditional approval for LG&E and KU to withdraw from MISO.").

⁹ See Case No. 2008-00251, Order at 8-9 and 11 (Feb. 5, 2009); Case No. 2008-00252, Order at 9 and 12 (Feb. 5, 2009).

If the FERC grants the Companies' request during the pendency of this proceeding, the Companies will address the effect on the revenue requirement. However, it is not known when FERC would issue such an order or when the elimination of MMD would be made effective.

KENTUCKY UTILITIES COMPANY

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Case No. 2018-00294

Question No. 10

Responding Witness: David S. Sinclair

- Q-10. Refer to the direct testimony of Lonnie E. Bellar, page 18, wherein he states that the Brown solar facility “was offline due to darkness or weather conditions 51.6 percent of the time.”
- a. Explain, in detail, what Mr. Bellar means by “offline.”
- A-10. “Offline” means that the Brown Solar facility is not supplying energy to the electrical grid.

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Question No. 11

Responding Witness: Lonnie E. Bellar

- Q-11. Refer to the direct testimony of Lonnie E. Bellar, page 22, wherein he notes that “Natural gas boiler firing also increases the life of the air heater baskets and the pulse jet fabric filter bags designed to collect particulate from the boilers, as well as improving startup efficiency.”
- b. Have these improvements in life expectancy and efficiency been taken into account in the instant application in terms of overhaul schedules, outage-related investments or O&M reductions?
- A-11. The project has not been in place for sufficient time to accurately judge the impact on O&M costs. Pulse Jet Fabric Filter (PJFF) bags and air heater baskets are monitored, inspected, and sampled, to assess their condition. The decision to replace these components is based on the condition assessment, and future outage plans will be adjusted accordingly. The duration of outages is governed by numerous factors, such as other planned work during said outage.

Replacement of PJFF bags and air heater baskets are capital expenditures, so there would be no outage related O&M reductions, rather a change in capital expenditures schedule.

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Question No. 12

Responding Witness: Lonnie E. Bellar

Q-12. Refer to Exhibit LEB-2 to the direct testimony of Lonnie E. Bellar, generally.

- a. Explain why the Companies did not contract with an independent entity or organization with expertise or insight into RTO membership in order to perform an unbiased analysis.

A-12.

- a. As demonstrated by Exhibit LEB-2, the Companies conducted a thorough and unbiased analysis of RTO membership without incurring the significant expense of paying a third party to do so. The Companies were founding members of the MISO RTO and regularly transact in PJM and MISO, so they have ample experience and expertise to conduct the RTO membership analysis the Companies provided in Exhibit LEB-2.

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Question No. 13

Responding Witness: Lonnie E. Bellar / David S. Sinclair

Q-13. Refer to Exhibit LEB-2 to the direct testimony of Lonnie E. Bellar, page 5 of 40, wherein the study states, "the Companies are market participants in, and regularly transact in, both RTOs."

- a. Explain the Companies' involvement in RTOs since their withdrawal from MISO, including which markets they have participated in, and generally, their level of involvement in those markets.

A-13.

- a. Since the Companies' withdrawal from MISO, the Companies have actively participated in the real-time energy markets administered by both MISO and PJM. The Companies monitor the RTO markets to identify opportunities for off-system non-firm hourly sales and economy purchases. The volume and frequency of transactions vary due to the volatility of market prices and the availability of excess generation for off-system sales. Because RTO markets continue to evolve, the Companies will continue to monitor them for other transactions that will optimize the Companies' assets and reduce the cost of service to customers. Additionally, the Companies have received responses to past capacity and energy RFPs from resources that were located in RTOs and have had to evaluate these resources in light of their RTO location.

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Question No. 14

Responding Witness: Lonnie E. Bellar

Q-14. Refer to Exhibit LEB-2 to the direct testimony of Lonnie E. Bellar, page 7 of 40, wherein one "Key Assumption[]" was that the "Companies did not use generator specific or load-specific Locational Marginal Pricing ("LMP") models.

a. Explain why this assumption or methodology was reasonable.

A-14.

a. Forecasting future LMP and RTO congestion cost is a highly complex analysis that is subject to a range of variables. Such studies typically yield a broad range of outcomes. In addition, LMP is in place to drive behaviors that minimize or eliminate congestion over time, so any significant costs or benefits should be considered short term anomalies. As regulated utilities, the Companies' objective is to hedge exposure to congestion costs and not speculate. For these reasons and the fact that expecting a certain amount of cost or revenue from LMP could impact the outcome of the analysis, the Companies used their existing energy price forecast scenarios for market prices as a reasonable proxy for the LMPs that would be created if the Companies joined an RTO. These theoretical LMPs do not exist and could vary higher or lower than the average RTO market price on a 5-minute basis, depending on actual system conditions. The Companies assumed that the LMPs would average close to the general market price over time, but did not speculate on the potential transmission congestion that might cause temporary deviations.

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Question No. 15

Responding Witness: Lonnie E. Bellar

Q-15. Refer to Exhibit LEB-2 to the direct testimony of Lonnie E. Bellar, page 7 of 40, wherein one "Key Assumption[]" was "No changes to the Companies' generating fleet occurring during the analysis time period."

- a. Confirm this assumption is consistent with the Companies' current plans outside of RTO membership.

A-15.

- a. The assumption, "No changes to the Companies' generating fleet occurring during the analysis time period," from Exhibit LEB-2 to the direct testimony of Lonnie E. Bellar, page 7 of 40, is consistent with the Companies' current plans outside of RTO membership.

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Question No. 16

Responding Witness: Lonnie E. Bellar / David S. Sinclair

Q-16. Refer to Exhibit LEB-2 to the direct testimony of Lonnie E. Bellar, page 15 of 40, wherein it references the Companies' target summer reserve margin of 16 percent to 21 percent.

- a. Is this the Companies' current, future and past target summer reserve margin? If the response is in the negative, provide the summer target reserve margin currently, the estimate assumed in the Companies' 2018 IRP and the margin for each of the past 5 years.

A-16.

- a. No. The target reserve margin range of 16 to 21 percent reflects the Companies' reserve margin range for the past five summers, since the range was developed for the Companies' 2014 IRP. In October 2018, the Companies filed their 2018 IRP, which included an updated current/future target summer reserve range of 17 percent to 25 percent. However, because no changes to the Companies' generating fleet is forecasted to occur during the 2018 RTO Membership Analysis's time period, as noted in the response to Question No. 17, the updated target reserve margin range would have no impact on the RTO membership analysis.

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Question No. 17

Responding Witness: Lonnie E. Bellar / David S. Sinclair

Q-17. Refer to Exhibit LEB-2 to the direct testimony of Lonnie E. Bellar, page 18 of 40, wherein the risk associated with Capacity Performance was discussed.

- a. Confirm that along with charges for non-performance, the PJM Capacity Performance construct also provides for payments to generators who perform during assessment intervals.
- b. Cite to the portion of LEB-2 that discusses these payments, as opposed to assessments, associated with Capacity Performance.

A-17.

- a. Confirmed.
- b. Bonus Performance Credits follow the same billing methodology as Non-Performance Charges. While the risk of additional costs to customers was noted, neither Non-Performance Charges nor Bonus Performance Credits have been factored into the analysis due to their uncertainty.

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Question No. 18

Responding Witness: Lonnie E. Bellar / David S. Sinclair

- Q-18. Refer to Exhibit LEB-2 to the direct testimony of Lonnie E. Bellar, page 30 of 40, Appendix D, wherein the document states, "although RTO membership is assumed to result in a decrease in the reserves necessary to meet the contingency reserve requirement, the benefit of this reduction in the reserves requirement alone is not a major driver of net costs or benefits."
- c. Confirm that revenues from the capacity auctions of either RTO would be considered "a major driver of net benefits."
 - d. Confirm that if the Companies were indeed winter-peaking, revenues derived from the capacity auctions of either RTO would be a larger driver of net benefits than if the Companies' target reserve margin was based on their summer peak.
- A-18.
- c. Confirmed. The revenues from the capacity auctions are considered a potential major driver of net benefits, as shown in the 2018 RTO Membership Analysis in Section 7.2.3 and Appendix B. However, the comment quoted above regarding contingency reserve requirements is in reference to online operational reserves to support dispatching the system to meet momentary load, not the generating capacity that could be sold into the forward capacity auctions.
 - d. The Companies have not performed this analysis.

KENTUCKY UTILITIES COMPANY

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Question No. 19

Responding Witness: Lonnie E. Bellar

- Q-19. Reference the final draft MISO 2018 MTEP Report, accessible at the link below.¹⁰ At p. 165, the report states that outside of the regional planning process of the Southeastern Regional Transmission Planning Organization (SERTP), MISO is working with TVA and LG&E on “Market Congestion Planning Study project PC-4” to address “congestion on the Southern Indiana/Kentucky border.”
- a. Does the “Market Congestion Planning Study project PC-4” have any LG&E or KU ratepayer impact in the current case? If so, describe in full and identify where in the application it can be referenced.
 - b. Explain if any MISO-member utilities would participate in the project.
 - c. If the project does not have any rate impact in the current cases, state whether it might in the future, and if so, provide a discussion of the nature of the project, how it would benefit LG&E-KU, and the extent to which LG&E-KU ratepayers would be expected to fund it.
- A-19.
- a. No.
 - b. LG&E/KU is not a party to the MISO PC-4 project. As such, LG&E/KU do not know if any MISO members are participating in this project.
 - c. LG&E/KU has a project (referenced in the MISO MTEP PC-4) which was completed in 2018. LG&E/KU's cost of this project was less than \$50k. LG&E/KU provided MISO details of LG&E/KU's project. The MISO MTEP report reference to LG&E/KU was only to document that coordination between the two parties related to each parties separate projects was occurring.

¹⁰ <https://cdn.misoenergy.org/MTEP18%20Full%20Report264900.pdf>

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Question No. 20

Responding Witness: Lonnie E. Bellar

Q-20. Refer to Schedule B-2.6.

- a. State how many total acres comprise the site described as "Land located at Green River CC GT intended for Generation?"
- b. Explain whether either of the Companies own land adjacent to this location, and if so, how many acres.

A-20.

- a. The Green River CC GT land intended for Generation is 104.6 acres.
- b. The 104.6 acres is adjacent to the approximately 416 acre Green River Generating Station property owned by KU.

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Question No. 21

Responding Witness: Christopher M. Garrett

- Q-21. Refer to the direct testimony of Christopher ("Chris") M. Garrett, page 25, wherein he discusses the proposed removal of the "baseline ECR beneficial reuse operating expense credit."
- a. Provide the genesis of this credit, including the Case No. of the matter in which it was first proposed.
 - b. Explain the negative impact to KU if it continues the baseline credit.
- A-21.
- a. KU is allowed to include expenses and revenues related to beneficial reuse projects through the Environmental Cost Recovery (ECR) Mechanism above the baseline amount included in base rates. Refer to page 7 in the PSC order in Case No. 2009-00197, *Application of Kentucky Utilities Company for Certificates of Public Convenience and Necessity and Approval of Its 2009 Compliance Plan for Recovery by Environmental Surcharge*.
 - b. There is no negative impact to KU if it continues the baseline credit. The purpose of the proposed adjustment in the test year is to eliminate any baseline costs in base rates so that all expenses or revenues applicable to beneficial reuse projects are captured completely through the ECR mechanism.

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Question No. 22

Responding Witness: Lonnie E. Bellar / David S. Sinclair

- Q-22. Reference the Bellar testimony, p. 12, wherein he discusses the departure of wholesale municipal customers in 2019. Discuss whether KU has been able to obtain any new load, municipal or otherwise, to replace the load lost due to the departures.
- A-22. The actions taken by the Companies in 2014 upon receiving the departing municipals' termination notices are summarized in KU's September 20, 2017 response to the June 22, 2017 Order of the Kentucky Public Service Commission in Case No. 2016-00370. Since 2014, the Companies have added approximately 11,000 new residential and general service customers. In addition, selected large industrial customers have expanded their operations and increased their energy consumption by more than 125 GWh. Moving forward, the Companies will continue to support the Commonwealth's economic development efforts and will continue to respond to RFPs for generating capacity and energy whenever the opportunity would not jeopardize the Companies' ability to reliably serve their retail customers.

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Question No. 23

Responding Witness:

Q-23. [THIS REQUEST INTENTIONALLY LEFT BLANK IN ORDER TO
MAINTAIN NUMBERING WITH CASE NO. 2018-00295]

A-23. Not applicable.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
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Case No. 2018-00294

Question No. 24

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

- Q-24. Refer to the direct testimony of Adrien M. McKenzie, generally.
- a. Are the Companies aware of any instance since their 2016 rate cases in which they were unable to attract the capital needed for infrastructure and reliability investments on reasonable terms due to their allowed ROE of 9.7%?
 - b. Although Mr. McKenzie's testimony seems to adequately address the risk a utility faces when its allowed ROE is set too low, explain, in complete detail, what risk(s) the Companies and their customers face if the Commission sets the allowed return on equity too high.
 - c. Are the Companies aware of any organizations that rate or rank state regulatory commissions?
 - d. If the response to subpart c., above, is in the affirmative, provide a discussion of how the Kentucky Commission ranks or rates in such reviews.
- A-24.
- a. KU has been able to access the debt capital markets over the past two years at interest rates consistent with its credit rating. KU does not directly access the equity capital markets. However, the ROE to be set in this proceeding should not be based on the Company's past ability to attract capital, but rather on what investors' expectations are for the future.
 - b. Under established regulatory standards, the KPSC must balance the interests of customers and a utility's shareholders by allowing an ROE that is sufficient to fairly compensate investors, enable the utility to offer a return adequate to attract new capital on reasonable terms, and maintain the utility's financial integrity. At the same time, the KPSC has the duty to protect consumers from monopolistic prices and to preserve the public interest. As the Supreme Court recognized in *Bluefield*, a utility "has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures." Thus, allowing an ROE that is excessive and exceeds the return

required by investors from comparable risk opportunities would unfairly harm consumers as the prices paid for utility service would exceed the underlying costs. In addition, consistently setting the allowed ROE above the market cost of equity may lead to uneconomic capital investments by distorting the price signals provided by competitive capital markets.

- c. The Company is aware of a June 25, 2018 publication from S&P Global Ratings, entitled “U.S. And Canadian Regulatory Jurisdictions Support Utilities’ Credit Quality – But Some More So Than Others,” which ranks Kentucky as “most credit supportive.”

- d. See the response to part (c).

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Question No. 25

Responding Witness: Adrien M. McKenzie

- Q-25. Refer to the direct testimony of Adrien M. McKenzie, page 3, wherein he cites to both the *Hope* and *Bluefield* cases.
- a. Cite to the specific instances in Mr. McKenzie's testimony where he balanced the interests of investors and consumers.
- A-25.
- a. As discussed in Mr. McKenzie's testimony, consistent with the *Hope* and *Bluefield* decisions, an ROE that is sufficient to fairly compensate investors, enable the utility to offer a return adequate to attract new capital on reasonable terms, and maintain the utility's financial integrity provides an end-result that represents a balance between the interests of investors and consumers. Based on the evidence presented in Mr. McKenzie's testimony, he concluded that an ROE of 10.42% would fulfill this requirement.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 26

Responding Witness: Adrien M. McKenzie

Q-26. Refer to the direct testimony of Adrien M. McKenzie, page 13, wherein he notes that "Moody's recently lowered its ratings outlook for 24 utilities from 'stable' to 'negative,' and one utility from 'positive' to 'stable.'"

a. Were either of the Companies any of these 24 utilities referenced?

A-26.

a. No.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 27

Responding Witness: Adrien M. McKenzie

Q-27. Refer to the direct testimony of Adrien M. McKenzie, pages 16-18, wherein he briefly described LG&E and KU.

- a. Does the fact that the Companies do not operate as a member of an RTO, all else being equal, increase or decrease their risk relative to their peers?

A-27.

- a. In the course of preparing his direct testimony, Mr. McKenzie did not undertake any analyses or empirical studies to differentiate between the investment risks of utilities that operate as a member of an RTO and those that do not; nor was such a study necessary or relevant to support his recommendations and conclusions.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 28

Responding Witness: Adrien M. McKenzie

- Q-28. Refer to the direct testimony of Adrien M. McKenzie, page 50 & Exhibit No. 5, page 3 of 3, wherein Mr. McKenzie provides his "DCF Cost of Equity Estimates."
- a. Confirm that Mr. McKenzie excluded 13 "low" figures and only 3 "high" figures.
 - b. Explain the criteria used to determine which values on Exhibit No. 5 were, as Mr. McKenzie describes them, "illogical."
 - c. Provide page 3 of 3, including the previously excluded values.
- A-28.
- a. Confirmed.
 - b. Please refer to Mr. McKenzie's direct testimony at pages 46-50, which discussed the criteria used to evaluate the DCF results presented on Exhibit No. 5.
 - c. Mr. McKenzie did not prepare a version of page 3 of Exhibit No. 5 that included the highlighted values in the course of preparing his direct testimony as Mr. McKenzie does not believe that such an analysis would represent a meaningful application of the DCF model.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 29

Responding Witness: Daniel K. Arbough

- Q-29. Is the forecast in the application consistent with the version used for quarterly earnings guidance and investor presentations?
- a. Describe the differences.
 - b. Discuss the timing of the budget, long range plan and forecasts leading up to the version reflected in the application.
 - c. Provide any updates to forecast related to earnings guidance since the Companies' applications were filed. Any response should take into account information offered at the 2018 EEI Financial Conference to be held in San Francisco, California on Tuesday, November 13, at 10 am Pacific Standard Time.
- A-29. The quarterly earnings guidance and investor presentations referenced are for PPL Corporation. LG&E and KU information is included within the Kentucky Regulated business segment in those presentations. There are some timing differences between the LG&E and KU information included in those presentations and the information included in the application.
- a. The 2018 earnings guidance from the third quarter investor call and the subsequent investor presentations, including the November 13 presentation at the EEI Financial Conference, reflect actual results through the third quarter and forecasted results for the remainder of 2018. The application included actual results through June 2018 and forecasted results for the remainder of 2018. In the third quarter investor call, PPL raised its 2018 earnings guidance for its Kentucky Regulated segment by two cents per share reflecting the load-supportive temperatures experienced by LG&E and KU for much of 2018. With respect to the capital expenditures and the resulting rate base or capitalization presented for the Kentucky Regulated segment, the amounts included in this application have been updated to reflect LG&E and KU's 2019 business plan whereas the investor presentations are still based on the 2018 business plan. Changes such as removal of the advanced metering system project have been included in the application. Absent a material change, PPL

generally updates these capital expenditure and rate base or capitalization numbers annually during its yearend investor call. Also, as noted in the application the forecasted information included in the application does not reflect any impact from rate case activity beyond 2018.

- b. The planning process is described in my testimony in Section I starting on page 2. The process began in March this year and was completed in September.
- c. See the response to part a.

KENTUCKY UTILITIES COMPANY

Response to Attorney General's Initial Data Requests for Information Dated November 13, 2018

Case No. 2018-00294

Question No. 30

Responding Witness: Christopher M. Garrett

B. Rate Base/Capitalization

Q-30. Refer to the direct testimony of Christopher ("Chris") M. Garrett, pages 4-8, wherein he discusses the Companies' choice of capitalization as the measure of valuation in these matters.

- a. Does the fact that both of the Companies' jurisdictional capitalizations exceed rate base play into the Companies' use of capitalization as the measure of valuation?
- b. Can the Commission and intervenors expect that, should the Companies' rate base exceed capitalization in future rate proceedings, the Companies will continue using capitalization as their measure of valuation?

A-30.

- a. No. The Company believes that capitalization remains the most objective measure of valuation as evidenced by the Company's use of capitalization as its valuation measure for the past 40 years. Capitalization appropriately addresses the extent to which the Company funds its working capital, consistent with the overall balance sheet approach for evaluating cash working capital in a revenue requirement calculation as discussed in the Rate Case and Audit Manual prepared by NARUC Staff Subcommittee of Accounting and Finance (Summer 2003). In LG&E's Case No. 2000-00080, the Commission recognized that capitalization is a better measure of the real cost of providing service as it is the cost of debt and equity that is reflected in the financial statements of the utility. Therefore, the Company sees no reason to change its valuation methodologies.
- b. Yes. The Commission and intervenors can expect that the Companies will continue using capitalization as their measure of valuation, as evidenced by their long-standing history in prior rate case proceedings of using capitalization as their valuation method even when it fell below rate base.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 31

Responding Witness: Christopher M. Garrett

- Q-31. Refer to the direct testimony of Chris M. Garrett, page 39, wherein the proposed extension of the amortization period for the Winter Storm 2009 and Wind Storm 2008 regulatory assets to June 2021 is discussed.
- a. Explain why June 2021 was chosen and is reasonable.
- A-31.
- a. Based on the Company's recent history of filing base rate cases every other year, the Company felt it was appropriate to extend the amortization to June 2021 in an effort to mitigate a potential over-recovery.

KENTUCKY UTILITIES COMPANY**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018****Case No. 2018-00294****Question No. 32****Responding Witness: Kent W. Blake**

Q-32. Refer to the direct testimony of Kent W. Blake, pages 5- 6.

- a. Provide the tables presented on page 6 for the period June 30, 2018, to April 30, 2020.
- b. Explain why using the midpoints of two test periods to compare capital expenditures is more reasonable or representative than using the 13-month average capitalization for each test period.
- c. Explain why the Companies chose to provide the capital spend using these two test-period midpoints.

A-32.

a.

Total capital spend July 1, 2018-April 30, 2020

\$ millions	KU	LGE	Total
Generation	592	326	918
Electric Transmission	245	65	310
Electric Distribution	266	248	515
Gas Operations	-	251	251
Customer Service	30	34	64
Other	56	54	111
Total	1,190	978	2,168

Total capital spend not subject to recovery through mechanisms July 1, 2018-April 30, 2020

\$ millions	KU	LGE	Total
Generation	313	177	491
Electric Transmission	245	65	310
Electric Distribution	266	248	515
Gas Operations	-	132	132
Customer Service	30	34	63
Other	56	54	111
Total	911	711	1,622

- b. See discussion in the direct testimony of Kent W. Blake on pages 5-6. In terms of identifying capital expenditures contributing to the increase in 13-month average capitalization, use of the mid-point to mid-point between the two test years was chosen as a representative time period. The dollar amount of capital expenditures in the alternative time period requested in 32a above is relatively consistent with that of the time period chosen. However, due to the use of 13-month average capitalization in both this proceeding and the Company's prior rate case, the amounts in 32a eliminate capital expenditures prior to July 1, 2018, for which full recovery of the cost of capital was not included in the Company's last base rate case and includes certain capital expenditures through April 30, 2020, for which full recovery of the cost of capital is not being sought in this proceeding.

- c. See the response to part b.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 33

Responding Witness: Elizabeth J. McFarland

- Q-33. Refer to the direct testimony of Lonnie E. Bellar, page 3, wherein he mentions “[s]everal recent projects to promote solar generation.”
- a. Describe these recent projects.
- A-33. The Companies have installed their first business solar at the Archdiocese of Louisville office on Poplar Level Road, have fully subscribed the first solar array in the solar share program, and are sharing generation data from Brown Solar through the LG&E-KU website. The Companies continue to actively seek additional opportunities to develop and provide solar energy in the Commonwealth. Each is discussed in more detail in Mr. Bellar’s Testimony at pages 19, 31, and 33.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 34

Responding Witness: Lonnie E. Bellar

Q-34. Refer to the direct testimony of Lonnie E. Bellar, page 4, wherein he states, "I will present the details of the capital expenditures using the period January 1, 2018, to October 31, 2019, for the generation, transmission, distribution, customer service and gas operations in my testimony."

- a. Provide the same presentation of details of capital expenditures for the same categories for the time period October 31, 2019, to April 30, 2020.
- b. Provide, by project, the capital expenditures planned for the period May 1, 2019, to April 30, 2020.

A-34.

- a. Details of capital expenditures for the time period October 31, 2019, to April 30, 2020 are presented below (in millions).

Generation	KU	LGE	Total
Outage Related Investments	\$74	\$25	\$99
Demolition of Retired Coal Plants at Tyrone, Pineville, and Green River	\$5	\$4	\$9
All Other	\$10	\$9	\$19
Total	\$89	\$38	\$127

Transmission	KU	LGE	Total
Transmission Proactive Replacements	\$134	\$32	\$166
Transmission Reliability	\$15	\$5	\$20
Transmission Expansion Planning	\$31	\$9	\$40
Transmission Other	\$23	\$7	\$30
Total	\$89	\$38	\$127

Electric Distribution	KU	LG&E	Total
Connect New Customer	\$20	\$16	\$36
Enhance The Network			
<i>Distribution Automation</i>	\$5	\$7	\$12
<i>Circuit Hardening/Reliability</i>	\$6	\$3	\$9
<i>Transformer Contingency</i>	\$5	\$3	\$8
<i>Other</i>	\$12	\$8	\$20
Maintain The Network	\$16	\$23	\$39
Repair The Network	\$3	\$4	\$7
Miscellaneous	\$1	\$0	\$1
Total	\$68	\$64	\$132

Customer Service

The combined Companies plan to spend a total of \$13 million in non-mechanism capital investment in customer services from October 31, 2019 through April 30, 2020. This spending includes \$6 million for facility and site improvements, \$3 million for meters, \$1 million for facility consolidations, and \$3 million for all other projects.

- b. See attached.

Kentucky Utilities Company
Case No. 2018-00294
Question No. 34

**Kentucky Utilities Company Capital Expenditures for Generation, Transmission, Distribution,
Customer Service, and Gas Operations**

KU Capital Expenditures

Project #	Project Description	Amount
00017FACK	KUGO RESTROOM UPDATES	449,396.02
00034FACK	BOC 1ST FLOOR RENOVATION KU	614,579.08
00051FACK	A/V UPDATES 2020	25,341.25
00066FACK	BOC DCC SPACE CONVERSION KU	615,184.19
00074FACK	Campbellsville Light Repl LED	20,019.59
00076FACK	KUGO Condenser #1 Repl	300,040.40
00080FACK	Stone Rd Sprinkler system	150,020.20
00084FACK	Limestone Office remodel 2019	1,499,880.98
00087FACK	ETown Office HVAC	30,004.04
00091FACK	Penn Gap BO Teller Exit Door	7,002.29
00093FACK	Big Stone Gap Sub/SR	113,528.80
00095FACK	London SR Fence	50,074.31
00096FACK	London SR Back New Walkway	7,000.27
00098FACK	Pennington Gap SR Parking Lot	30,004.04
00100FACK	Middlesboro BO Reno	17,070.30
00104FACK	Earlington Shop Expansion	400,087.66
00105FACK	KUGO Floor 1, 2 Remodel KU	950,316.25
00114FACK	Dix Dam Replace CRAC Units KU	38,978.90
0064FACIK	SIMP SWITCHGEAR UPG IT K	51,755.06
0064FACTK	SIMP SWITCHGEAR UPG	81,007.92
100GH	GH Recycle Pmp ImpellerRefrb19	86,724.99
101GH	GH Recycle Pmp ImpellerRefrb20	161,736.32
115GH	GH SMM Personnel Carrier	15,519.49
119903	Clear A&G 12/04	259,358.00
121GH	GH1 Cooling Tower ComplRebuild	1,000,000.00
123136	KU POLE INSPECTION	7,415,793.50
123906	BRCT6 C Inspection	1,298,453.21
123GH	GH1 CT Gearbox Repl19	76,657.48
124930	LOANED DO TO TRANS MTP KU	(17,495.36)
126072	BR3 Pulv Sep Manways (3) 12	73,916.26
126302	GH4 Econ Outlet Duct Exp Jt	506,205.16
127111	CR KY Dam to S.Paducah 69kv	963,276.67
131562	Lakeshore Sub Dist Ckt	239,969.80
131978	GH1 Reheat Pend Assy Repl	1,712,186.00
133076KU	GS GE Dam Impnd KU	64,498.55
133615KU	TC KU PLT ENG/MTR RWNDS	132,094.34
133622KU	TC KU LAB PURCH MONITORS	45,599.42

			Bellar
133627KU	TC KU LAB EQUIP PURCHASES	28,117.73	
133641	EFFLUENT WATER STUDY-GH	499,999.69	
133653KU	TC KU SAFETY & ERT EQUIP	28,942.42	
133683	EFFLUENT WATER STUDY-TC KU	180,000.00	
133794	GH1-4 Pulv Gearbox	343,312.53	
133964	BR3 BMS Repl-Upgrade	1,314,626.95	
133KU16	NE KY Buildout Eng Phase-KU16	34,250.00	
134256	DSP VERSAILLES SUB	1,081,102.44	
134864	DSP SHELBYVILLE NORHT DIST	59,793.94	
135113	BR3 Coal Fdr Transition Chutes	168,621.50	
135116	BR FGD Recycle Pump Rbld	432,618.40	
135117	BR3-5 Pulverizer Gearbox Ovhl	701,262.02	
136480KU	GS GE Test Equip Pool KU	120,950.75	
137084	GH3 ME Spray Pipe Repl	451,651.48	
137100	GH1 Controls Syst Upgrade 2019	1,067,089.44	
137101	GH2 Controls Syst Upgrade 2019	1,029,567.49	
137104	GH3 Coal Hand Relay Repl	228,020.46	
137165	'BR3 Field Ground Detector	95,291.08	
137190	BR SW Lines Coating	2,173,978.50	
137244	GH4 Upper Econ Repl	1,111,260.01	
137417	GH2 T & B AH Basket Repl 2019	1,228,996.51	
137474	GH4 Primary SH Repl	2,517,536.58	
137485	GH4 FGD Inlet Duct Exp Jts 20	10,286.00	
137539	Tools - 2019	83,873.59	
137807	DSP HOOVER SUB	25,017.70	
138168	DSP PAYNES MILL SUB PROJ	1,054,347.04	
138485	DSP Hoover 2 Sub	20,484.39	
138842	Grn Rvr Plnt-Hllsd 69kV Relo	213,790.62	
139075	KU-LGE CTR REMODEL REMOVAL	24,631.70	
139682KU	TC KU PREDICT DEVICES MAINT	20,674.80	
139696	LEX UNDRGD-PHASE 1	4,273,363.32	
139958	CR MLRSBRG-MRPHYVL	2,967,215.31	
140014KU	TC CT KU DCS UPG	219,091.80	
140032KU	TC KU PURCHASE JLG LIFT	92,462.30	
140075	DIGITAL EMS COM CHNLS-KU-2019	79,608.57	
140096	SIMP CC V_WALL RPLC-KU-2020	1,338,018.00	
140100	EMS OPERATOR MONITORS-KU-2019	39,538.32	
140113	ROUTINE EMS-KU 2019	14,191.10	
140170	GH BU Bucket and Chain 20	170,000.00	
140183	GH Conveyor Belt 19	585,130.23	
140184	GH Conveyor Belt Repl 20	183,922.97	
140199	GH4 Furnace Wall Metal Overlay	1,229,209.81	
140202	GH Stacker Reclaimer Recert	4,091,236.23	
140216	GH2 7 & 8 Stage Bucket Repl	723,494.63	
140217	GH2 Turb Packing Repl	674,689.47	

140218	GH2 HP Turb Seal Ring Repl	303,242.65
140282	COMP-RELATED-EQUIP-KU-2019	60,681.28
140283	COMP-RELATED-EQUIP-KU-2020	30,643.95
140342KU	MISC TOOLS	48,903.86
140619KU	TC CONV BELT REPL	65,608.03
140654KU	TC CBU B & C	206,748.00
140659KU	TC CT KU LC1 UPGD #2	202,613.04
141332	London-Pole Racks Yard Grading	99,514.03
141335	Midway - Pole Racks	60,000.00
141336	Paris - Pole Racks	40,000.00
141389	KU FURNITURE PROJ	106,940.08
141391	Environmental Equipment KU	32,500.00
142GH	GH1 F&G Feedwater HtrDCS Cntrl	40,375.90
143111	VERSAILLES BYPASS-0507 CIFI	149,500.16
143GH	GH1 FGD Agitator Shaft Repl20	141,606.52
144065	TEP-CR-ADAMS-DELAPLAIN TAP	1,712,728.42
144083	TEP-MOT-KUPARK-PINEVILLE	149,724.57
144108	TEP-9.0MVAr,69kVCap-Paint Lick	448,932.75
144116	Lynch Control House	4,171,397.12
144242	GH Spare SICK SAM Monitor	152,786.89
144302	GH2 4kv Switchgear	2,298,721.19
144309	GH4 480v MCC Replacement	186,348.45
144312	GH1 SH Pendant Platens	287,150.00
144325	GH4 SCR Catalyst L1	2,319,062.84
144327	GH1 SCR Catalyst L1 New	2,139,612.48
144346	GH Coal Yard Maint Truck	42,588.69
144362	GH0-1 SFC Chain Repl 20	100,000.00
144365	GH CCR Pipe Conveyor Belt	3,340,200.78
144374	GH4 Coal Handling Controls	182,894.35
144423	GH3 3-3 Pulv Gearbox	677,110.53
144426	BR Vehicle Replacement	36,755.20
144456	BR Crusher House Vac System	179,053.38
144503KU	GS CDM GMD Protection KU	35,761.57
144510KU	GS CDM CIP Ver 7.0 KU	118,715.64
144531 KU	CR Misc Capital KU (multi)	411,688.59
144541	BRCT Gas Pipeline Relocation	10,265,645.00
144542 KU	CR7 NGCC HGP KU (2020)	17,706,596.71
144659	Pineville Demo	2,966,000.00
144660	Tyrone Demo	3,868,000.00
144717	BR3-1 BFPT Blading	611,502.00
144722	BR3 HP-IP Blading	2,759,103.90
144725	BR3 HP-IP Seals	316,602.60
144727	BR3 HP Inlet Bell Seals	345,300.60
144728	BR3 HP Inner Casing Bolting	415,793.60
144913	DSP SIMPSONVILLE 1 SUBSTATION	4,766,865.95

144975	REL CLAYS MILL MOS	459,886.04
145028	KU SECURITY EQUIPMENT 2019	201,194.61
145086	Business Offices CapEx 2019	124,200.00
145088	Retail Hardware KU 2019	126,000.00
145403	HR Cap Equip Improvmnts KU	10,000.00
145803	TEP-CR-CLAY VLG TP-SHBVLL E	2,532,716.14
145843	Balance BP Capital Labor	18,118.72
147228	TEP-E-Town Term Eqp	824,604.00
147250	TEP-MOT-DIX DAM-BUENA VISTA	249,878.98
147343	GH1 Econ Inlet Header Repl	1,901,354.15
147347	GH4 Mill BSO Repl	335,064.65
147406	GH1-2 Feeder & Outlet Hop Repl	14,627.41
147413	GH1-3 Feeder & Outlet Hop Repl	15,706.48
147414	GH1-4 Feeder & Outlet Hop Repl	17,213.96
147415	GH1-5 Feeder & Outlet Hop Repl	17,577.31
147418	GH1-1 Feeder & Outlet Hop Repl	11,091.83
147488	REL Osaka East Switch	259,542.49
147489	REL Rogers Gap Switch	354,951.96
147494	REL Paint Lick Switch	177,379.29
147496	REL McKee Road Switch	177,379.30
147498	REL Bardstown Ind Switch	373,161.70
147499	REL Four Mile Switch	508,161.81
147500	REL Owingsville Switch	373,161.71
147501	REL Echols Switch	373,161.71
147503	REL Nelson Switch	177,379.30
147506	REL Woodlawn Switch	206,352.32
147507	REL Vine Grove Switch	206,352.32
147513	REL Camp Breckenridge Switch	206,352.32
147531	REL Picadome Switch	449,779.80
147734	FULL UPGRD EMS SWARE-KU-2020	69,941.85
147743	SIMP V_WALL C_RPLC-KU 2019	335,518.15
147764	EMS DBASE EXPANSION-KU-2019	73,981.85
147794	EMS APP ENHANCEMENTS-KU-2019	42,573.30
147801	RTU-IP TRAFFIC TO EMS-KU-2019	142,793.15
147818	SPIR Projects KU	914,939.38
147830	Corporate Contingency-KU	2,170,000.00
147894	BR All Terrain Forklift	138,817.80
147900	BR3 Turb Rm Crane Cntrl Upgr	265,189.83
147918	BR3 Hyd Gas Dryer Refurb	64,720.32
147930	BR3 Pulv Dynmc Classifier Repl	189,159.20
147993	BR 0-1 Gyp Dewat Vac Pump Rbld	103,824.26
148006	BR3 BFPT Electronic Ovspd Cntr	82,750.76
148096 KU	CR7 NGCC STG KU (2019)	1,082,719.25
148104 KU	CR7 Annual Outage KU (2020)	805,190.84
148111	GH4 Turbine	3,019,207.18

148132KU	GS GE CV Landfill Instrum KU	69,377.45
148391	Prop. Tax Cap. - KU Non-Mech	280,875.25
148716	N1DT WILSON DOWNING 2	7,603,545.62
148823	Earlington No-GRS 69kV Rbld	11,061,365.88
148846	CR Elihu-Wofford 69kV Rebuild	2,766,928.57
148851	CR Mrgnfld-Ovrlnd No 69kV Rbld	1,352,219.06
148854	SR Morganfield-Nebo 69kV	598,930.50
149021KU	TC2 KU TDBFP RECIRC VALVE B	137,124.90
149049	Rec Cir 154 Stan to Hust	49,327.20
149093	N1DT Wilson Down 2 Upg Dist	167,794.20
149166	KU SECURITY EQUIPMENT 2020	98,713.74
149345	SC CAPITAL - 2016 BP - KU	100,000.00
149448	KU FAC RELOC PROPERTY 2019	643,160.93
149472	Business Office CapEx 2020	13,800.00
149487	Misc Retail Hardware 2020 KU	14,000.00
149496	KU REFURB & BRANDING 2019	298,722.66
149992	BUILDING - NORTON VA	1,066,157.07
150017KU	TC2 KU BURNERS (C,F)	109,106.28
150031KU	TC KU ASH POND MOWERS	54,581.47
150052KU	TC2 KU LOWER SLOPE WW REPL	742,275.50
150053KU	TC KU ELECTROMECH RELAY	78,564.24
150059KU	TC KU UPG COAL HAND SAMP	124,048.80
150064KU	TC2 KU SSC TILE	320,537.25
150065KU	TC KU WASTE PUMPS SL PIT	31,012.20
151006KU	TC2 NOX PROBE GRID%	414,916.67
151363	GH1 Furnace Wall Overlay 2020	1,600,900.00
151366	GH3 Furnace Wall Metal Ovrly18	1,927,184.96
151370	GH2 Burner Modification	403,978.69
151375	GH 7&8 G Conveyor Siding Repl	480,260.09
151380	GH4 Turbine Bldg LED Light	192,275.64
151403	GH3 RH Otlt Terminal Tube Repl	1,119,288.00
151419	GH 2/3 Stack CEM Umbilical Rpl	41,474.21
151437	GH4 PA Duct Replacement	205,357.04
151439	GH4 Pulv Cold Air Dampers Repl	165,754.03
151487	SCM2019 DAN REPL SUB BATTERY	17,790.90
151488	SCM2019 DAN REPL LEGACY BRKR	235,930.38
151489	SCM2019 EARL REPL SUB BATTERY	33,799.97
151491	SCM2019 KU LEGACY RELAY REPL	112,023.11
151492	SCM2019 LEX REPL SUB BATTERY	5,114.33
151493	SCM2019 LEX LEGACY RTU REPL	120,171.88
151494	SCM2019 LEX REPL LEGACY BRKR	412,954.78
151502	SCM2019 PINE REPL SUB BATTERY	33,778.41
151503	SCM2019 PINE REPL LEGACY BRKR	426,566.74
151504	SCM2019 KU REPL LTC/REG CNTRL	54,560.69
151506	SCM2019 DAN FAILED BRKR/RECL	80,865.07

151507	SCM2019 DAN MISC CAPITAL PROJ	91,701.01
151508	SCM2019 DAN MISC NESC COMPL	15,618.68
151509	SCM2019 DAN WILDLIFE PROTECT	23,882.81
151510	SCM2019 DAN SUB BLD & GRNDS	74,967.35
151511	SCM2019 EARL FAILED BRKR/RECL	237,574.09
151512	SCM2019 EARL MISC CAPITAL SUB	186,215.73
151513	SCM2019 EARL MISC NESC COMPL	98,608.20
151514	SCM2019 EARL WILDLIFE PROTECT	3,892.98
151515	SCM2019 EARL SUB BLDG & GRND	45,999.50
151517	SCM2019 KU LTC OIL FILT ADDS	30,575.10
151519	SCM2019 KU OIL CONTAINMENT UPG	271,696.54
151522	SCM2019 LEX MISC CAPITAL SUB	109,171.19
151523	SCM2019 LEX MISC NESC COMPL	111,046.46
151524	SCM2019 LEX REPL BREAKERS	62,422.13
151525	SCM2019 LEX REPL BUSHINGS	83,461.07
151526	SCM2019 LEX REPL REGULATORS	58,435.91
151527	SCM2019 LEX WILDLIFE PROT	35,734.17
151528	SCM2019 LEX SUB BLDG & GND	124,900.26
151539	SCM2019 PINE FAILED BRKR/RECL	115,749.73
151540	SCM2019 PINE MISC CAPITAL SUB	167,267.60
151541	SCM2019 PINE MISC NESC COMPL	74,862.38
151542	SCM2019 PINE WILDLIFE PROTECT	54,719.57
151543	SCM2019 PINE SUB BLDNG & GND	45,933.64
151545	2019 KU TRANSFORMER REWIND	1,539,000.49
151547	SCM2019 PINE TOOLS & EQUIPMENT	22,000.27
151548	SCM2019 EARL TOOLS & EQUIPMENT	23,000.22
151550	SCM2019 DAN TOOLS & EQUIPMENT	15,000.59
151608	DSP Versailles Bypass	872,130.34
151754	KU Breaker Replacements	106,930.09
151763	KU Coupling Capacitor Rpl	88,044.00
151764	KU Fence Replacements	79,664.36
151766	KU SST Additions	583,513.68
151775	Hillside Control House	1,037,204.81
151997	BR FGD Agitator Blade Repl	464,786.16
151998	BR3 Steam Seperator Repl	454,297.20
152005	GH2 Burner Replacement 19	113,429.21
152006KU	TC CT KU EX2000 DFE CT9	120,531.35
152007KU	TC CT KU LUBE OIL PUMPS	72,361.80
152015KU	TC CT KU MARK VI UPGD CT9	166,070.33
152016KU	TC CT KU MARK VI UPGD CT10	165,708.52
152032KU	TC CT HMI UPGRADE++	252,727.02
152055 KU	CR7 T3K Hardware Refresh KU	594,472.97
152056 KU	PR13 T3K Hardware Refresh KU	217,067.57
152097KU	TC RAT RELAYS	60,822.63
152118	REL-Shannon Run Brkr Rpl	848,972.57

		Bellar
152119	REL-Lagrange East 604 Brkr Add	483,343.98
152120	REL-Munfordville Brkr Add	848,972.57
152229	SCM2019 LEX TOOLS & EQUIP	10,308.80
152387	KU FAC CONSOLIDATION 2019-20	1,358,899.20
152407	KU EQUIPMENT/TOOLS 2019	21,083.92
152613	KU Station Grounding	(2,123.36)
152638	KU Online Monitoring Equipment	416,931.97
152641	KU Resiliency Upgrades	282,271.41
152652KU	TC2 BOILER WATER WALL	102,395.00
152659KU	TC2 KU A ID FAN OVERHAUL	658,798.27
152685KU	TC2 B BFP OVERHAUL	140,661.05
152693KU	TC OFFICE UPGRADES	124,962.86
152704	CR Ohio Co-Hartford	1,449,506.35
152706	CR Farmers-Spencer Road	1,896,104.40
152770	GH 2-1 BFP Major Ovrhl 19	253,693.25
152771	KU FAILED EQUIP - 2019	79,571.53
152772 KU	CR7 CT 1&2 Insulation KU	1,471,108.00
152779	GH 3-2 BFP Major Ovrhl 19	208,015.61
152800	GH 1-4 BCWP Major Ovrhl 20	60,575.50
152801	KU FURNITURE & CHAIRS-2019	98,729.51
152803	Ric Remove Roundhill	60,118.08
152808	KU CARPET/FLOORING-2019	47,641.55
152809	GH 2-4 BCWP Major Ovrhl 19	61,219.73
152810	KU FACILITY IMPROVEMENTS-2019	321,327.05
152813	SHE Transfer UB E.Ckt 2522	59,350.25
152817	GH 1-2 SBAC Major Overhaul	359,084.43
152819	GH 4-1 LPSW Pump Mjr Ovrhl 19	202,894.11
152820	DSP Viley 2 Dist	327,585.08
152860	Paynes Mill Rd Sub/Dist/fds	999,950.60
152874	Distr Capacitors KU 2019	138,053.39
152886	URD Cable KU 2019	503,261.20
152904	GH Misc Safety/ERT	31,257.26
152950	Simpsonville 1 Dist	198,562.58
152976	REL KU CIFI RAP	1,866,559.85
152981	BR3 BCWP Overhauls	90,087.29
152992	West Lex Xfmr Add	(4,151.26)
152998	KU CEMI RAP	1,546,159.95
152999	REL SYS Hard KU RAP	3,398,479.92
153022	REPL FAILED EQUIP LTP-KU	27,368.55
153025	FURN & EQUIP LTP-KU	124,678.95
153047KU	TC2 KU FINAL SH REP	486,040.88
153056KU	TC IMPOUND IMPROV	74,059.20
153069	Solar Projects - Community KU	514,000.00
153070KU	TC CT KU PEEC BATTERIES	130,251.24
153072KU	TC FUEL HANDL DOZER	578,894.40

153080	REL Newtown MOS Add	65,476.40
153080KU	TC2 SCR CATALYST L1 NEW	2,248,210.71
153081	REL Waitsboro MOS Add	102,093.10
153097	Meter Shop 2019 KU Lexington	40,000.00
153263	GREEN RIVER DEMO	4,363,000.00
153370	Battery Replacements - KU	178,913.51
153425	REL-Newton MOS Add	202,553.67
153426	REL-Waitsboro MOS Add	202,553.67
153458	BR3-1 Condensate Pump Overhaul	98,492.66
153465	BR3-1 HWRS Pump Overhaul	211,134.31
153562	DCC ENHANCEMENT KU	1,082,050.99
154077	RSC-Ghent Phys Sec Upgr	1,323,125.36
154093	Distribution Auto KU 2017	10,103,070.94
154096	IT Distribution Automation KU	772,255.02
154216	DSP Lonesome Pine-ROW	148,434.40
154585	CR Clay Village-West Frankfort	6,689,123.81
154729KU	TC COAL CONVEYOR VFD UPGD	42,417.67
154744KU	TC2 COOLING TOWER PUMP OH	78,108.80
154759KU	TC LED LIGHTING	63,885.13
154792KU	TC CT WAREHOUSE	563,912.12
154831 KU	CR7 UV LIGHTING KU	154,778.75
154833 KU	CR7 EQ OVERHAUL KU	583,650.52
154846	GH #1 Ammonia Farm Air Comp	76,657.48
154847	GH #2 Ammonia Farm Air Comp	76,657.48
154849	GH Miscellaneous Shop Tools19	26,047.71
154911	GH 7&8 G Conveyor LED Lighting	47,599.04
154912	GH CY 10k Silo LED Lighting	31,990.38
154914	GH1 K Conveyor LED Lighting	21,326.92
154915	GH1&2 J Conveyor LED Lighting	47,985.58
154916	GH2 CoalConveyorRoom LED Light	95,809.67
154917	GH2 M Conveyor LED Lighting	52,995.19
154918	GH3 AH and Fan Area LED Light	53,317.30
154920	GH 3&4 J Conveyor LED Lighting	37,322.12
154922	GH 4 AH and Fan Area LED Light	53,317.30
154923	GH Interior Stack Lighting	230,503.81
154940	GH 2&3 Stack Elevator	307,338.43
154941	GH3 Precip Rebuild Phase 2	435,139.08
154950	GH4 Precip Rebuild Phase 3	44,251.60
154951	GH4 Precip Rebuild Phase 4	90,938.60
154961	GH4 AH Rack & Pinion Gear Rpl	97,750.53
154963	GH1 Pyrite Piping Repl19	183,340.37
154989	GH1 Waterwall panel repl 2020	1,211,633.22
154GH	GH1 Mercems & Probe Repl	168,447.75
155002	GH2 Steam Cooled Spacer Repl	940,740.00
155014	GH4 RH Outlet Terminal TubeRpl	861,595.00

		5,104,210.86	Bellar
155017	GH4 Vertical RH Repl	5,104,210.86	
155018	GH1 Air Preheating Coils Repl	162,851.13	
155024	GH CCR BottomAsh Sump Agitator	174,158.44	
155025	GH 1-2 Transport Blower Repl19	51,334.09	
155031	GH CCR Fly Ash Compressor Repl	103,669.22	
155040	GH CCR SmpPmp Ultrasonic Cntrl	61,467.69	
155070	BR3 Eng Work Station (AW) Upgr	386,874.74	
155077KU	TC INSIGHT CM VIB MONITOR	10,337.40	
155082	BR3 Oper WorkStation (WP) Upgr	219,000.68	
155083	BR System 1 Point Expansion	73,923.61	
155085	BR 3-1 Contr Air Compress Ovhl	63,670.20	
155086	BR3-2 Station AirCompress Ovhl	42,429.66	
155087	BR Stack Flow Analyzer Repl	67,270.30	
155088	BR Stack PM Analyzer Repl	139,529.30	
155089	BR Stack HG Analyzer Repl	222,811.44	
155090	BR Stack Umbilical Repl	48,665.56	
155091	BR FGD Umbilical Repl	33,819.46	
155092	BR3 Duct Flow Analyzer Repl	66,344.60	
155093	BR3 Duct Umbilical Repl	48,481.26	
155094	BR3 Ignitor Upgrade	537,939.40	
155102	BR 0-1 SFC Overhaul	591,294.10	
155103	BR 0-2 SFC Overhaul	591,294.10	
155124KU	GS GenEng MHM Software KU	63,000.00	
155127KU	GS GenEng Transf Protection KU	227,239.23	
155144	BRCT7 Gen Protect Relay Upgr	48,253.41	
155147	BRCT8 Cooling Water Pump Upgr	48,933.45	
155173	GH 3-1 LPSW Pump Major Ovrhl19	214,359.00	
155174	GH 1-3 BCWP Major Ovrhl 20	60,575.50	
155280	Rem Texas to Perryville Line	94,951.71	
155285	Hopewell Ckt 287 to 285	400,031.00	
155287	Ckt Dwina 0691 Dry Fork Relo	169,747.00	
155309	Trans Line Clearance KU	866,335.60	
155443KU	TC F COAL CONV GALLERY REBLD	783,912.96	
155530	MV-90 DAILY READ KU	176,141.39	
155549	GH2 CWP Discharge Valve Rpl	117,696.91	
155558KU	TC2 BOILER WATER WALL 2020	1,365,438.99	
155651KU	TC2 EXPANSION JOINTS 2020	475,194.10	
155659KU	TC2 BURNER B,E ROWS 2020	199,205.42	
155975	KU SCADA 2018-2021	4,893,025.97	
156330	KU Enhanced Wildlife	1,450,773.78	
156381	Lex UG Vine to Race	429,252.20	
156550	GH 4D Forklift Repl	95,931.00	
156563	GH Survey Equipment 2019	18,377.60	
156564	GH2 CT Blowdown Partial Rpl P2	526,814.00	
156570	GH 657E Scraper Recert 2019	874,310.00	

156571	GH 10K Silo Dust Collector	790,992.00
156577	GH1 Horiz LTSH Repl	169,290.00
156599	GH SmpleHse H1&2 Cnvyr LEDUpd	122,246.10
156603	GH TrsferHse4 & H3&4Cnvys LED	121,217.50
156604	GH CYReclmHprs1&2 & 1GCnvyrLED	67,304.62
156629	GH4 AH Basket Repl 2020	1,894,002.16
156687	PR Carrollton-Clifty Creek	705,913.64
156689	PR Earlington NO-G River	1,464,560.05
156692	PR Earlington N-Rumsey-GRS	419,304.37
156694	PR Hillside-Green River	1,481,806.01
156697	PR Green River-Indian Hill	1,373,992.21
156698	PR Loudon-Rockwell-Winch	2,694,135.87
156825KU	TC MOORING CELL REFURB	147,448.80
156830KU	TC MATERIAL HDLG STRUCT UPGD	92,155.50
156834KU	TC2 WESP DRAIN PIPING	126,718.43
156836KU	TC DCS SIMULATOR	825,251.04
156838KU	TC PLC CONVERSION	184,311.00
156846KU	TC DCS METERING UPGD	36,862.20
156848KU	TC MATERIAL HAND OFFICE	30,886.65
156850KU	TC STACKER RECLAIM OH	195,080.76
156909 KU	PR13 SFC Switch Cab KU	101,281.93
156980KU	TC INVERTER UPG	18,514.80
157006	SCM2020 LEX TOOLS & EQUIPMENT	10,148.80
157010	SCM2020 DAN REPL SUB BATTERY	17,926.74
157011	SCM2020 DAN REPL LEGACY BRKR	8,923.14
157013	SCM2020 DAN MISC CAPITAL PROJ	13,415.65
157016	SCM2020 EARL MISC CAPITAL SUB	38,366.17
157017	SCM2020 EARL WILDLIFE PROTECT	50,967.19
157022	SCM2020 LEX MISC CAPITAL SUB	61,045.01
157023	SCM2020 LEX REPL BREAKERS	73,331.05
157024	SCM2020 LEX REPL BUSHINGS	36,406.82
157025	SCM2020 LEX REPL REGULATORS	28,925.10
157028	SCM2020 LEX REPL SUB BATTERY	64,559.10
157029	SCM2020 LEX LEGACY RTU REPL	115,437.92
157034	SCM2020 KU REPL LTC/REG CNTRL	55,341.83
157054	SCM2020 EARL MISC NESC COMPL	67,794.22
157055	SCM2020 LEX REPL LEGACY BRKR	69,021.25
157056	SCM2020 KU LTC OIL FILT ADDS	58,350.86
157058	SCM2020 LEX MISC NESC COMPL	26,746.51
157061	SCM2020 KU LEGACY RELAY REPL	12,351.40
157062	SCM2020 DAN FAILED BRKR/RECL	22,362.96
157063	SCM2020 DAN MISC NESC COMPL	19,988.74
157070	DSP Hoover 2 Sub Land	300,000.61
157075KU	TC2 HA COMP OH	85,349.96
157115KU	TC CRITICAL HEAT UPGD	74,059.20

157118KU	TC GROUND FLR WATER MGMT	27,376.65
157131 KU	CR7 HVAC Controls Upgrade KU	72,781.67
157143 KU	CR7 Ovation Serial Card Conv K	27,056.64
157150KU	TC COAL HAND BUILD RF REPL	22,217.76
157186 KU	PR13 Truck KU	11,645.26
157202	TEP-MOT-Blackwell-Ghent 138kV	610,893.94
157203	TEP-MOT-Campground-London	665,321.03
157204	TEP-MOT-Crittenden-Marion So	411,633.55
157205	TEP-MOT-Eddyville Prsn-Ky Dam	1,094,415.24
157206	TEP-MOT-Finchville-Southville	510,421.34
157208	TEP-MOT-Hardesty B-Walker 69kV	2,500.01
157209	TEP-CR-Ky Dam-So Paducah	125,661.77
157210	TEP-MOT-LaGrange E-Penal Tap	891,019.97
157211	TEP-NL-Lebanon-Lebanon South	415,494.43
157215	TEP-MOT-Southville-Bonds Mill	665,321.03
157216	ESR Existing Switch Rep	51,254.53
157251	BR3 Generator Rotor Rewind	1,491,212.10
157252	BR3-2 ID Fan Motor Rewind	954,334.40
157253	BR3 Coal Feeder Motor Repl	96,328.20
157254	BR3-3 SB Air Compressor	209,434.26
157259	BR Landfill Capping (LTP)	72,605.03
157260	BRCT Demin Plant	1,816,847.80
157261	BRCT 6&7 SFC Controls Upgr	495,091.94
157263	BRCT6 AVR Upgrade	123,720.01
157265	BRCT7 AVR Upgrade	123,720.01
157286KU	STT Valve Mnt Equ KU	48,128.85
157288KU	STT Elec Cont Stat KU	96,257.70
157295KU	TC CT MULTILIN RELAY UPGD	325,628.10
157297KU	TC CT COMPRESS BLEED VLV UPGD	144,723.60
157306	BR3 Auxiliary Boiler	299,408.15
157309	DSP Simpsonville 1 Sub	524,437.75
157315	DSP N1DT Wilson Downing	483,971.11
157373	BR3 IDF Exp Joints Repl	22,215.18
157374	BR1 Stack Cap	69,338.30
157375	BR Regravel Main Ash Pond Dam	74,316.18
157377	BR2/3 Bypass Stack Cap	147,240.97
157389	DX Crest Gate Walkway Repl	99,945.50
157402	BR3 IDF to FGD Exp Joints Rpl	123,997.60
157404	BR3 SCR Doors - Middle	139,820.80
157437	PRLY Morganfield Relay Panels	32,070.60
157443	REL Lakeshore (Alt 2A)	198,043.56
157462	BR Abs to FGD Exp Joints Repl	256,121.00
157463	BR Limestone Slurry Pump Repl	43,115.40
157577	SIO-SUB OIL BREAKERS KU	1,057,861.49
157579	SIO-RELAY REPLACEMENT KU	3,636,764.30

		Bellar
157591	GHENT DSI IMPROVE NON-ECR	1,000,000.00
157599	DSP BEECH CREEK SUB UPGRADE	329,023.24
157601	DSP BEECHMONT SUB UPGRADE	227,849.80
157605	DSP WHITE SULPHUR SUB	5,898,071.14
157614	KU HW/SW Asset Mgmt 2019	135,486.45
157616	Vine St 4kV Distribution	999,800.60
157617	KU Pole Attach Mapping Asset	571,266.08
157635	PR Nebo-Wheatcroft	3,282,399.58
157636	PR Dorchester-St Paul	1,894,696.30
157639	PR Corydon-Grn River Steel	2,331,884.00
157641	PR Bimble-London 69kV	1,646,147.27
157642	PR Imboden-Gorge-Dorchester	612,694.62
157645	PR Adams-Haefling	234,988.45
157647	Vine St 4KV Sub	599,999.57
157660	DSP White Sulfur Sub	1,249,606.71
157671	SCM2019 TOOLS & EQUIP 013560	11,999.44
157672	SCM2020 TOOLS & EQUIP 013560	7,611.60
157703	GH Ammonia Storage Deluge Sys	378,010.00
157708	ESR Ashland Oil-Cty of Paducah	108,287.94
157710	ESR Haley 667-615	333,200.53
157711	ESR Mid Valley Clarkson	324,860.35
157743	BR2 Cooling Tower Demolition	324,009.00
157779KU	TC2 RH ATTEMPERATORS	759,046.95
157813KU	TC CT GAS METER	542,713.50
157846	Mobile Capacitor Bank-KU	1,466,670.36
157893	Smart Cities KU 2019	56,000.00
157896	EE Business Dvlp KU 2019	37,333.28
157898	EE Business Dvlp KU 2020	18,666.72
157942	BR3 AB Heater Repl	840,276.70
158019	Mobile Control House- KU	136,435.84
158028	GH FLY ASH BARGE LOAD NON-ECR	350,000.00
158030	GH GYP BARGE LOAD NON-ECR	250,000.00
162170	SCM2019 KU LEGACY ARRST REPL	44,042.80
162172	SCM 2019 KU WOOD POLE SUB UPG	650,000.55
162GH	GH3-1 LPSW TWS REBUILD19	204,006.71
163000	DANOC Wire Trailer 2019	5,693.00
163001	ELIOC Pole Trailer 2019	8,000.00
163005	PINOC Kubota Backhoe 2019	42,523.80
163006	PINOC Kubota Backhoe 2020	43,132.40
163011	SIO Fuse Savings KU	150,000.18
163013	SIO Rel KU UG FCI Install	2,399,234.82
163020	Ckt 2209 Columbia S #6 CU	16,426.64
163021	Ckt 2215 Lebanon S City Conn	74,267.72
163022	DSP Beech Creek 4kV to 12kV	70,678.32
163023	DSP Beechmont 4kV to 12kV	155,550.36

163024	DSP Madisonville E Municipal	163,628.59
163025	DSP American Ave Ckt 0008	101,128.86
163028	DSP White Sulphur 138-12kV	72,560.40
163029	Whitley City 0576 13.2-12.4kV	89,810.80
163030	Aisin Ckt 4618 to Fariston Ind	95,642.40
163031	Williamsburg S Ckt 0227 Upg	50,071.20
163034	Ckt 4704 Strawberry Patch Relo	119,675.80
163035	Ckt 0690 Dwina Rebuild	169,747.00
163038	Deer Branch Ckt 0320 Relo	150,152.20
163039	Middlesboro 1 Ckt 0366 Alt	69,727.40
163040	Middlesboro 1 Ckt 0366 Main	100,531.00
163041	Middlesboro 2 Ckt 355 Amble	60,168.60
163042	Middlesboro 2 Ckt 355 to 364	52,048.40
163043	KU Direct Burial Replacement	1,000,000.07
163044	Irvine/Dark Hollow Tie	(4,000.00)
163045	Reconductor Irvine Broadway	150,171.74
163047	Ckt 2321 Alterna Feed Rich Ctr	163,954.00
163048	DSP Fairfield Distribution	439,558.43
163049	DSP LaGrange East Distribution	536,557.24
170GH	GH2 CT Gearbox Repl19	76,657.48
188GH	GH2 PA Duct Mtl Exp Joint Rpl	280,841.32
194GH	GH3 Cooling Tower ComplRebuild	1,055,713.39
19TOOL156	Earlington Cap Tools 2019	19,329.00
19TOOL216	Danville Cap Tools 2019	4,554.40
19TOOL236	Richmond Cap Tools 2019	18,329.00
19TOOL246	Elizabethtown Cap Tools 2019	50,125.74
19TOOL256	Shelbyville Cap Tools 2019	23,910.60
19TOOL315	Lexington Cap Tools 2019	77,316.00
19TOOL366	Maysville Cap Tools 2019	30,926.40
19TOOL426	London Cap Tools 2019	47,678.20
19TOOL766	Norton Cap Tools 2019	28,349.20
209GH	GH3 SCR Exp Joint Repl	528,879.63
20TOOL156	Earlington Cap Tools 2020	6,343.00
20TOOL216	Danville Cap Tools 2020	14,801.80
20TOOL236	Richmond Cap Tools 2020	6,343.00
20TOOL246	Elizabethtown Cap Tools 2020	11,541.12
20TOOL256	Shelbyville Cap Tools 2020	11,386.00
20TOOL315	Lexington Cap Tools 2020	76,116.00
20TOOL366	Maysville Cap Tools 2020	71,041.60
20TOOL416	Pineville Cap Tools 2020	40,595.20
20TOOL426	London Cap Tools 2020	25,372.00
20TOOL766	Norton Cap Tools 2020	12,686.00
220GH	GH4 Cooling Tower ComplRebuild	8,498,625.26
244GH	GH4 Varnish Removal Skid	33,207.71
25GH	GH 3&4 Stack Elevator	486,619.18

41GH	GH4 Mercems & Probe Repl	168,447.75
45GH	GH 4-2 CWP Major Overhaul19	198,884.40
48GH	GH Barge Unloader DC Drive Rpl	152,783.64
57GH	GH Coal Handling Air Dryer Rpl	75,949.04
58GH	GH Coal Handling CntrlCbl Repl	81,602.67
78GH	GH I&E Personnel Carriers	46,100.77
91GH	GH LS Prep Elec Rm Wtr Ingress	102,446.15
BRMISCCAP	BR Miscellaneous Cap	500,000.00
CCAPR156	Capital CAP/REG/RECL - 011560	85,451.84
CCAPR216	Capital CAP/REG/RECL - 012160	101,589.63
CCAPR236	Capital CAP/REG/RECL - 012360	59,449.49
CCAPR246	Capital CAP/REG/RECL - 012460	59,326.95
CCAPR256	Capital CAP/REG/RECL - 012560	11,966.64
CCAPR315	Capital CAP/REG/RECL - 013150	1,474,911.25
CCAPR366	Capital CAP/REG/RECL - 013660	70,521.45
CCAPR416	Capital CAP/REG/RECL - 014160	3,620.35
CCAPR426	Capital CAP/REG/RECL - 014260	101,105.26
CCAPR766	Capital CAP/REG/RECL - 017660	2,281.65
CEMTR582	KU Electric Meters - 015820	1,487,849.22
CNBCD156O	NB Comm OH - 011560	230,593.13
CNBCD156U	NB Comm UG - 011560	136,763.42
CNBCD216O	NB Comm OH - 012160	601,100.89
CNBCD216U	NB Comm UG - 012160	413,463.62
CNBCD236O	NB Comm OH - 012360	256,307.17
CNBCD236U	NB Comm UG - 012360	401,400.03
CNBCD246O	NB Comm OH - 012460	266,351.70
CNBCD246U	NB Comm UG - 012460	217,016.15
CNBCD256O	NB Comm OH - 012560	356,830.97
CNBCD256U	NB Comm UG - 012560	301,013.28
CNBCD315O	NB Comm OH - 013150	1,454,681.39
CNBCD315U	NB Comm UG - 013150	1,751,999.33
CNBCD366O	NB Comm OH - 013660	701,764.57
CNBCD366U	NB Comm UG - 013660	233,926.88
CNBCD416O	NB Comm OH - 014160	84,516.98
CNBCD416U	NB Comm UG - 014160	42,087.36
CNBCD426O	NB Comm OH - 014260	353,230.17
CNBCD426U	NB Comm UG - 014260	169,018.34
CNBCD766O	NB Comm OH - 017660	214,739.69
CNBCD766U	NB Comm UG - 017660	50,912.29
CNBRD156O	NB Resid OH - 011560	653,671.45
CNBRD156U	NB Resid UG - 011560	350,986.46
CNBRD216O	NB Resid OH - 012160	333,629.80
CNBRD216U	NB Resid UG - 012160	247,490.73
CNBRD236O	NB Resid OH - 012360	385,648.05
CNBRD236U	NB Resid UG - 012360	279,672.78

CNBRD246O	NB Resid OH - 012460	245,352.29
CNBRD246U	NB Resid UG - 012460	230,245.22
CNBRD256O	NB Resid OH - 012560	232,384.41
CNBRD256U	NB Resid UG - 012560	362,636.13
CNBRD315O	NB Resid OH - 013150	1,056,593.57
CNBRD315U	NB Resid UG - 013150	1,849,776.85
CNBRD366O	NB Resid OH - 013660	467,047.16
CNBRD366U	NB Resid UG - 013660	185,321.00
CNBRD416O	NB Resid OH - 014160	414,157.69
CNBRD416U	NB Resid UG - 014160	31,010.27
CNBRD426O	NB Resid OH - 014260	411,250.36
CNBRD426U	NB Resid UG - 014260	212,117.78
CNBRD766O	NB Resid OH - 017660	573,472.25
CNBRD766U	NB Resid UG - 017660	73,897.43
CNBSV156O	NB Elect Serv OH - 011560	660,405.48
CNBSV156U	NB Elect Serv UG - 011560	415,709.87
CNBSV216O	NB Elect Serv OH - 012160	333,807.72
CNBSV216U	NB Elect Serv UG - 012160	428,770.24
CNBSV236O	NB Elect Serv OH - 012360	283,144.75
CNBSV236U	NB Elect Serv UG - 012360	412,054.79
CNBSV246O	NB Elect Serv OH - 012460	475,825.59
CNBSV246U	NB Elect Serv UG - 012460	548,318.72
CNBSV256O	NB Elect Serv OH - 012560	175,845.30
CNBSV256U	NB Elect Serv UG - 012560	364,851.35
CNBSV315O	NB Elect Serv OH - 013150	940,243.57
CNBSV315U	NB Elect Serv UG - 013150	2,028,281.53
CNBSV366O	NB Elect Serv OH - 013660	452,234.60
CNBSV366U	NB Elect Serv UG - 013660	353,005.68
CNBSV416O	NB Elect Serv OH - 014160	303,219.59
CNBSV416U	NB Elect Serv UG - 014160	91,644.55
CNBSV426O	NB Elect Serv OH - 014260	435,854.71
CNBSV426U	NB Elect Serv UG - 014260	397,419.66
CNBSV766O	NB Elect Serv OH - 017660	183,281.95
CNBSV766U	NB Elect Serv UG - 017660	106,936.66
CPBWK156	El Public Works - 011560	104,139.65
CPBWK216	El Public Works - 012160	82,870.35
CPBWK236	El Public Works - 012360	131,246.09
CPBWK246	El Public Works - 012460	101,568.83
CPBWK256	El Public Works - 012560	110,765.89
CPBWK315	El Public Works - 013150	792,138.42
CPBWK366	El Public Works - 013660	136,261.79
CPBWK416	El Public Works - 014160	67,694.67
CPBWK426	El Public Works - 014260	102,369.60
CPBWK766	El Public Works - 017660	67,078.57
CRCST156	Cust Requested - 011560	125,923.83

CRCST216	Cust Requested - 012160	98,570.52
CRCST236	Cust Requested - 012360	53,046.43
CRCST256	Cust Requested - 012560	111,572.52
CRCST315	Cust Requested - 013150	392,972.41
CRCST366	Cust Requested - 013660	86,955.16
CRCST416	Cust Requested - 014160	115,723.27
CRCST426	Cust Requested - 014260	220,618.31
CRCST766	Cust Requested - 017660	110,427.65
CRDD156O	Capital Rep Def OH - 011560	1,195,068.36
CRDD156U	Capital Rep Def UG - 011560	48,217.80
CRDD216O	Capital Rep Def OH - 012160	209,955.53
CRDD216U	Capital Rep Def UG - 012160	17,848.57
CRDD236O	Capital Rep Def OH - 012360	259,970.16
CRDD236U	Capital Rep Def UG - 012360	29,774.12
CRDD246O	Capital Rep Def OH - 012460	73,095.72
CRDD246U	Capital Rep Def UG - 012460	11,663.01
CRDD256O	Capital Rep Def OH - 012560	198,149.52
CRDD256U	Capital Rep Def UG - 012560	18,655.26
CRDD315O	Capital Rep Def OH - 013150	1,058,090.09
CRDD315U	Capital Rep Def UG - 013150	579,290.92
CRDD366O	Capital Rep Def OH - 013660	379,340.75
CRDD366U	Capital Rep Def UG - 013660	44,612.18
CRDD416O	Capital Rep Def OH - 014160	63,534.56
CRDD426O	Capital Rep Def OH - 014260	230,081.93
CRDD426U	Capital Rep Def UG - 014260	44,092.35
CRDD766O	Capital Rep Def OH - 017660	114,370.88
CRDD766U	Capital Rep Def UG - 017660	12,933.58
CRELD156	Capital Reliability - 011560	117,060.03
CRELD216	Capital Reliability - 012160	75,321.32
CRELD236	Capital Reliability - 012360	126,851.27
CRELD246	Capital Reliability - 012460	75,781.61
CRELD256	Capital Reliability - 012560	92,296.95
CRELD315	Capital Reliability - 013150	377,207.20
CRELD366	Capital Reliability - 013660	134,731.10
CRELD416	Capital Reliability - 014160	144,556.20
CRELD426	Capital Reliability - 014260	150,010.87
CRELD766	Capital Reliability - 017660	92,386.77
CRPOLE156	Pole Repair/Replace - 011560	1,737,878.38
CRPOLE216	Pole Repair/Replace - 012160	432,167.47
CRPOLE236	Pole Repair/Replace - 012360	559,276.20
CRPOLE246	Pole Repair/Replace - 012460	766,668.82
CRPOLE256	Pole Repair/Replace - 012560	616,264.18
CRPOLE315	Pole Repair/Replace - 013150	1,089,673.27
CRPOLE366	Pole Repair/Replace - 013660	678,353.38
CRPOLE416	Pole Repair/Replace - 014160	505,494.49

CRPOLE426	Pole Repair/Replace - 014260	329,383.02
CRPOLE766	Pole Repair/Replace - 017660	401,263.56
CRSTLT156	Repair Street Lights - 011560	532,015.09
CRSTLT216	Repair Street Lights - 012160	258,334.42
CRSTLT236	Repair Street Lights - 012360	281,729.68
CRSTLT246	Repair Street Lights - 012460	405,314.48
CRSTLT256	Repair Street Lights - 012560	303,123.79
CRSTLT315	Repair Street Lights - 013150	871,073.69
CRSTLT366	Repair Street Lights - 013660	280,068.68
CRSTLT416	Repair Street Lights - 014160	95,427.83
CRSTLT426	Repair Street Lights - 014260	368,067.16
CRSTLT766	Repair Street Lights - 017660	89,691.41
CSTLT156	NB Street Lights - 011560	612,449.20
CSTLT216	NB Street Lights - 012160	199,930.34
CSTLT236	NB Street Lights - 012360	464,635.77
CSTLT246	NB Street Lights - 012460	197,948.38
CSTLT256	NB Street Lights - 012560	139,085.27
CSTLT315	NB Street Lights - 013150	1,826,600.91
CSTLT366	NB Street Lights - 013660	342,562.55
CSTLT416	NB Street Lights - 014160	282,998.80
CSTLT426	NB Street Lights - 014260	363,949.98
CSTLT766	NB Street Lights - 017660	149,824.89
CSTRM766	Cap Minor Storms - 017660	65,588.64
CSTRMKU	Cap KU Major Storms	2,513,557.70
CSYSEN156	Sys Enh - 011560	84,479.47
CSYSEN216	Sys Enh - 012160	266,672.55
CSYSEN236	Sys Enh - 012360	56,105.08
CSYSEN246	Sys Enh - 012460	52,206.50
CSYSEN256	Sys Enh - 012560	93,052.69
CSYSEN315	Sys Enh - 013150	565,660.90
CSYSEN366	Sys Enh - 013660	132,608.14
CSYSEN416	Sys Enh - 014160	39,856.92
CSYSEN426	Sys Enh - 014260	128,892.20
CSYSEN766	Sys Enh - 017660	202,736.28
CTBRD156O	Cap Trouble Orders OH - 011560	204,920.70
CTBRD216O	Cap Trouble Orders OH - 012160	75,549.04
CTBRD216U	Cap Trouble Orders UG - 012160	45,085.24
CTBRD236O	Cap Trouble Orders OH - 012360	87,851.70
CTBRD246O	Cap Trouble Orders OH - 012460	149,657.11
CTBRD256O	Cap Trouble Orders OH - 012560	83,404.73
CTBRD256U	Cap Trouble Orders UG - 012560	41,817.30
CTBRD315O	Cap Trouble Orders OH - 013150	173,379.21
CTBRD315U	Cap Trouble Orders UG - 013150	59,790.32
CTBRD366O	Cap Trouble Orders OH - 013660	165,970.04
CTBRD366U	Cap Trouble Orders UG - 013660	18,773.58

CTBRD4160	Cap Trouble Orders OH - 014160	233,083.45
CTBRD4260	Cap Trouble Orders OH - 014260	388,763.95
CTBRD7660	Cap Trouble Orders OH - 017660	195,397.01
CTBRD766U	Cap Trouble Orders UG - 017660	9,475.54
CTPD156	Capital Thrd Party - 011560	31,534.42
CTPD216	Capital Thrd Party - 012160	73,720.24
CTPD236	Capital Thrd Party - 012360	188,333.24
CTPD246	Capital Thrd Party - 012460	24,658.74
CTPD256	Capital Thrd Party - 012560	58,625.71
CTPD315	Capital Thrd Party - 013150	156,879.35
CTPD366	Capital Thrd Party - 013660	57,482.28
CTPD416	Capital Thrd Party - 014160	11,658.75
CTPD426	Capital Thrd Party - 014260	57,138.67
CTPD766	Capital Thrd Party - 017660	19,309.53
CXFRM156	NB Transformers - 011560	63,563.09
CXFRM216	NB Transformers - 012160	76,645.03
CXFRM236	NB Transformers - 012360	64,127.83
CXFRM246	NB Transformers - 012460	66,559.49
CXFRM256	NB Transformers - 012560	154,178.33
CXFRM301	KU Line Transformers	9,785,470.62
CXFRM315	NB Transformers - 013150	273,879.97
CXFRM366	NB Transformers - 013660	88,309.45
CXFRM416	NB Transformers - 014160	37,270.35
CXFRM426	NB Transformers - 014260	20,286.56
CXFRM766	NB Transformers - 017660	71,609.08
IT0101K	Smallworld GIS Upgr-KU17-19	3,518,136.24
IT0225K	FERC Form 1 Tool Repl-KU18-19	24,000.00
IT0235K	ITSM CIP/AIM-KU18-19	36,000.00
IT0242K	Megastar & DVM MW Repl-KU18	45,600.00
IT0246K	Mobile Dispatch Enh-KU19-20	612,586.32
IT0294K	Upgrade Quest Server-KU19	67,923.60
IT0301K	Rep ASTRO Spectra Yr 1/3-KU19	61,608.05
IT0302K	Rep ASTRO Spectra Yr 2/3-KU20	292,800.00
IT0305K	Repl Quant Repeat Yr 1/2-KU19	31,200.00
IT0306K	Repl Quantar Repeat 2/2-KU20	388,800.00
IT0329K	Lockout/Tagout Replace-KU18	171,368.46
IT0333K	Cst Rel Mgmt Maj Acts-KU18-19	134,399.94
IT0350K	Business Offices Kiosks-KU19	50,400.00
IT0403K	Access Switch Rotation-KU19	226,632.62
IT0404K	Analog Sunset-KU19	144,000.00
IT0407K	Bill Design Tool Upg-KU20	42,000.00
IT0408K	Bulk Power & Env Systems-KU19	76,800.00
IT0412K	CIP Compl Tools - Year 9-KU19	77,760.00
IT0413K	Compliance Infra Year 9-KU19	160,515.28
IT0417K	Core Network Infra-KU19	72,000.00

IT0419K	Corp Web Redesign-KU19-20	43,200.00
IT0422K	Data Domain Entrprs Ref-KU19	288,000.00
IT0425K	EMS CIP-KU19	70,000.00
IT0427K	Endpoint Protection-KU19	2,400.00
IT0428K	FieldNet SoftwareUpgr-KU19	56,000.00
IT0432K	IT Sec & IP Labs Enhance-KU19	16,001.28
IT0433K	IT Security Infrs Ref-KU19	51,200.64
IT0434K	LOAD -vendor upgrade-KU19	81,200.00
IT0438K	Maximo Licenses-KU19	72,800.00
IT0440K	Microsoft Lic True-up-KU19	48,000.00
IT0441K	Mbl & Wrkst Lic True-up-KU19	27,360.00
IT0443K	Mobile Radio-KU19	69,600.00
IT0444K	Monitor Replacement-KU19	37,440.00
IT0445K	MR Hardware-KU19	28,000.00
IT0446K	Multi-Functional Devices-KU19	14,400.00
IT0448K	Network Access Devices-KU19	59,760.00
IT0449K	Network Access Gateways-KU19	24,000.00
IT0450K	Network Management -KU19	18,000.00
IT0451K	Network Test Equipment-KU19	42,720.00
IT0452K	Oracle NMS Enhance-KU20	56,000.00
IT0453K	OTN Extend EKY Ring-KU19-20	1,420,062.29
IT0454K	Outside Cable Plant -KU19	112,800.00
IT0456K	PeopleSoft Tools Enhance-KU19	74,275.71
IT0457K	Personal Prod Growth-KU19	48,000.00
IT0458K	PowerPlan Upgrade-KU19-20	1,096,572.32
IT0459K	Purch/Rebuild Radio Sites-KU19	165,000.00
IT0460K	Rate Case 2019-KU19-20	100,000.00
IT0463K	SAP CRM/ECC Enh/SrvcPack-KU19	110,787.00
IT0466K	Sec Infra Enhancement-KU19	48,000.00
IT0467K	Server Capacity Expan-KU19	30,216.48
IT0469K	LogRhythm (CIP)-KU19	50,400.00
IT0470K	LogRhythm (Corp)-KU19	50,400.00
IT0473K	Site Security Improve-KU19	20,640.00
IT0475K	StackVision Upgrade-KU19	112,000.00
IT0477K	Tech Refresh desk/lap-KU19	785,992.23
IT0479K	Telecom Site Renov-KU19	39,840.00
IT0480K	Time and Labor Upgr-KU19-21	600,918.44
IT0481K	TOA-KU19	53,200.00
IT0483K	TRODS-KU19	60,480.00
IT0486K	Voice Infra Expansion-KU19	41,945.28
IT0488K	Vulnerability Scanning-KU19	63,959.13
IT0489K	Wireless Buildout-KU19	48,000.00
IT0493K	Tripwire Repl for LID-KU19	36,000.00
IT0494K	VERBA Major Upgrade-KU19	76,800.00
IT0495K	Contractor Mgmt Upgrades-KU19	98,000.00

IT0496K	ESP Virt Win Servers-KU19	168,000.00
IT0497K	EACM Infrastructure Refr-KU19	79,789.93
IT0498K	DB Refresh-KU19	48,000.00
IT0499K	Windows 10 CBB upgrade-KU19	126,246.15
IT0500K	SCCM Upgrades-KU19	26,880.00
IT0501K	Ivanti AppSense Env Mgr -KU19	36,652.80
IT0506K	Low Inc Asst Agency Prtl-KU19	28,000.00
IT0507K	iPad Refresh Project-KU19	45,073.00
IT0508K	SOA Middleware Upgrade-KU19	62,400.00
IT0509K	Upgr OpenText Capt Cntr-KU19	76,800.00
IT0511K	Trns Lnes Wk Mgmt Upg-KU19-20	334,537.12
IT0512K	DACS Repl Prov/Mon Sys-KU19	58,080.00
IT0513K	DACS Equip Repl (Yr1of3)-KU19	153,600.00
IT0514K	DACS Equip Repl (Yr2of3)-KU20	38,400.00
IT0517K	OpenText for Acct Recons-KU19	36,000.00
IT0518K	Drawing Mgmt System-KU19	117,600.00
IT0519K	Insight CM Upgrade-KU19	16,800.00
IT0520K	Maximo Upg - Reporting-KU19	182,000.00
IT0521K	BI Rpt Mgration SSRS Nat-KU19	76,800.00
IT0522K	Plnt Mobile RO- EW Brown-KU19	28,000.00
IT0523K	Plnt Mble RO- Mill Creek-KU19	140,000.00
IT0524K	Ld Rsrch&Cust Seg DtaMod-KU19	50,400.00
IT0525K	Hyperion Upgrade-KU19	16,800.00
IT0526K	Exp Reimburse Repl (PtP)-KU19	225,600.00
IT0527K	HR Interview Builder-KU19	10,000.00
IT0528K	LifeIns&Retire Frms/Prtl-KU19	62,500.00
IT0529K	Trans BREC Trnsprt IC-KU19	36,000.00
IT0531K	Qradar Pckt Capt Crp/CIP-KU19	230,147.17
IT0532K	UC&C/CUCM Major Upgrade-KU19	38,400.00
IT0533K	Aspect EWrkfce App Upg-KU19	50,400.00
IT0534K	CommSlr- Auto EnrollFee-KU19	11,200.00
IT0535K	Expnd Pymt/Cust Srvc Opt-KU19	14,000.00
IT0536K	Gas Meter Sampling Imprv-KU19	112,000.00
IT0538K	EACM Virtual Infra (CIP)-KU19	84,000.00
IT0540K	Windows 10 SW Upg EMS-KU19	47,620.68
IT0541K	Passive Disc Vuln ID-KU19	76,800.00
IT0542K	Data Classification Enh-KU19	96,000.00
IT0543K	Inventory Mgmt Expansion-KU19	120,000.00
IT0546K	UDP redirect Solarwinds-KU19	24,000.00
IT0547K	Virt Reality Train POC-KU19	8,400.00
IT0548K	Centrify Rp CyberArk Enh-KU19	100,800.00
IT0549K	Computing Infra Expans-KU19	96,000.00
IT0550K	Computing Infra Upg-KU19	257,703.16
IT0551K	Data Center Facility Upg-KU19	67,200.00
IT0552K	Enterprise GIS Enhments-KU19	224,000.00

IT0553K	WMS Post Implement Mods-KU19	78,400.00
IT0554K	IRAS PIM Post Impl Mods-KU19	78,400.00
IT0555K	EDO Mobile Post Impl Mod-KU19	78,400.00
IT0556K	DMZ VM Infrastructure-KU19	3,840.00
IT0557K	Corporate RPA-KU19	192,000.00
IT0558K	Bill Int Gas Trns Aut-KU19-20	168,000.00
IT0559K	Genetec HW Upgrade-KU19-20	140,000.00
IT0560K	Cust Not Expand/Repl-KU19-20	268,181.20
IT0561K	MAM Enhments-KU19-20	78,400.00
IT0562K	ABB Upg/iPad Depl FS-KU19-20	406,000.00
IT0563K	RPA for Rev Integrity-KU19-20	140,000.00
IT0568K	Data Analytics (SIO)-KU19	316,800.00
IT0569K	Enterprise GIS-Phase2-KU20-21	1,096,471.53
IT0604K	Avaya-Route&Rpt Upg-KU19-20	455,466.01
IT0606K	Bulk Power & Env Systems-KU20	14,400.00
IT0609K	Call Recording Upgr-KU20-21	167,521.28
IT0610K	Centrify Licensing-KU20	9,600.00
IT0612K	CIP Compl Tools - Yr 10-KU20	42,240.00
IT0613K	Citrix XenDesk Maj Upgr-KU20	40,464.00
IT0614K	Citrix XenMobile Upgrade-KU20	14,605.92
IT0615K	CIP Compl Infra - Yr 10-KU20	78,310.87
IT0618K	Constellation MW Rplmnt-KU20	43,200.00
IT0627K	IT Sec Infrast Enhance-KU20	11,962.32
IT0628K	ITSM Upgrade-KU20	12,000.00
IT0632K	Microsoft EA-KU20	240,000.00
IT0633K	Microsoft Lic True-up-KU20	24,000.00
IT0634K	Mbl & Wrkst Lic True-up-KU20	5,760.00
IT0636K	Mobile Radio-KU20	26,400.00
IT0637K	Monitor Replacement-KU20	8,160.00
IT0644K	Ntwrk Acc Dev&Site Infra-KU20	12,240.00
IT0647K	Network Test Equipment-KU20	17,280.00
IT0649K	Outside Cable Plant -KU20	28,800.00
IT0651K	Pers Product Grow & Ref-KU20	19,200.00
IT0652K	Purch/Rebld Radio Site-KU20	85,000.00
IT0656K	Router Upgrade Project-KU20	96,000.00
IT0661K	Ser Cap Expan and Rel-KU20	10,584.48
IT0668K	Site Security Improve-KU20	3,360.00
IT0671K	Tech Refresh desk/lap-KU20	499,299.92
IT0672K	Telecom Site Ren-KU20	8,160.00
IT0673K	TOA Upgrade-KU20	5,600.00
IT0674K	TRODS-KU20	15,120.00
IT0675K	Truepoint MW Replacement-KU20	28,800.00
IT0680K	Voice Infra Expansion-KU20	26,435.95
IT0681K	Wireless Buildout-KU20	48,000.00
IT0682K	SCADA Radio Refrsh Yr1/3-KU20	4,800.00

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IT0687K	EMC TLA Renewal-KU20	2,160,000.00	
IT0688K	BI Upgrade-KU19	105,600.00	
IT0689K	Safety Dashboard Enhance-KU20	25,200.00	
IT0690K	Aligne Upgrade-KU20	50,400.00	
IT0693K	DB Refresh-KU20	24,000.00	
IT0694K	Windows 10 CBB Upgrade-KU20	63,115.92	
IT0695K	SCCM Upgrades-KU20	11,520.00	
IT0696K	RSA Appliance Upgrade-KU20	120,000.00	
IT0697K	Replace ACS Servers-KU20	24,000.00	
IT0701K	Trans Lines Mobile Insp-KU20	42,000.00	
IT0705K	iPad Refresh Project-KU20	23,960.32	
IT0708K	My Acct Repl/Enhance-KU19-20	429,860.20	
IT0710K	SOA Middleware Upgrade-KU20	9,600.00	
IT0711K	CA API Mgmt Gateway Upg-KU20	36,000.00	
IT0712K	BI Rpting Aligne Fuels-KU20	16,800.00	
IT0713K	Enterprise GIS Enhance-KU20	11,200.00	
IT0715K	OpenTxt for Envrn Affrs-KU20	28,000.00	
IT0716K	UC&C/CUCM Major Upgrade-KU20	9,600.00	
IT0718K	Virtual Reality Implment-KU20	140,000.00	
IT0720K	Computing Infra Upgrade-KU20	122,579.59	
IT0722K	Data Center Facility Upg-KU20	28,800.00	
IT0723K	Corporate RPA-KU20	48,000.00	
IT0724K	SAP Hana 2 Upgrade-KU20-21	4,872.96	
IT0726K	Data Analytics (SIO)-KU20	67,200.00	
IT0904K	Rev Collect Transcentra-KU20	47,568.12	
IT1016K	KY SDN Impl (Phase 1)-KU19	120,000.00	
IT1019K	NPM Tech Refr (Netscout)-KU20	96,000.00	
IT1067K	SONET Repl Prov/Mon Sys-KU19	58,080.00	
IT1086K	SONET Equip Repl Yr 1/4-KU19	299,498.46	
IT1087K	SONET Equip Repl Yr 2/4-KU20	71,213.73	
K8-2019	Storm Damage T-Line KU 2019	641,400.00	
K8-2020	Storm Damage T-Line KU 2020	328,711.64	
K9-2019	Priority Repl T-Lines KU 2019	1,769,893.03	
K9-2020	Priority Repl T-Lines KU 2020	810,601.10	
KARM-2019	Priority Repl X-Arms KU 2019	457,520.40	
KARM-2020	Priority Repl X-Arms KU 2020	69,749.47	
KINS-2019	Priority Repl Insltrs KU 2019	67,475.86	
KINS-2020	Priority Repl Insltrs KU 2020	34,931.71	
KOTFAIL19	KU-OtherFail-2019	812,986.18	
KOTFAIL20	KU-OtherFail-2020	333,333.37	
KOTH-2019	Priority Repl Other KU 2019	710,872.68	
KOTH-2020	Priority Repl Other KU 2020	223,415.17	
KOTPR19	KU Other Prot Blanket 2019	64,164.42	
KRTU-20	KU RTU Replacements-20	626,535.56	
LI-000024	PR Green River-Green Rvr Stl	2,825,735.28	

LI-000028	PR Delvinta-Lk Reba Tap	2,363,588.42
LI-000030	PR Lancaster-Danville E	579,260.46
LI-000033	PR Lancaster-Mt Vernon	1,797,740.14
LI-000034	PR Middlesboro 127-Midsbro 780	1,332,184.29
LI-000036	PR Pineville-Rocky Branch	4,629,220.68
LI-000046	ESR Island Mine 653-605 & 615	349,861.40
LI-000047	ESR Paris City 3 021-605 & 615	324,860.32
LI-000048	ESR River Queen Tap 107-605	253,429.08
LI-000049	ESR Owen Co 145-715	253,429.08
LI-000050	ESR Brush Creek 517-605 & 615	324,860.32
LI-000051	ESR Wheatcroft Tap 112-615	253,429.08
LI-000055	MOS Rivr Queen Tap 167-805-815	70,914.48
LI-000058	REL Alexander 402-605-615 MOS	70,914.48
LI-000059	REL Vrslls ByPass 838-605-615	100,839.06
LI-000060	REL Bromley 29-615	17,728.48
LI-000061	REL Barbourville City 218-615	70,914.48
LI-000063	REL Shavers Chapel 439-605 MOS	70,914.48
LI-000064	REL Shlby City 744-605-615 MOS	70,914.48
LI-000065	REL Shlbyvl So 588-605-615 MOS	456,172.62
LI-000066	REL Lawrncbrg 639-605-625 MOS	70,914.48
LI-000067	REL Lexingtn Water 662-605-635	70,914.48
LI-000068	REL Liberty Rd 529-605-615 MOS	70,914.48
LI-000069	REL Wilson Dng 899-625-635 MOS	70,914.48
LI-000072	Midland Avenue Relocation	252,791.92
LI-000083	TEP-CR-Loudon Ave-Hume Road	819,885.24
LI-000085	TEP-MOT-Greensburg-Camp EKPC	696,704.72
LI-000086	TEP-CR-Eastwood-Simpsonville	672,584.08
LI-000092	TEP-MOT-Morganfield-Wheatcft	776,190.98
LI-000094	TEP-CR-Green County-Grburg	609,507.77
LI-000095	TEP-MOT-KU Park-Stinking Creek	489,592.73
LI-000096	TEP-MOT-Wofford-Rockhold	609,507.77
LI-000098	TEP-MOT-Hinkle-Stinking Creek	510,421.34
LI-000099	TEP-CR-Campville Tap-Tay Co	755,201.63
LTPGENKU	Other LTP Gen Projects KU	112,500.00
SC0050	ForkLift NLimestone Store-KU19	74,635.53
SC0051	Storeroom Racks N Limstn-KU19	99,514.03
SC0052	Pole Racks Etown Yard Exp-KU19	149,271.06
SC0053	Etown Yard Expansion-KU19	99,514.03
SC0054	Pole Racks - Somerset-KU19	39,805.62
SC0055	Somerset- Wire Shed-KU19	128,373.11
SC0056	Storeroom Rack Shlbyville-KU19	49,757.02
SC0057	Const Lex Trans Pole Yard-KU19	248,785.10
SC0058	Pole Racks- Lex Transm-KU19	199,028.08
SC0063	Construct Paris Pole Yard-KU20	149,271.06
SC0064	Pole Racks - Paris-KU20	99,514.03

SU-000001	PCH Barlow Control House	358,633.85
SU-000002	PR Middlesboro Control House	661,333.36
SU-000004	Princeton CH, Arresters & DFR	302,371.29
SU-000040	PBR-Pineville (1) 345kV	93,653.23
SU-000052	PBR-Nebo (3) 69kV BKR	368,372.03
SU-000053	PBR-Okonite (2) 69kV BKR	249,893.14
SU-000055	PBR-Winchester (3) 69kV BKR	1,010,924.51
SU-000070	PCH-SHELBYVILLE CONTROL HOUSE	473,579.75
SU-000079	REL Bromley 29-605/615/635 MOS	86,666.64
SU-000081	REL-Dix Dam 25-624 Recloser	114,666.64
SU-000082	REL-E Frankfort 69kV Bus Tie	432,666.64
SU-000084	REL-Loudon DFR	134,000.00
SU-000086	REL-Okonite RTU	114,666.64
SU-000088	REL-River Queen DFR	78,333.32
SU-000089	REL-South Paducah DFR	51,666.68
SU-000096	REL Gorge	214,666.64
SU-000097	REL-Danville East 834-605 MOS	80,349.20
SU-000099	TEP-Somerset South Cap Bank	1,033,989.00
SU-000116	PPLC 150-834/836	33,333.36
SU-000117	PPLC 032-814 DCB	33,333.36
SU-000118	PPLC 066-744	33,333.36
SU-000119	PPLC 071-608 DTT	90,314.52
SU-000120	PPLC 162-804 DCB	33,333.36
SU-000122	PPLC 222-704 DCB	33,333.36
SU-000123	PPLC 085-714 DCB	33,333.36
SU-000124	PPLC 203-814 DTT	33,333.36
SU-000130	PR Harlan Y CONTROL HOUSE	623,422.49
SU-000144	PR Dix Dam Plant 025-604 Panel	144,503.24
SU-000146	PR Grn Rvr Steel 100-604 Panl	144,503.24
SU-000165	PRTU Owen Co. (EKP Tie)	100,000.00
SU-000166	PRTU Renaker (EKP Tie)	100,000.00
SU-000167	PRTU Falmouth (KU Load on EKP)	100,000.00
SU-000168	PRTU Revelo (KU Load on EKP)	100,000.00
SU-000169	PRTU Whtly City-KU Load on EKP	100,000.00
SU-000170	PRTU Shelby Co * (EKP Tie)	100,000.00
SU-000179	RSC-Pocket N. Security Upgrds	1,619,699.84
SU-000191	TEP-Crrlltn-Lckprt Trm Eqp	22,636.88
SU-000195	TEP-Elihu 161/69kV CT Settings	3,545.76
SU-000196	TEP-Etown-Etown 4 69kV Trm Eqp	39,989.40
SU-000199	TEP-Haefling-Spindletop Trm Eq	3,545.76
SU-000200	REL-Hardesty 69 RTU	75,169.36
SU-000203	TEP-Hardin Co-Etwn 69kV 2 Line	1,891,084.41
SU-000208	REL-Reynolds Breaker Line Prot	324,788.00
SU-000209	REL-Rumsey 69 RTU	78,005.84
SU-000210	REL-Salem 69 RTU	85,806.48

SU-000213	REL-Simmons 69 RTU	75,169.36
SU-000217	TEP-Tyrone 138/69kV Bushing CT	3,545.76
SU-000218	REL-UK Scott Street 69 RTU	85,806.48
SU-000219	REL-Wlsn Dwng 899-625/615 MOS	75,878.48
SU-000220	REL-Andover Taps RTU	29,539.12
SU-000221	REL-Bear Track 69 RTU	36,847.76
SU-000222	REL-Howards Branch 161 RTU	29,539.12
SU-000223	REL-Lakeshore 69 RTU	32,279.92
SU-000224	REL-Oak Hill 69 RTU	32,279.92
SU-000229	REL-Lakeshore (Alt 2A)	809,206.24
SU-000241	REL-IBM 69 RTU	33,802.44
SU-000247	LEX UNDRGD-PHASE 1 SUBS	71,065.20
SU-000248	TEP-Artemus(1)69kV Brk,PAR,PIN	30,000.00
SU-000250	PCA-CC Pull Forward	66,640.00
SU-000251	PCA-Delvinta CC (814,824,834)	66,640.00
SU-000252	PCA-East Frankfort Arresters	108,971.29
SU-000253	PCA-Morganfield 69 kV bus	195,681.40
SU-000254	PCA-Spencer Road	50,000.00
SU-000255	PCA-UK Med Center 69 kV bus	30,000.00
SU-000256	PGG-Pittsburg GG	300,000.00
SU-000257	PGG-Rogersville GG	166,640.00
SU-000258	PIN-Millersburg 69kV+	186,640.00
SU-000259	REL LaGrange E 897-605/615 MOS	71,360.00
SU-000281	REL Gtwn 669-605/615 MOS	81,333.36
SU-000309	RST-Lake Reba SSVT	60,209.68
SU-000310	RST-Lansdowne SSVT	60,209.68
SU-000316	PGG-Taylor Co. Fence	240,838.56
SU-000317	PGG-Pittsburg GG Audit	120,419.36
SU-000320	PRLY-Bonds Mill 604	23,956.76
SU-000321	PRLY-Bonds Mill 614	23,956.76
SU-000322	PCH-St Paul	264,567.56
SU-000326	PDFR-Pineville Transmission	59,891.92
SU-000328	PRTU-Bracken Co. EKP Tie	72,251.56
SU-000329	PRTU-Murphysville EKP Tie	72,251.56
SU-000330	PRTU-Whitley City	72,251.56
SU-000331	PRTU-Somerset EKP Tie	96,335.44
SU-000332	PRTU-Garrard KU Load on EKP	96,335.44
SU-000333	PRTU-Keoke TVA Load	96,335.44
SU-000334	PRTU-Owingsville KU Load on EK	96,335.44
SU-000343	TEP-MV Simpsonville-Finch. Bkr	257,565.96
SU-000344	TEP-Virginia City Reactor	352,357.78
SU-000349	TEP-Lemons Mill 69kV Cap Bank	477,548.96
SU-000351	TEP-Taylorsville 69kV Cap Bank	634,844.91
SU-000353	TEP-Spencer Road 69kV Cap Bank	881,311.03
SU-000364	REL-West Hickman Comm	64,850.59

SU-000371	PBR-Simmons (1) BKR	148,881.23
SU-000372	PBR-Rogersville Sw (3) BKR	511,289.98
SU-000373	PBR-S Paducah (4) BKR (PIN)	817,715.22
SU-000374	PBR_Clark Co (4) BKR (PIN)	947,252.87
SU-000375	PBR-Finchville (1) BKR	138,606.72
SU-000377	PBR-Lebanon W (1) BKR	229,251.55
SU-000378	PBR-Rumsey (1) BKR	92,695.30
SU-000389	PRLY-Spencer Rd 018-618	61,983.72
SU-000390	REL-IBM 617 MOS	20,661.19
SU-000393	TEP-Byle C-Vksdhl 69kV Trm Eq	5,865.13
SU-000394	TEP-Matnzas-Wilsn 161kV Trm Eq	12,246.76
SU-000395	RST-Lake Reba SSVT-	8,480.79
SU-000396	PPLC-Arnold PCA	204,098.27
SU-000397	PPLC-Dorchester 072-814 DCB	40,819.67
SU-000398	PPLC-Delvinta 139-804, 824 DCB	103,525.22
SU-000399	PPLC-West Irvine 193-608 DCB	65,742.52
SU-000400	PPLC-Lake Reba 163-658 DTT	40,819.67
SU-000401	PPLC-Lake Reba Tap 162-714 DTT	65,742.52
SU-000404	RTU-Beattyville	92,669.34
SU-000405	PCH-Lancaster	1,009,544.45
SU-000408	PCH-Boyle County	490,986.45
Grand Total		494,953,212.61

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 35

Responding Witness: Lonnie E. Bellar

- Q-35. Refer to the direct testimony of Lonnie E. Bellar, pages 16-17, wherein he describes the planned demolition of retired coal-fired generating units at several locations.
- a. Has the Commission previously approved the demolition of these units?
 - b. If the response to 12 (a), above, is in the affirmative, provide the Case Nos. in which Commission approval was received.
 - c. If the response to 12 (a), above, is in the negative, explain why the Companies have not yet sought Commission approval for each planned demolition.
- A-35.
- a. No, the Companies have not sought approval from the Commission for demolition of retired generation plant.
 - b. Not applicable.
 - c. The Companies informed the Commission of demolition projects at Paddy's Run, Cane Run, and Green River in Paul Thompson's testimony in the 2016 rate case proceedings. The Companies did not seek a Certificate of Public Convenience and Necessity ("CPCN") for these projects in 2016 and have not sought one here. Demolition of retired plant does not involve construction of new facilities within the purview of KRS 278.020. No provision of KRS Chapter 278 or Public Service Commission regulation expressly requires a utility to obtain Commission approval prior to the demolition of a utility facility. The Companies are not aware of any standing Commission Order requiring either Company to obtain such approval.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 36

Responding Witness: Lonnie E. Bellar / Robert M. Conroy

Q-36. Refer to the direct testimony of Lonnie E. Bellar, page 17, wherein he discusses a \$20.8 million capital project to replace an existing gas transmission line with a new line that "will be placed underneath the riverbed."

- a. Did the Companies request and receive a CPCN for this project?
- b. Provide the cost-benefit analysis conducted by the Companies to determine the efficacy of this project.
- c. Provide the expected remaining service life of the "Brown CT units."
- d. Is the replacement of the parapet wall of Dix Dam included in the referenced project and further included in the \$20.8M price tag?
- e. If the response to 13 (d), above, is in the negative, describe the parapet wall replacement project, including whether or not a CPCN was requested and received for the project and any cost-benefit or similar studies as to the reasonableness or need for same.

A-36.

- a. No. KRS 278.020(1) requires a utility to obtain a Certificate of Public Convenience and Necessity ("CPCN") only for construction that is not "an ordinary extension of an existing system in the usual course of business." The Public Service Commission's regulations define an extension in the ordinary course of business as an extension that does not create a wasteful duplication of plant, conflict with the existing certificates or service of other utilities operating in the same area or involve sufficient capital outlay to materially affect the existing financial condition of the utility or result in increased charges to the utility's customers.

The project did not require a CPCN as it met the regulatory definition of an extension in the ordinary course of business. It did not conflict with a certificate or existing service of another utility. It was a replacement for an existing gas pipeline that had to be relocated to perform necessary repairs to Dix Dam and

therefore was not a wasteful duplication of any existing facility. It did not constitute a material capital outlay.

- b. The Division of Water Dam Safety made the request to raise the height of the parapet wall back to the elevation that meets the Probable Maximum Flood requirements. In order to do this in a safe manner and with a design that meets the standards for parapet walls and a foundation for the wall that does not interfere with the pipeline, it was determined the gas pipeline would need to be relocated. Kentucky Utilities worked with two engineering firms to determine the best option for relocation. The options evaluated were a pipe bridge across the Dix River, boring Herrington Lake, and boring the Dix River. Boring the Dix River was chosen as it was determined to be the most cost effective solution with the least risk going forward for the Company. See attached. The information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

The analysis performed revealed the boring of the Dix River to be the least cost option. Results were as follows (NPVRR): Boring Dix River - \$21.3M; Boring Herrington Lake - \$23.6M; Dix River pipeline bridge - \$31.0M.

- c. The Company's current 30 year Business Plan reflects these units being operated throughout.
- d. The replacement of the parapet wall is a separate project that is budgeted to commence in the second half of 2020 and be completed in 2021. The current estimated cost is \$5.6M.
- e. KU did not request a CPCN for the replacement of the parapet wall as the project met the regulatory definition of an extension in the ordinary course of business and did not require a CPCN. It did not conflict with a certificate or existing service of another utility. It involved the replacement of a deteriorated wall and therefore was not a wasteful duplication of any existing facility. It did not constitute a material capital outlay.

The project came about due to the request of the Kentucky Division of Water Dam Safety to correct the deterioration of the parapet wall and to raise the height of the wall back to the elevation that meets the Probable Maximum Flood Criteria. In order to build the wall safely and with a standard design, it is necessary to remove the pipeline off the crest of the dam.

Investment and Contract Proposal for Investment Committee Meeting on: August 29, 2018

Project Name: Brown Combustion Turbine Site Gas Pipeline Relocation

Contract Name: Michels Corporation

Project seeking IC Approval: \$20,831k (Including \$2,000k contingency)

Contract Authorization Seeking IC Approval: \$14,097k (Including \$1,000k of contingency)

Total Contract Expenditures: \$13,097k

Project Number(s): 144541

Business Unit/Line of Business: Generation

Prepared/Presented By: Dave Beck / Greg Wilson

Executive Summary

This proposal requests approval for the Brown Combustion Turbine Site Gas Pipeline Relocation project and the contract for the installation of the pipeline. The pipeline will be installed underneath the Dix River using Horizontal Directional Drilling (HDD). The existing gas line is currently located on top of the dam three feet below the surface. Relocation of the line will ensure Dix Dam continues to meet the standard of care criteria for long-term planning of a major dam structure and will allow for the replacement of the parapet wall (a concrete barrier wall on top of the dam).

Other options considered for relocating the pipeline included a pipe bridge across the Dix River gorge downstream of the dam, crossing underneath Herrington Lake using HDD, and placing the line above ground on pillars across the back of the dam. However, those options did not address all the concerns regarding safety, maintenance, and reliability associated with relocating the gas line and replacing the parapet wall. Additionally, removing the pipeline from the dam eliminates all risk associated with the pipeline and dam having an adverse impact on each other.

The total estimated project spend is \$20,831k. This is a 42%, or \$6,191k increase over the original estimated project amount of \$14,640k in the 2018 BP, including an incremental \$42k in 2017, \$784k in 2018 and \$5,365k in 2019. The additional \$6,191k is primarily a result of bids for materials and labor coming back higher than what had been budgeted. Through the second quarter of 2018, spend of \$522k for engineering services has been incurred. The 2018 forecast was approved by the Corporate Resource Allocation Committee in the 5-and-7 forecast. The 2019 spend and full project authorization request is included in the proposed 2019 Business Plan.

This project is not ECR recoverable and has been reviewed by legal, outside counsel, and State Rates and Regulatory, indicating this project "will be in the ordinary course of business and not require a CPCN from the KPSC."

Background

To ensure compliance with Kentucky Division of Water (KYDOW) Dam Safety regulations, the parapet wall on Dix Dam needs to be replaced, and the safest way to accomplish this task while maintaining operational reliability to the BRCT Site is to relocate the gas transmission line off the top of the dam. Additionally, the removal of the pipeline from the dam eliminates the risk of either component having an adverse impact on each other.

Dix Dam was built from 1923 to 1925. Since that time, surveying has been used to continuously monitor the dam for movement. In 1981, an engineering inspection was performed on Dix Dam that indicated the height of the dam was deficient due to settling that had occurred over the years. Based on this finding, a parapet wall was installed on the top of Dix Dam to raise the crest of the dam to an elevation that met the Probable Maximum Flood (PMF) criteria.

When the EW Brown Combustion Turbine site was built in 1991, the gas transmission line (which supplies the facility) was installed across Dix Dam and trenched three (3) feet below the crest of the dam. An inspection was performed in 2013 by the KYDOW Dam Safety, and the report noted the parapet wall has reached the end of its design life and needs to be replaced. A project was initiated and placed in the budget to address the wall. However, major safety concerns regarding the close proximity to the gas transmission line revealed the gas line needed to be relocated in order for the wall to be safely replaced.

Relocating the gas line off the crest of Dix Dam will allow the parapet wall to be replaced safely by eliminating the risk associated with the gas pipeline. Safety, maintenance, and reliability of both the dam and pipeline will be maintained by this project.

- **Alternatives Considered**

1. Recommendation: NPVRR: (\$000s) \$21,341
HDD Dix River Crossing
 This is the least-cost option affecting the least amount of land owners.
2. Alternative #1: NPVRR: (\$000s) \$31,004
Dix River Pipe Bridge
 This option will require continued maintenance—such as surveying, painting and bridge inspections—to maintain the pipeline integrity when finished.
3. Alternative #2: NPVRR: (\$000s) \$23,585
HDD Lake Herrington Crossing
 The Herrington Lake crossing is a longer crossing which would require twice as many land easements and additional pipe to execute the project.
4. Alternative #3: NPVRR: (\$000s) \$37,312
Do Nothing
 This option is not a practical approach as it could lead to fines, legal fees, public scrutiny, the KYDOW sending the issue to enforcement, and ultimately, project execution at a much higher cost.

Project Description

- **Project Scope and Timeline**

The BRCT Site gas relocation project involves performing HDD on the downstream side of Dix Dam going under Dix River. Trenched pipe will also be installed on either side of the drill entry/exit location to tie back into the existing pipeline. The new mile and half (1.5) long section of pipe will increase in diameter from the current 20" to 30" due to flow and pressure drop concerns. The increase in diameter will also allow for future expansion of gas generation at E.W. Brown if needed. The current operating parameters for the units will not change with the execution of this project.

In addition, new land easements (three permanent and three temporary) are needed for this project as the new gas line will no longer follow the current electric transmission line easements (approximately one mile).

9/14/2017	Geotechnical work started
10/23/2017	Geotechnical report received
11/14/2017	Project feasibility meeting with driller at Brown
1/1–4/2/2018	Work scope package developed
4/2/2018	Land and easements acquired
4/13/2018	Request for quote sent to bidders
4/17/2018	Installation prebid meeting
5/18/2018	Lump sum installation bids received
5/30/2018	Follow-up discussions with Michels
6/8/2018	Material (pipe) quotes obtained
8/2018	Investment Committee Meeting
8/2018	Send request for quote for bill of materials (BOM)
9/2018	Place BOM order
9/2018	Award installation contract to Michels
3/2019	Construction begins
9/2019	Construction ends
10/2019	Final tie-ins completed

- **Project Cost**

The total cost of the project is \$20,831k with a \$2,000k (10.6%) in contingency. \$1,000k of the contingency is included in the contract as described in Contract Financial Summary. The other \$1,000k will serve as contingency for the remainder of the project, including pipe, materials, and inspection services. Lump sum pricing was obtained for both installation and material with material quotes being valid for only seven (7) days due to daily fluctuation of steel prices.

CONFIDENTIAL INFORMATION REDACTED**Economic Analysis and Risks**

- **Contract Description**

After completion of formal bidding, it is recommended that a contract be awarded to Michels Corporation (Michels) for the complete installation of the relocated gas pipeline as the low cost bidder. Michels will provide all labor, equipment, and supervision. KU shall provide the piping materials for completion of the work. Michels' contract pricing will be on a lump sum basis. Michels Corporation has signed a negotiated General Commercial Agreement, which will serve as the governing terms and conditions for the contract. The contract shall include milestone progress payments, liquidated damages tied to schedule adherence, and a requirement for Michels to provide to KU letters of credit for milestones paid prior to mobilization. Onsite work shall begin in March 2019 and be completed by October 15, 2019. The contract will be executed upon IC approval in September to allow Michels to begin pre-mobilization work including operator qualification testing and welding certifications.

- **Bid Summary**

KU partnered with EN Engineering (ENE) to design and develop a complete work scope installation package that was issued for bid on April 13, 2018, and a pre-bid meeting was held on April 17th, 2018. Michels Corporation, Mears Group, Inc., and Laney Directional Drilling Co. were asked to participate in the bidding process as they are considered the top directional drillers in the nation. Lump sum bids were received on May 18, 2018. A bid analysis performed by both KU and EN Engineering revealed that Michels Corporation was the successful bidder. KU, ENE, and Michels discussed the bid on May 30, 2018, which included a list of detailed questions to ensure bid validity. Below is a summary of the bids received:

Description	
MBE/WBE	
Exceptions & Clarifications	
30" HDD of Dix River	
Trench / Cathodic Protection	
Garrard Launcher/Receiver Station	
Brown Receiver Station	
Total Cost (\$000s)	

- **Contract Financial Summary**

Construction of the project was bid as lump sum. However, this project has some unique challenges. Even though all foreseen risks have been evaluated, the ability to completely eliminate them is not possible, so a 7.7% contingency (\$1,000k) was added to the original construction bid submitted by Michaels Corporation.

Contract expenses (\$k)	2018	2019	Total
Amount requested based on contract award estimates	\$3,337	\$9,760	\$13,097
Contingency Amount Requested	\$0	\$1,000	\$1,000
Total contract authority requested	\$3,337	\$10,760	\$14,097

• **Project Financial Summary**

Financial Detail by Year - Capital (\$000s)	2017	2018	2019	Post 2019	Total
1. Capital Investment Proposed	284	4,599	15,868	-	20,751
2. Cost of Removal Proposed			80	-	80
3. Total Capital and Removal Proposed (1+2)	284	4,599	15,948	-	20,831
4. Capital Investment 2018 BP	242	3,815	10,183	-	14,240
5. Cost of Removal 2018 BP	-	-	400	-	400
6. Total Capital and Removal 2018 BP (4+5)	242	3,815	10,583	-	14,640
7. Capital Investment variance to BP (4-1)	(42)	(784)	(5,685)	-	(6,511)
8. Cost of Removal variance to BP (5-2)	-	-	320	-	320
9. Total Capital and Removal variance to BP (6-3)	(42)	(784)	(5,365)	-	(6,191)

Financial Detail by Year - O&M (\$000s)	2017	2018	2019	Post 2019	Total
1. Project O&M Proposed					-
2. Project O&M 2018 BP					-
3. Total Project O&M variance to BP (2-1)	-	-	-	-	-

The 2018 BP was locked mid-year of 2017, leaving the budget at \$242k for 2017. The actuals for 2017 ended up being \$284k, which was spent for an engineering estimate.

Financial Summary (\$000s):

Discount Rate:	6.59%
Capital Breakdown:	
Geotechnical Labor:	\$171
Contract Labor:	\$13,097
Surveying / NDT Testing	\$710
Materials:	\$3,312
Land (New Easements)	
Permanent	\$60
Temporary	\$10
Engineering:	\$543
Taxes & Burdens:	\$814
Contingency:	\$2,000
Environmental:	\$114
Net Capital Expenditure:	\$20,831

- **Assumptions**

Assumptions in the capital evaluation model include modified pricing from a feasibility study conducted in 2015. Bid costs for material and construction were significantly higher than costs estimated in the study. Also, higher costs were estimated in the model for the HDD crossing Lake Herrington due to land acquisitions and construction noise, which the feasibility study did not adequately reflect.

The do-nothing case assumed the company would endure legal complications as a result of KYDOW sending the issue to enforcement with an end result of project completion in a later year at a higher cost. The modeled assumption is the company would have to repair the parapet wall on an expedited basis which could potentially result in an extended shutdown of the BRCT Site.

- **Environmental**

Listed below are the permitting requirements for this project.

Federal

- US Army Corps of Engineers Section 404 permitting (will require Delineation of “Waters of the United States” within project area to determine what permitting tract is appropriate)
 - USACE review will include US Fish & Wildlife consultation to determine if there are any impacts to Threatened and Endangered Species associated with the project.
 - USACE review will include State Historic Preservation Office consultation to determine if there are any impacts to Cultural Resources associated with the project.

State

- Kentucky Division of Water - Section 401 Water Quality Certification - determination required to see if project can proceed under Nationwide Permit #12 or requires and Individual Water Quality Certification.
- Kentucky Division of Water – Floodplain Branch – determination required to see if Construction in a Stream (Floodplain Permit) is required.
- Kentucky Division of Water – Kentucky Pollution Discharge Elimination System (KPDES) – General Construction Storm water Permit – Storm water Pollution Prevention Plan (SWPPP) required if over 1 acre is disturbed along with Notice of Intent for use of the General Storm water Permit.
- Kentucky Division of Water – Hydrostatic Discharge Request – Authorization under KPDES program for Hydrostatic Discharge.
- Kentucky Division of Waste Management – Proper disposal of materials generated from project (drilling mud, etc.).

Local

- Based on location and scope of project there does not appear to be ordinances that would require additional erosion controls/permitting in addition to KPDES permit requirements.

New Source Review Evaluation questions 1-8 must all be completed on all investment proposals.		
#1	Does the project include any new equipment or component with air emissions or result in air emissions not previously emitted?	No
#2	Does the project involve equipment that is part of a regulated air emission unit? a. Is change a like-kind or functionally equivalent replacement?	No
#3	Does the project increase through-put with any of the material handling systems?	No
#4	Will the project affect the dispatch order or utilization of the unit?	No
#5	Does the project increase the emissions unit's maximum hourly heat input?	No
#6	Does the project increase the emissions unit's electrical output (gross MW)?	No
#7	Has the equipment or component in question been repaired or replaced in the past at this unit? a. Provide frequency or when equipment or component in question was last repaired or replaced.	No
#8	Have there been forced outages or unit derates in the past 5 years due to this component of the equipment? a. Provide GADS data of derates and forced outage for each of the last 5 years applicable to the project.	No

Environmental Affairs has reviewed and signed off on this project.

- **Risks**

Cost and Schedule - The most significant risk to cost associated with this project is encountering a large karst (cave) feature that would impact drilling operations and result in delays and possible change orders. Likewise, not completing this project could have the potential risk of the Kentucky Division of Water Dam Safety turning their findings over to enforcement, which could have many adverse ramifications—including negative press. Another risk which could impact overall project cost is the current situation of fluctuating steel prices. As stated earlier, some recent quotes for pipe have returned with a validity for only seven (7) days.

Financials and Legal – Michels Corporation has been recommended for contract award for the horizontal directional drilling associated with the project. A credit review of Michels Corporation's 2016 and 2017 audited financial statements was completed by Credit and Contract Administration to determine if financial risks were present. With a credit model score of 1.88, Michels Corporation is rated as "Very Good". Therefore, based on a sixty year history, solid equity, and profitability, the credit review indicates no financial risk and that Michels Corporation is an acceptable contractor from a financial risk perspective. The contract shall include requirements for Letters of Credit for milestone payments made prior to mobilization and shall be executed under the parent company, Michels Corporation for maximum financial leverage if necessary. A negotiated LKE General Commercial Agreement shall govern the contract.

Conclusions and Recommendation

It is recommended the Investment Committee approve the Brown Combustion Turbine Site Gas Pipeline Relocation project for \$20,831k as well as the contract with Michels Corporation for \$14,097k to relocate the gas transmission line located on top of Dix Dam. Execution of this project and contract will allow for future replacement of the parapet wall under a separate project and contract.

Approval Confirmation for Capital Projects Greater Than \$2 million and Contract Authority Greater Than \$10 million bid, or \$2 million sole sourced:

The Capital project spending and contract authority requests included in this Investment Proposal have been approved by the members of the LKE Investment Committee. Pursuant to the LKE Authority Limit Matrix, the signatures below are also required for approval of the capital project and contract authority spending requests

DocuSigned by:
Kent Blake
9/14/2018 | 5:48 AM
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Kent W. Blake
Chief Financial Officer
Date

DocuSigned by:
Paul Thompson
9/14/2018 | 9:28 AM EDT
57E11AF682314EE...

Paul W. Thompson
Chairman, CEO and President
Date


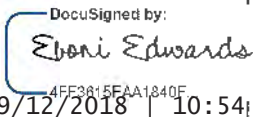
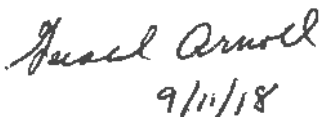
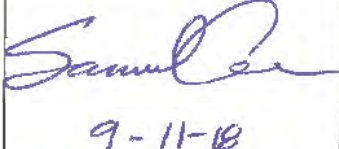
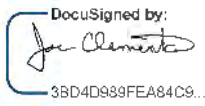
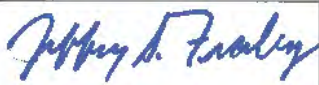
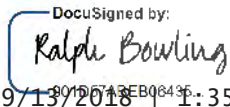
AWARD RECOMMENDATION APPROVALS
– Attachment for IC Proposal

SUBJECT:

Brown Combustion Turbine Site Gas Pipeline Relocation Project and Michels Corporation Contract

Please see the attached Investment Proposal for information related to this contract authority request and additional approvals.

RECOMMENDATION/APPROVAL The signatures below recommend that Management approve the Brown Combustion Turbine Site Gas Pipeline Relocation Project and the Michels Corporation Contract.

Sourcing Leader		Proponent/Team Leader Greg L. Wilson	 9/10/18
Supplier Diversity Manager Ebony Edwards	 9/12/2018 10:54 AM EDT	Manager Gerald T. Arnold	 9/11/18
Manager - Supply Chain or Commercial Operations Samuel D. Carr	 9-11-18	Director – Supply Chain or Commercial Operations Joseph F. Clements	 9/12/2018 3:50 PM EDT
Director Jeffery S. Fraley		Vice President Ralph D. Bowling	 9/13/2018 1:35 PM EDT

Note: For Contract Proposals greater than \$10 million bid, or greater than \$2 million sole sourced, additional required approvals are included as part of the attached Investment Proposal.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 37

Responding Witness: Lonnie E. Bellar / Robert M. Conroy

- Q-37. Refer to the direct testimony of Lonnie E. Bellar, pages 17-18, wherein he describes the gypsum dewatering project at Mill Creek.
- a. Provide a citation to the Case No. in which the Companies requested and received approval for this project.
- A-37.
- a. KU is not a party to this project.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 38

Responding Witness: Lonnie E. Bellar

Q-38. Refer to the direct testimony of Lonnie E. Bellar, pages 36-37, wherein he discusses the Companies' TSIP and investment in their "aging and deteriorated transmission system infrastructure."

- a. Explain, in complete detail, how the Companies prioritize transmission upgrades and enhancements, including the weighting and criteria used.
- b. Provide the current ten (10) most prioritized transmission upgrades, replacements or enhancements, whether or not those projects are included in the TSIP. Each project should indicate the size and scope of the project, including the estimated capital and O&M costs, and note whether the project is included in the Companies' TSIP.

A-38.

- a. The Companies prioritize transmission upgrades and enhancements (projects) based on factors such as safety, regulatory requirements, asset management, reliability and operational need.

Projects required to meet regulatory standards, including NERC Reliability Standards and Open Access Transmission Tariff requirements, take precedent over other projects.

As described in Lonnie Bellar's testimony, the Companies have an obligation to maintain transmission assets for the long term health and reliability of the system. Prioritization of proactive replacements and reliability projects is discussed in detail in the Annual TSIP Report filed with the Commission.¹¹

Additionally, the Companies place a high priority on keeping their Energy Management System up-to-date, ensuring adequate level of critical spare equipment, and improving physical security at higher risk substations.

¹¹ LG&E and KU Transmission System Improvement Plan Annual Report, filed in Post Case Referenced Correspondence, Case No. 2016-00370, June 1, 2018, at p.6.

- b. The Companies do not prioritize projects in rank order and therefore do not have a list of the ten most prioritized projects. See attachment for a list of current and planned Transmission Expansion Plan projects that are driven by NERC reliability standards and the Companies' Transmission Planning Guidelines or Open Access Transmission Tariff requirements and are therefore higher in priority.

Case No. 2018-00294
Attachment to Response to AG-1 Question No. 38b
Page 1 of 4
Bellar

Project #	Description	Project Cost, \$000s						
		2018 and Prior	2019	2020	2021	2022	2023 Total	
135400	Rebuild the 3.37 miles of 795 MCM AA in the Aiken to Eastwood West section of the Aiken to Eastwood to WHAS 69kV line using 954 MCM ACSR.	-	-	144	1,444	1,300	-	2,888
139984	Replace 7.16 miles of 397.5 MCM 26X7 conductor in the Middletown to Mid Valley Simpsonville 69 kV line including the line risers, using 795 MCM 26X7 ACSR or better conductor.	-	-	-	-	-	387	387
139991	Replace 5.13 miles of 397.5 MCM 26X7 ACSR conductor in the Mid-Valley Simpsonville to Finchville section of the Middletown to Finchville 69 kV circuit with 795 MCM ACSR or better conductor and replace the 1200 A 69kV breaker and CTs at Finchville with 2000 A breaker.	-	78	3,030	-	-	-	3,108
140440	Reconductor the 1.78 miles of 795 MCM 61XAA in the Brooks EK Tap to South Park 69 kV line section to 795 MCM ACSR and MOT the 0.21 miles of 840.2 MCM 24X13 ACAR to 212F.	172	2,837	-	-	-	-	3,009
144065	Replace 2.86 miles of 266.8 MCM 26X7 ACSR conductor in the Adams - Delaplain Tap section of the Adams - Oxford 69 kV line. Use 397.5 MCM 26X7 ACSR or better.	156	3,606	-	-	-	-	3,762
144070	Increase the MOT of the 266.8 kCM ACSR in the Elizabethtown - Elizabethtown #2 Tap section (2.24 mi. 176F), in the Elizabethtown - Rogersville 69 kV line, to 212F.	-	-	19	728	-	-	747
144083	Increase the MOT of the 954 ACSR in the KU Park to Pineville 69 kV line to 212F. (0.16 mi)	-	30	120	-	-	-	150
144108	Install a 69 kV, 9 MVAR capacitor bank at Paint Lick.	131	753	-	-	-	-	883
144330	Add breaker to West County MSD	1,164	-	-	-	-	-	1,164
144488	Replace 138/69 kV, with a 90 MVA transformer at Rodburn; put existing Rodburn 60 MVA at Farmers; replace two breakers at Rodburn due to breaker duty overloads.	709	-	-	-	-	-	709
145803	Reconductor the 2/0 7X CU 3.84 mi with 556.5 MCM 26X7 ACSR or better in the Clay Village Tap to Shelbyville East section of the Shelbyville to West Frankfort 69 kV line.	-	100	3,649	-	-	-	3,749
147219	Replace 138kV terminal equipment rated less than or equal to 1200 Amps (287 MVA) winter emergency rating associated with the Hardinsburg to Black Branch 138kV line with equipment capable of a minimum of 1363 Amps (326 MVA) winter emergency rating.	561	-	-	-	-	-	561
147227	Install a 69 kV, 26.4 MVAR capacitor bank at the KU Hodgenville #744 station.	-	-	-	1,511	-	-	1,511
147228	Replace existing 69 kV terminal equipment rated 1556 amps (186 MVA) or less WE associated with the Elizabethtown 138/69 kV transformer (low-side bushing CT of the transformer and any other equipment rated less than 1556 amps), with equipment capable of 2083 amps WE. Replace existing 138 kV terminal equipment rated 806 amps (193 MVA) or less WE associated with the Elizabethtown 138/69 kV transformer (high-side switch and any other equipment), with equipment capable of 1042 amps WE.	-	150	675	-	-	-	825
147244	Increase the MOT of the 336.4 MCM 19X AA conductor in the Ethel to Nachand 69 kV line (circuit 6670) to 212 deg. F.	2,037	-	-	-	-	-	2,037
147250	Increase the MOT of the 556 ACSR conductor in the Dix Dam to Buena Vista section of the Dix Dam to Lancaster 69 kV line to 212 deg. F.	-	250	-	-	-	-	250
151466	Add redundant bus differential and lockout relays at the Middletown 345 kV bus. A fault on 345 kV bus followed by relay or protection failure causes low voltage violations and overloads.	428	18	-	-	-	-	446
151739	Replace 69kV terminal equipment rated less than or equal to 600 Amps (72 MVA) winter emergency rating associated with the Bonds Mill to Lawrenceburg Tap 69kV line with equipment capable of a minimum of 806 Amps (96 MVA) winter emergency rating.	-	-	-	-	110	-	110
153518	Replace 138/69 kV, with a 90 MVA transformer at Rodburn; put existing Rodburn 60 MVA at Farmers; replace two breakers at Rodburn due to breaker duty overloads.	571	-	-	-	-	-	571
153954	Increase the MOT of the 397.5 ACSR in the Princeton to Walker 69 kV line from 130F to 140F (15.12 mi)	389	-	-	-	-	-	389
156518	Install a 0.66% 345 kV reactor at Trimble County in the Trimble County - Clifty 345 kV line.	546	2,355	-	-	-	-	2,901
156806	Add redundant bus differential and lockout relays at Cane Run 138 kV buses. A fault on 138 kV bus followed by relay or protection failure causes low voltage violations and generators to slip a pole.	742	-	-	-	-	-	742
156819	Add redundant bus differential and lockout relays at West Lexington 138 kV buses. A fault on 138 kV bus followed by relay or protection failure causes low voltage violations and generator instability.	193	-	-	-	-	-	193
156820	Add redundant bus differential and lockout relays at Trimble Co. 345 kV bus. A fault on 345 kV bus followed by relay or protection failure causes low voltage violations and overloads.	504	25	-	-	-	-	529

Case No. 2018-00294
Attachment to Response to AG-1 Question No. 38b
Page 2 of 4
Bellar

Project #	Description	Project Cost, \$000s						
		2018 and Prior	2019	2020	2021	2022	2023 Total	
157188	Replace 1.4 miles of 1272 MCM 61X AA conductor in the Ashbottom - Southpark 69 kV line, using 1272 MCM 45X7 ACSR or better conductor.	-	-	144	1,247	1,008	-	2,399
157193	Replace the 2.80 miles of 392.5 MCM 24X13 ACAR conductor in the Upper Mill Creek - Riverport 69 kV line section, using 397.5 MCM 26X7 ACSR or better conductor.	-	-	145	1,257	1,015	-	2,417
157200	Increase the MOT of the 556.5 MCM 26X7 ACSR conductor (5.25 mi.), from 145 °F to 160 °F in the Bimble to Emanuel section of the Bimble to London 69 kV line.	-	-	50	975	-	-	1,025
157201	Increase the MOT of the 556.5 MCM 26X7 ACSR conductor (0.02 mi.) in the Bimble - Hinkle 69 kV line section, to a minimum of 160°F.	-	-	50	-	-	-	50
157202	Increase the thermal operating temperature of the 795 MCM 26x7 ACSR (23.61 mi) in the Ghent to Blackwell 138 kV line to at least 160°F.	-	50	970	-	-	-	1,020
157203	Increase the MOT of the 556.5 MCM 26X7 ACSR (5.83 mi.) in the Campground - London 69 kV line section, to a minimum of 140 degree F.	-	50	970	-	-	-	1,020
157204	Increase the MOT of the 397.5 ACSR conductor in the Crittenden to Marion S 69 kV from 140°F to 150°F (1.56 mi).	-	25	485	-	-	-	510
157205	Increase the MOT of the 12.46 mi of 397.5 ACSR in the Kentucky Dam (TVA) to Eddyville Prison tap 69 kV line to 212°F.	-	100	1,939	-	-	-	2,039
157206	Increase the maximum operating temperature of the 397.5 MCM ACSR conductor on the Finchville to Southville 69kV section of the Finchville to Bonds Mill 69kV line to at least 160°F	-	25	485	-	-	-	510
157208	Increase the MOT of the 397.5 MCM 26X7 ACSR conductor in the Walker - Hardesty B 69 kV circuit (connected to Walker breaker 123-644), to a minimum of 140 °F.	-	5	-	-	-	-	5
157209	Rebuild the existing double 69 kV circuits from KY Dam to South Paducah, on the existing structures. Resulting configuration will be a single 69 kV circuit, using 397.5 MCM 26X7 ACSR or better conductor.	-	25	302	486	-	-	812
157210	Increase the MOT of the 397.5 MCM 26X7 ACSR conductor (3.81 mi., 165°F) in the La Grange East - Penal Tap section of the Eminence - Centerfield 69 kV line, to a minimum of 176°F.	-	75	1,455	-	-	-	1,530
157211	Construct a new 4.07 mile 69 kV line from Lebanon to Lebanon South using 556.5 MCM 26x7 ACSR. Project 992 adds a ring bus at Lebanon South which should be built in conjunction with this project.	-	150	510	3,938	3,068	-	7,666
157215	Increase the maximum operating temperature of the 397.5 MCM ACSR conductor on the Southville to Bonds Mill 69kV section of the Finchville to Bonds Mill 69kV line to at least 150°F.	-	50	970	-	-	-	1,020
157245	Increase the MOT of the 636 MCM 24X7 ACSR conductor (0.66 mi. at unverified 176°F) to minimum 190°F, and the 795 61X AA conductor (1.67 mi. at unverified 165°F) to a minimum 176°F, in the Oxmoor to Breckenridge 69 kV line (6653).	-	-	70	1,333	-	-	1,403
157690	Increase the MOT of the 397.5 MCM 26X7 ACSR conductor (6.28 mi.) in the Marion - Mexico section of the Princeton - Crittenden County 69 kV line, to a minimum of 140F.	-	-	50	1,200	-	-	1,250
157691	Install a second West Lexington 450 MVA, 345/138 kV transformer and necessary 345 kV breakers to create a 345 kV ring bus configured such that the two transformers do not share a single breaker. Reconfigure the Brown N to West Lexington and Ghent to W Lexington 345 kV lines as necessary	-	-	10	240	-	-	250
157692	Replace 7.34 miles of 795 MCM 26X7 ACSR conductor in the West Lexington - Haefling 138 kV line, using high-temperature conductor capable of at least 1500 A.	-	-	150	5,350	-	-	5,499
157693	Replace 5.19 miles of 795 MCM 26X7 ACSR conductor in the West Lexington - Viley Road section of the West Lexington - Viley Road - Haefling 138 kV line, using high-temperature conductor capable of at least 1500 A.	-	-	150	3,850	-	-	3,999
157736	Replace the 69 kV terminal equipment rated equal to or less than 688 amps SE at Georgetown with equipment capable of a minimum of 992 amps SE, and increase the MOT of the 556.5 ACSR line conductor in the Adams to Georgetown section of the Adams to Haefling 69 kV line to 212°F.	13	323	-	-	-	-	336
157806	Replace the existing 138/69kV transformer at Hardin Co with a 138/69 kV, 185 MVA transformer. Replace the 69 kV Breaker and terminal equipment rated less than 2000 amps WE associated with breaker 178-608 at Hardin County with equipment at minimum capable of 2686 amps WE.	-	-	35	965	-	-	1,000
LI-000081	Reconductor 1.37 miles of 397.5 MCM 26x7 ACSR conductor in the Bardstown - Bardstown Industrial Tap section of the Bardstown - EKPC East Bardstown 69 kV line using 556.5 MCM 26X7 ACSR.	-	-	-	-	-	100	100

Case No. 2018-00294
Attachment to Response to AG-1 Question No. 38b
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Bellar

Project #	Description	Project Cost, \$000s					2023 Total
		2018 and Prior	2019	2020	2021	2022	
LI-000083	Replace 1.94 miles of 266.8 MCM 18X1 ACSR and 0.27 miles of 266.8 MCM 26X7 ACSR conductors in the Loudon Avenue to Hume Road Tap section of the Loudon Avenue - Winchester 69 kV line, with 397 MCM 26X7 ACSR or better conductor.	63	1,366	-	-	-	1,429
LI-000084	Increase the MOT of the 556.5 ACSR Conductor to 160F and 266.8 Conductor to 212F in the Somerset EKPC to Somerset So section of the Somerset EKPC to Russell Co EKPC 69 kV line	-	-	-	-	-	50
LI-000085	Increase the MOT of the 266 kCM 26X7 ACSR in the Greensburg-Campbellsville EKPC section of the Green County EKPC-Taylor County 69 kV line from 176F to 212F (8.9 miles).	88	1,045	-	-	-	1,133
LI-000086	Replace 1.86 miles of 336.4 MCM 26X7 ACSR conductor in the Eastwood - Simpsonville 69 kV line of the Eastwood - Shelbyville 69 kV line, using 556.5 MCM 26X7 ACSR conductor.	50	1,345	-	-	-	1,395
LI-000087	Increase the confirmed MOT of the bundled 795 MCM 45x7 ACSR in the Ashbottom to Cane Run Switch 138 kV line from 150 F to 155F (8.04 mi).	-	-	-	-	65	2,583
LI-000088	Replace the 795 AA conductor in the Ford to Freys Hill J section of the Worthington to Freys Hill to Ford Tap to Ford 69 kV line with 795 ACSR 26X7, rated at 212F	-	50	2,083	-	-	2,133
LI-000090	Increase the MOT of the 3/0 6X1 ACSR conductor in the Skylight to Harmony Landing 69 kV line to 212 deg. F.	-	10	-	-	-	10
LI-000091	Increase the MOT of the 556.5 MCM 26X7 ACSR conductor in the Green River - Shavers Chapel 69 kV line to a minimum rating of 140°F (8.51 miles).	19	236	-	-	-	255
LI-000092	Increase the MOT of the 397.5 ACSR conductor in the Morganfield 4 to Wheatcroft tap section of the Morganfield to Nebo 69 kV line from 125F to 135F (14.90 mi)	25	2,138	-	-	-	2,163
LI-000093	Increase the MOT of the 3/0 6X1 ACSR conductor (10.12 mi. @ 120 F), in the Science Hill to Floyd Tap to Waynesburg 69 kV line to a minimum thermal rating of 130 F.	25	210	-	-	-	235
LI-000094	Re-conductor 0.84 miles of 266.8 MCM 26x7 ACSR in the Green Co to Greensburg section of the Green Co to Taylor Co 69 kV line using 397.5 MCM 26x7 ACSR. Coordinate terminal equipment upgrade at EKPC's Green County substation.	-	50	699	-	-	749
LI-000095	Increase the MOT of the 556.5 MCM 26x7 ACSR conductor in the KU Park-Stinking Creek 69 kV line to at least 170 deg. F (3.52 miles)	-	50	550	-	-	600
LI-000096	Increase the MOT of the 397.5 MCM 26x7 ACSR conductor in the Wofford-Rockhold 69 kV line to 145 deg. F (4.36 miles)	-	50	699	-	-	749
LI-000098	Increase the MOT of the 556.5 MCM 26X7 ACSR conductor (3.69 mi.), in the Hinkle - Stinking Creek 69 kV line section, to a minimum of 170 degree F.	-	25	485	-	-	510
LI-000099	Replace 0.38 miles of 266.8 kCM 26X7 ACSR conductor in the Campbellsville 2 Tap to Taylor County section of the Lebanon to Taylor County 69 kV line, using 556 kCM 26X7 ACSR or better conductor.	-	755	-	-	-	755
LI-000100	Increase the MOT of the 795 MCM 26X7 ACSR to 176 F in the Nelson County to Elizabethtown 138 kV line.	-	-	53	472	-	525
LI-000102	Construct Elizabethtown - Hardin Co 69 kV #2 using 1272 MCM ACSR 26X7 conductor.	-	-	38	1,461	-	1,499
LI-000106	Increase the MOT of the 397.5 ACSR in the Fairfield-Taylorville EK Tap section of the Finchville-Bardstown 69 kV line from 135F to 140F (5.89 mi)	25	310	-	-	-	335
SU-000099	Install a 11.7 MVAR, 69 kV capacitor bank at Somerset South.	-	1,034	-	-	-	1,034
SU-000181	Replace the 69kV terminal equipment rated less than 810 amps WE associated with breaker 108-634 at Adams on the Adams to Delaplain tap 69 kV line with equipment at minimum capable of 900 amps winter emergency rating.	217	4	-	-	-	221
SU-000188	Replace the 1200A breaker (213-604) at Boonesboro N and associated breaker CTs with equipment capable of 2000A	191	-	-	-	-	191
SU-000191	Replace the 600 amp switches associated with the Carrollton-Lockport 138kV line with 1200 amp switches.	-	-	35	-	-	35
SU-000195	Change the 800A CT settings on breakers 96-608 and 96-618 associated with the 161/69 kV transformers at Elihu to 1200A.	-	5	-	-	-	5
SU-000196	Replace 600A hookstick disconnects (034-654L & 034-654B) and gang-operated switch 811-605 associated with breaker 34-654, with 1200A equipment at Etown associated with Etown to Etown 4 69 kV line.	-	50	-	-	-	50
SU-000198	Replace the 600A 69 kV meter CT at Farley associated with the Farley - Liberty Church 69 kV line with 1200A equipment.	130	-	-	-	-	130
SU-000199	Change the setting of the 69kV CT associated with the Haefling-Spindletop 69kV line to 1200 amps	-	5	-	-	-	5
SU-000203	Construct Elizabethtown - Hardin Co 69 kV #2 using 1272 MCM ACSR 26X7 conductor	-	1,000	2,999	7,385	1,999	13,383

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Attachment to Response to AG-1 Question No. 38b
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Bellar

Project #	Description	Project Cost, \$000s						
		2018 and Prior	2019	2020	2021	2022	2023 Total	
SU-000205	Install a new capacitor bank at or near Meredith 138kV with a maximum size of 30 MVAR. This may require special equipment to implement and special control systems.	464	303	-	-	-	767	
SU-000206	Install a 69 kV, 18.0 MVAR capacitor bank at Middlesboro #780.	335	250	-	-	-	585	
SU-000217	Replace the 69 kV transformer CT on the Tyrone 138/69 kV transformer with at least a 1200 amp CT	-	5	-	-	-	5	
SU-000236	Replace the 600 amp switches associated with the Georgetown-Lemons Mill 69kV line	263	-	-	-	-	263	
SU-000246	Replace the existing 138/69kV, 93 MVA transformer at Bardstown. Planning determined a minimum transformer with top nameplate rating of 120 MVA using 8% impedance based on that rating. Also, replace the 69kV terminal equipment rated 1200 amps or less SE with equipment capable of a minimum 1250 amps SE.	510	-	-	-	-	510	
SU-000248	Construct Elizabethtown - Hardin Co 69 kV #2 using 1272 MCM ACSR 26X7 conductor.	-	25	-	-	-	25	
SU-000343	Replace 5.13 miles of 397.5 MCM 26X7 ACSR conductor in the Mid-Valley Simpsonville to Finchville section of the Middletown to Finchville 69 kV circuit with 556.6 MCM ACSR or better conductor.	-	30	284	-	-	314	
SU-000344	Install a 69 kV, 4.5% reactor at Virginia City on the Virginia City to Bond 69 kV line	-	100	378	-	-	478	
SU-000345	Install a second West Lexington 450 MVA, 345/138 kV transformer and necessary 345 kV breakers to create a 345 kV ring bus configured such that the two transformers do not share a single breaker. Reconfigure the Brown N to West Lexington and Ghent to W Lexington 345 kV lines as necessary	-	-	250	2,749	7,249	2,999	13,246
SU-000347	Replace the existing 345/161 kV, 240 MVA transformer at Blue Lick with a 450 MVA transformer, reset/replace any CTs less than 2000 amps and increase the loadability of relays.	-	-	200	3,513	-	-	3,714
SU-000348	Install a 69 kV, 14.4 MVAR capacitor bank at Bonnieville.	-	-	103	552	-	-	656
SU-000349	Install a 69 kV, 33.6 MVAR capacitor bank at Lemons Mill	-	219	1,016	-	-	-	1,234
SU-000350	Install a 69kV, 38.4 MVAR capacitor bank at Okonite.	-	-	216	948	-	-	1,164
SU-000351	Install a 16.8 Mvar capacitor bank at Taylorsville KU 69kV	-	247	955	-	-	-	1,202
SU-000352	Install a 69 kV, 16.2 MVAR capacitor bank at Warsaw East.	-	-	232	916	-	-	1,148
SU-000353	Install a 69 kV, 23.4 MVAR capacitor at Spencer Road	-	462	479	-	-	-	941
SU-000354	Install a 69 kV line exit at Lebanon including a 69 kV breaker and a 69 kV line exit at Lebanon South. Add a 69 kV, four breaker ring bus at Lebanon South to terminate project 1003 (building a 69 kV line from Lebanon to Lebanon South).	-	-	50	350	1,300	-	1,700
SU-000393	Replace 69kV equipment rated less 690 amps summer emergency at Boyle Co associated with the Boyle Co to Lancaster 69kV line (breaker 101-604) with equipment capable of a minimum of 993 amps summer emergency.	-	8	-	-	-	-	8
SU-000394	Replace 161 kV terminal equipment rated less than or equal to 1662 Amps (463 MVA) summer emergency rating associated with the Matanzas to BREC Wilson 161 kV line with equipment capable of a minimum of 1896 Amps (529 MVA) summer emergency rating.	-	35	-	-	-	-	35
SU-000407	Install a 69 kV line exit at Lebanon including a 69 kV breaker and a 69 kV line exit at Lebanon South. Add a 69 kV, four breaker ring bus at Lebanon South to terminate project 1003 (building a 69 kV line from Lebanon to Lebanon South).	-	-	50	945	2,488	-	3,483

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 39

Responding Witness: Lonnie E. Bellar

Q-39. Refer to the direct testimony of Lonnie E. Bellar, page 40, wherein he describes the Clifty Creek 345kV overload risk.

- a. Explain whether the Companies anticipate reflecting this investment in capitalization for ratemaking purposes.
- b. Explain whether there will be offsetting revenues from this \$2.9M project, and if so, from whom those revenues will be recovered.
- c. Explain the need for and use of the 345kV Trimble County to Clifty Creek line.

A-39.

- a. Yes.
- b. See the response to AG 1-7.
- c. See the response to AG 1-7.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 40

Responding Witness: Daniel K. Arbough

Q-40. Refer to the direct testimony of Lonnie E. Bellar, page 45.

- a. Provide the same table with capital expense additions in transmission, by company, calculated based on the 13-month average capitalization as used in the test period of the last rate cases, compared to 13-month average capitalization as used in the test period of these cases.

A-40.

- a. Changes in capitalization cannot be tracked to individual items as capitalization is impacted by normal operating activities, capital expenditures, and financing activities.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General’s Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 41

Responding Witness: John K. Wolfe

Q-41. Refer to the direct testimony of Lonnie E. Bellar, page 50, wherein he discusses the investments and capital costs related to the Companies’ DA projects.

- a. Provide, broken out by company, the original capital estimate for the DA project, the actual capital expended to-date, the estimated investment through completion of the project, the estimated in-service date and the actual in-service date.
- b. Provide the estimated completion date for the project DA, by company if the date for each is different.

A-41.

- a. The original capital estimate for the DA project, the actual capital expended to-date and the estimated investment through completion of the project are presented in the table below.

(in Thousands)	Original Capital Estimate	Actual Capital Expended to-date	Estimated Investment through Completion of the Project
LG&E	66,312	17,336	48,976
KU	46,045	17,880	28,165
Total	112,357	35,216	77,141

The estimated in-service date is December 2020 for both Companies.

- b. The estimated completion date for the DA project is December 2020 for both Companies.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 42

Responding Witness: John K. Wolfe / Robert M. Conroy / Lonnie E. Bellar

Q-42. Refer to the direct testimony of Lonnie E. Bellar, page 50, wherein he states, "A proposed expansion of DA is discussed in the Distribution Plan attached to my testimony."

- a. Are the Companies requesting in this matter amendments to the CPCNs they received for the current DA program? If the response is in the affirmative, provide a citation to the record where they have made their request. If the response is in the negative, explain why the Companies believe they can expand the DA program without Commission approval.
- b. Explain why an expansion of a yet-completed plan is in the best interest of the Companies' customers. Any response should include the cost-benefit analyses conducted by the Companies to evidence as much.

A-42.

- a. No, the Companies are not requesting any modifications to their existing CPCNs for the Distribution Automation program. The Companies acknowledge that the Commission's Order of April 13, 2016 in Case No. 2012-00428 requires them to apply for a CPCN for major distribution grid investments for DA. The Companies are currently studying a potential expansion of their DA programs but have yet to perform the required studies to make a final determination as to proceed. If the Companies determine that an expansion is cost-beneficial, such expansions would not begin earlier than 2022. As KRS 278.020(1)(e) requires that construction begin on the facilities for which a CPCN is granted within one year of the issuance of the CPCN, any application for a CPCN at this juncture would be premature.
- b. As part of its DA program, through July 2018, EDO installed nearly 360 electronic reclosers which resulted in 6,281,428 avoided outage minutes including more than 16,763 avoided interruptions. These results show DA to be an effective reliability improvement program. Thus, DA is planned to be expanded to provide similar benefits to all distribution circuits having a total of at least 500 customers and a serviceable circuit tie for switching (40% of all circuits, 70% of customers). A cost-benefit analysis will be completed as part of the final approval process.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 43

Responding Witness: John K. Wolfe

Q-43. Refer to the direct testimony of Lonnie E. Bellar, pages 51-52, wherein he discusses the Distribution Substation Transformer Contingency program.

- a. Provide the cost-benefit justification for the Companies investing \$37M in redundant, spare equipment.
- b. Provide the specific criteria used to determine that the redundant, spare equipment should be recorded as capital asset.

A-43.

- a. The \$37M investment is the least cost investment when compared to the cost of unserved energy (outages) to the customer. The benefits of the investment in the Distribution Substation Contingency program are consistent with the Interruption Cost Estimator (ICE) calculator sponsored by the Department of Energy which assigns a cost to the customer of an outage by kWh. The cost of unserved energy (CUE) is calculated by the amount of load which would go unserved under the loss of a substation transformer multiplied by the estimated time to install permanent or temporary capacity and the determined ICE value. The Companies' existing Investment Proposals that have been approved for the Distribution Substation Transformer Contingency program through November 27, 2018, are attached.
- b. Equipment purchased for a capital project, whether in-service or Capital Spare, is treated as capital asset per the Companies' accounting policy.

Investment Proposal for Investment Committee Meeting on: N/A

Project Name: Central City Substation and Distribution 4kV to 12kV Conversion

Total Expenditures: \$ 857k (Including \$78k of contingency)

Project Number (s): Distribution Substations 144767 Distributions Lines 147823

Business Unit/Line of Business: Electric Distribution Operations

Prepared/Presented By: Tim Smith/Mike Leake/Beth McFarland

Executive Summary

KU Electric Distribution requests approval for funding to convert the Central City 4kV system to a 12kV Distribution system to eliminate low voltage issues and to enhance reliability and contingency in the Central City area. Central City is located in Muhlenberg County and serves 2,947 customers. The area is targeted for improvement as a result of its reliability performance, more specifically, it's low voltage issues over the last several years.

Central City 4kV and Central City South 4kV substations consist of long heavily loaded feeders that routinely experience low voltage as verified by both System Planning models as well as actual customer complaints. Shifting load between the two substations as well as load shifts to Muhlenberg Prison Substation have been studied and do not resolve the voltage issues.

The project includes converting the two existing dual voltage substation transformers to 12kV (Central City 4kV 571-1 and Central City South 4kV 405-1) and the conversion of six Central City and Central City South distribution circuits from 4kV to 12kV.

This project was included in the 2015 Business Plan (BP) in 2015-2017. In May 2015, the Corporate RAC approved shifting the funding from 2016 to 2015 to complete the project in 2015.

Background

The Central City distribution system consists of two 4kV substations. Both substation transformers are dual voltage on the low voltage side and capable of being converted to 12kV. Central City 571-1 and Central City South 405-1 substations are located within the city limits of Central City in Muhlenberg County, Kentucky. The two substations combine to serve the entire city (approximately 2,947 customers) with Central City 571-1 on the northern end of the city and Central City South 405-1 to the south. Central City 571-1 has a 67kV-13.09X4.36kV 7.5/10.5MVA LTC transformer with an average summer peak of 6,665kVA and an average winter peak of 6,733kVA. Central City South 405-1 also has a 67kV-13.09X4.36kV

7.5/10MVA LTC transformer with an average summer peak of 6,486kVA and an average winter peak of 6,443kVA. Records indicate there are 43 critical customers on the Central City distribution system.

Low voltage complaints from customers as confirmed by operations center monitoring and the distribution system planning modeling tool is a primary reason for the request for funding to convert the Central City distribution system to 12kV. Contingency support in the event of a transformer failure at either station is also a consideration. Currently substantial load will go unserved in the event of a substation transformer failure or outage at either station under heavy loading conditions. Conversion to 12kV will improve reliability and contingency in the area by allowing load to be transferred more effectively between stations while allowing load to also be transferred to other area 12kV stations.

- **Alternatives Considered**

1. Recommended option: NPVRR (\$000s): \$1,114

The recommended option is to convert the entire 4kV Central City distribution system to 12kV. Both Central City and Central City South have an existing 7.5/10.5 MVA, 67-13.09X4.36kV substation transformer. The distribution portion of the project will include replacing all of the 4kV rated equipment with 12kV rated equipment. The total estimated cost is \$857k.

2. Do nothing option: NPVRR (\$000s): \$2,143

Both Central City 571-1 and Central City South 405-1 Substations will remain at 4kV as isolated 4kV systems with ties only to each other and no circuit ties to surrounding 12kV sources. Voltage and contingency issues and concerns will not be addressed and low voltage during heavy loading will result in continuous customer complaints. Support between substations is limited by circuit capacity at 4kV (4kV requires 3 times the current of 12kV systems for the same load); during the loss of either transformer at peak, significant load will go unserved until the transformer is restored (estimated 24-36 hours). While the loss of an entire substation is a relative low probability event, planning studies indicate an outage of Central City substation could cause as much as 3,275kW to go unserved until the station is restored under peak loading conditions. During an outage of Central City South substation, an estimated 4,900kW would go unserved. Conversion to 12kV will allow full utilization of the transformer capacity at each station for contingency support along with support from two nearby 12kV substations (Muhlenberg Prison Substations and Shavers Chapel) allowing all load to be restored through switching in approximately two hours. Using the corporate “cost of unserved energy” (\$17.2/kWh) with estimated loads going unserved at peak for an incremental 22 hours (24 hours less 2 hours to switch load), the minimum cost of unserved energy would be \$1,239k for Central City and \$1,854k at Central City South. The estimated “cost of unserved energy” based on an annual 5% probability of an outage is approximately \$155k annually.

3. Alternative 1: NPVRR (\$000s): \$ 1,675
This option resolves voltage issues through the installation of line voltage regulators and provides comparable contingency improvements to the recommended option through distribution line improvements on the Central City 4kV System. During an outage at peak, 2.1 to 2.7 MW could go still go unserved during an outage of either Central City Substation. This alternative would require the installation of a total of six regulator banks, one 4kV to 12kV conversion bank and reconductoring a portion of existing distribution circuits to larger wire (about 13,929'). Actual application of multiple regulator and transformer banks could be problematic because of the difficulty of load balancing with very high circuit currents (approaching 900 amps) at 4kV. This option is not recommended because it is technically inferior to the recommended option at a higher cost. The estimated cost is \$1,289k.

Project Description

• Project Scope and Timeline

- Substations: Convert two dual voltage substation transformers to 12kV (Central City 4kV 571-1 and Central City South 4kV 405-1). This estimate includes funds for labor, materials and wildlife protection to convert the substation transformers and substation structures for 12kV operation. The estimated cost is \$453k.
- Distribution: Convert six Central City distribution circuits from 4kV to 12kV. The estimate includes funds to replace all 4kV rated materials and equipment for 12kV operation. The estimated cost is \$404k.
- July 2015: Open projects.
- July 2015: Complete engineering design, preliminary construction and order materials.
- July-Sept 2015: Complete conversion and construction:
 - Build a temporary 4kV substation at Central City South 405-1 to serve circuits 1649, 1650 and 1651.
 - Build a temporary overhead 4kV circuit around Central City South Substation so that the existing substation can be de-energized to allow bus work upgrades to be completed.
 - Build a temporary transmission tap to serve the temporary substation.
 - Upgrade the de-energized Central City South Substation 405-1 from 4kV to 12kV.
 - Convert circuits 1649, 1650 and 1651 from 4kV to 12 kV in a planned order and return to Central City South 12kV.
 - Convert Central City 4kV 571-1 circuits 1645, 1646 and 1648 from 4kV to 12kV and serve from Central City South 12kV and Muhlenberg Prison 12kV.
 - Convert the Central City 571-1 substation from 4kV to 12kV.
 - Return circuits 1645, 1646 and 1648 to Central City 551-1 12kV.
- October 2015: Remove temporary substation at Central City South and site cleanup.

- **Project Cost**

The total estimated cost of the Central City Substation and Distribution 4kV to 12kV Conversion project is \$857k. The substation and distribution cost estimates are consistent with the “Conceptual Level 1” engineering design designation. There is an estimated 10% of contingency (\$78k) incorporated into the project cost estimates.

Economic Analysis and Risks

- **Bid Summary**

- Substation and Distribution Lines will use existing material and labor contracts and follow established Supply Chain procedures. KU Company crews will be utilized based on availability at the time of work.

- **Budget Comparison and Financial Summary**

Financial Detail by Year - Capital (\$000s)	2015	2016	2017	Post 2017	Total
1. Capital Investment Proposed	687				687
2. Cost of Removal Proposed	170				170
3. Total Capital and Removal Proposed (1+2)	857	-	-	-	857
4. Capital Investment 2015 BP	363	140	258		761
5. Cost of Removal 2015 BP	12	29			41
6. Total Capital and Removal 2015 BP (4+5)	375	169	258	-	802
7. Capital Investment variance to BP (4-1)	(324)	140	258	-	74
8. Cost of Removal variance to BP (5-2)	(158)	29	-	-	(129)
9. Total Capital and Removal variance to BP (6-3)	(482)	169	258	-	(55)
Financial Detail by Year - O&M (\$000s)					
	2015	2016	2017	Post 2017	Total
1. Project O&M Proposed					-
2. Project O&M 2015 BP					-

These projects were budgeted in the 2015 BP. The Substation portion of the Central City 4kV to 12kV Conversion project was budgeted in 2015 at \$375k (project 144767). The Distribution piece was budgeted in 2016 for \$169k (project 144750) and in 2017 for \$258k (project 131686). In the proposed 2016 BP, there was an additional \$80k for the substation work and \$258k for the distribution circuit work in 2016 and 2017. In May 2015, the Corporate RAC approved shifting this funding from 2016 and 2017 to 2015 to complete this project. In addition, another \$146k was needed for the circuit work and that funding was reallocated in June 2015 through the EDO RAC process from another EDO substation project.

Financial Summary (\$000s):

Discount Rate:	6.5%
Capital Breakdown:	
Labor:	\$ 98
Contract Labor:	\$ 418
Materials:	\$ 50
Local Engineering:	\$ 79
Transportation:	\$ 12
Burdens:	\$ 122
Contingency:	\$ 78
Reimbursements:	(\$ 0)
Net Capital Expenditure:	\$ 857

Financial Analysis - Project Summary (\$000)	2015	2016	2017	2018	2019	Life of Project
Project Net Income	(16.00)	(21.00)	33.00	44.00	41.00	749.00
Project ROE	-7.10%	-4.90%	8.00%	11.10%	10.80%	9.70%

- **Assumptions**

- The estimated cost of the Distribution conversion will be comparable to the actual cost observed from recent similar 4kV to 12kV conversion projects.
- The project unknowns will not exceed the estimated contingency amounts.
- Project will be completed in year 2015.

- **Environmental**

- There are no known environmental issues at this time.

- **Risks**

- Failure to complete the 4kV to 12kV conversion will result in continued low voltage conditions during peak seasons and increased risks of customer complaints.

Conclusions and Recommendation

It is recommended that the Central City Substation and Distribution 4kV to 12kV Conversion project be approved for \$857k to convert the Central City system to 12kV to address low voltage conditions and improve reliability and contingency for the Central City service area.

Investment Proposal for Investment Committee Meeting on: August 31, 2016

Project Name: Corbin US Steel Substation Transformer Addition Project

Total Expenditures: \$ 2,031k (includes \$185k contingency)

Project Number: Substation- 152589, Distribution- 153178, Transmission- 151771

Business Unit/Line of Business: Electric Distribution Operations

Prepared/Presented By: Tim Smith/Beth McFarland

Executive Summary

This Investment Proposal (IP) requests funding for the installation of a new substation transformer at the KU Corbin US Steel Substation located in Corbin, Ky. Corbin US Steel Substation currently has one 10.5MVA transformer and currently serves 356 customers including one major manufacturer, CTA Acoustics (approximately 5MVA). The substation is projected to overload by the summer of 2017 due to two new large industrial customers beginning operations in the Corbin area. The purpose of this IP is to request funding to install a new 14MVA transformer at Corbin US Steel Substation and the associated transmission tap and distribution improvements. This IP provides for substation enhancements necessary to serve the expected new load, provides for future load growth in the area, and removes the Corbin US Steel Substation from the N-1 Distribution Transformer list (transformers that cannot be fully backed up for a failure of the substation transformer during high load periods during the year).

A contract for electric service has been signed for 4.3MVA with Hendricks Resources with the potential for a 2MVA phase II expansion for a total of 6.3MVA in new load by the 2017/2018 timeframe. Hendricks Resources is a coal reclaiming facility immediately adjacent to the existing Corbin US Steel Substation. Euro Sticks, a French owned company and maker of ice cream and coffee stir-sticks has publicly announced plans for a 2.2MVA manufacturing facility to be housed in an existing "spec building" at nearby Southeast Kentucky Business Park. Both customers expect to be operational by mid-year 2017. Without capacity enhancements, the Corbin US Steel Substation transformer's forecasted summer demand is projected to be 123% to 142% of its summer rating between the summer of 2017 and 2018 contingent upon the customer's operating schedule and expansion plans.

Funding is requested in the amount of \$2,031k to complete a system enhancement project in the 2016/2017 timeframe to install a new 14MVA, 12kV transformer, substation steel structures, 3-12kV 1200 amp circuit breakers, and one 69kV tap and switch pole at Corbin US Steel Substation to meet existing and pending service requirements and remove Corbin US Steel from the N-1 Distribution Transformer list. The timing and size of the load addition at Corbin US Steel was only recently confirmed and, as such, this project was not included in the 2016 BP. This project is included in the 2016 forecast and proposed 2017 BP. The 2016 spending was approved by the Corporate RAC in July.

Background

Corbin US Steel 12KV Substation (795-1) currently is a single transformer substation built on an easement on the abandoned former Corbin US Steel mine property. The existing transformer is a 1975 vintage General Electric 67/13.09X4.36KV LTC unit that was installed in 1978. The substation transformer has had an actual summer peak of 6.7MVA and a winter peak of 7.3MVA. The most recent summer and winter load forecasts are 6.4MVA and 6.6MVA respectively. During the summer, there is only 4.1MVA of unused capacity available to serve new load.

There are two existing distribution circuits extending from this substation. Circuit 0289 is a circuit tie to Corbin East 12KV (844-1). Corbin East has a 14MVA transformer with about 6MVA of capacity available at peak and the tie circuit has limited transfer capability beyond that level without significant reconductoring and the addition of one or more sets of line regulators. Circuit 0288 is a 397 ACSR feeder that extends south of the substation and feeds 100% of the substation load (356 customers) and has no other circuit ties.

On March 14, 2016, the Kentucky Utilities Company received an Electrical Load Data Sheet with details for a 60,000 Sq.-Ft, 4.3MVA coal reclaim facility with a potential to grow to 6.3MVA in the second year of operation. On June 20, 2016, Hendricks Corbin LLC signed a "Contract for Electric Service" for 4.3MVA. Hendricks anticipates a service need date of the first quarter of 2017.

On June 30, 2016 Euro Sticks Group and Kentucky Governor Matt Bevin announced the plans for a new plant at the Southeast Kentucky Regional Business Park in Knox County, Kentucky. Euro Sticks has submitted an Electrical Load data Sheet with an estimated peak demand of 2.2MVA. Euro Sticks expects to be operational in the first quarter of 2017.

The total customer submitted new load additions equate to 6.5MVA initially and potentially 8.5MVA should Hendricks implement the expected phase II expansion plan. With the addition of the initial new loads, the transformer will be loaded to 123% of its summer rating which is above the transformer's short duration emergency rating of 120%. An 8.5MVA load addition would drive the substation to 142% of its summer rating.

Corbin US Steel has limited ties to other stations and is currently on the N1DT list (transformers that cannot be fully backed up for a failure of the substation transformer during high load periods during the year). The recommended solution provides capacity to serve the new load, removes Corbin US Steel from the N1DT list, provides additional capacity and contingency for the area and provides flexibility to perform scheduled maintenance at the station without the need to temporarily install a portable transformer reducing future operating costs.

Alternatives Considered

1. Recommended Option: Add a new 10/14MVA Transformer NPVRR \$2,541
The recommended option is to perform substation site preparation, install a new 10/14MVA 67/13.09kV LTC substation transformer, one 69KV HV structure, 3-1200 amp breakers, 2-LV bay structures with associated switches and bus work, new

transmission tap and minor distribution improvements. The cost of the recommended option is \$2,031k.

2. Do nothing Option: NPVRR \$3,750
KU has an obligation to serve the new load. The Do Nothing option would only provide for retroactive monitoring of load additions. The station is not on SCADA and cannot be monitored in real time. Loads can only be assessed retroactively after substation meter data is read monthly. Significant and routine overloading of a transformer up to and above the 120% summer emergency will reduce the life of the transformer and accelerate failure of a high value asset and result in an outage that can last 24 hours or more while the transformer is replaced or a mobile transformer is installed. While the loss of an entire substation is normally a relatively low probability event, operating at or above the emergency limit will significantly increase the probability of short-term failure.

Corbin US Steel has limited ability to transfer load to other stations during an outage event. At peak load, approximately 6.980MVA would go unserved in the event of a transformer failure at Corbin US Steel once the first 6.5MVA of new load is in operation. A conservative assumption would be that the 42 year old transformer will fail within four years (25% probability/year) when routinely overloaded and operating at or above its emergency limits frequently, even with just the first phase of load additions. The estimated cost of a replacement transformer is \$546k. For modeling purposes in the CEM, it was assumed that the failure and replacement would occur in year 4. The assumption is a new replacement unit properly sized to serve the existing and new load.

With significant overload and an expected failure within four years, the cost of Do Nothing would include the accelerated cost to replace a failed transformer (\$546k) with a properly sized unit combined with a cost of unserved energy during the resulting long duration outage. Using the corporate “cost of unserved energy” (\$17.2/kWh) with estimated 6.980MVA going unserved at peak for an incremental 24 hours, the cost of unserved energy in year 4 would be:

$$\$17.2/\text{kWh} \times 6980 \text{ kVA} \times 24 \text{ hours} = \$2.881\text{M}, \text{ escalated by CPI to year 4 is } \$3.110\text{M}.$$

With the replacement of the failed transformer, the substation would remain without contingency for future failures and the probability for failure or outage on a new transformer would be similar to Alternative 1 (2%/year).

3. Alternative 1: NPVRR \$2,715
This option replaces the existing 10.5MVA transformer with a 12/22.4MVA substation transformer. While this option would address the new load in the short term, it provides no contingency in the event of a future transformer outage. The cost of this option is estimated at \$1,500k. Under this assumption, the capital cost of improvements would also be combined with the baseline cost of unserved energy with a normal probability of a transformer outage or failure in any given year (2%/year) at peak for the same incremental 24 hours to determine the NPVRR. The cost of unserved energy would be:

$$2\% \text{ outage probability/year } (\$17.2/\text{kWh} \times 6980 \text{ kVA} \times 24 \text{ hours}) = \$57,627/\text{year}$$

Project Description

- **Project Scope and Timeline**

- **Substation Project # 152589:**

- Perform substation site work on substation easement obtained from landowner. Install one 10/14MVA 69/13.09 kV substation transformer, 1-69KV HV structure, 2-LV bay structures and the associated switches and 3-1200A breakers. The small portable will be utilized for this project. Estimated cost \$1,566k.

- **Distribution Project # 153178:**

- Install one new exit circuit and primary meter pole to provide primary 12.47 kV service to Hendricks LLC. Estimated cost is \$15k.

- **Transmission Project # 151771:**

- Install one new 69KV tap, 2-self-supporting 69kV pole structures, one 69kV switch and the removal of one 60' wood transmission pole. Estimated cost is \$450k.

- **Project Time Line:**

- July 2016: Perform engineering design, field surveys, TSR submittal and preconstruction meetings.
 - September 2016: Open Project.
 - September 2016: Order Transmission structures, substation steel, and substation transformer.
 - September-December 2016: Substation site prep, filling and grading. Install temporary tap for customer's construction power.
 - January-April 2017: Complete foundations, transformer pad & associated substation infrastructure.
 - May-July 2017: Install Transmission poles and 69KV switch installation, install distribution exit circuit & permanent primary meter pole, install substation steel package, small portable set up, place new substation transformer on pad.
 - July 2017: Complete connections, equipment check out, site cleanup.
 - August 1, 2017: Commission new substation.

- **Project Cost**

- The total estimated cost of the project is \$2,031k (includes \$450K for transmission lines). Cost estimates are consistent with the "Conceptual Level 1" engineering design designation. There is an estimated 10% contingency (\$185k) incorporated into the project cost estimates.

Economic Analysis and Risks

- **Bid Summary**

- The substation transformer and breakers will be ordered using existing contracts following established Supply Chain practices. Bids for other substation and transmission material and labor will be prepared as necessary following established Supply Chain practices.

- **Budget Comparison and Financial Summary**

Financial Detail by Year - Capital (\$000s)	2016	2017	2018	Post 2018	Total
1. Capital Investment Proposed	600	1,431	-	-	2,031
2. Cost of Removal Proposed	-	-	-	-	-
3. Total Capital and Removal Proposed (1+2)	600	1,431	-	-	2,031
4. Capital Investment 2016 BP	-	-	-	-	-
5. Cost of Removal 2016 BP	-	-	-	-	-
6. Total Capital and Removal 2016 BP (4+5)	-	-	-	-	-
7. Capital Investment variance to BP (4-1)	(600)	(1,431)	-	-	(2,031)
8. Cost of Removal variance to BP (5-2)	-	-	-	-	-
9. Total Capital and Removal variance to BP (6-3)	(600)	(1,431)	-	-	(2,031)

Financial Detail by Year - O&M (\$000s)	2016	2017	2018	Post 2018	Total
1. Project O&M Proposed	-	-	-	-	-
2. Project O&M 2016 BP	-	-	-	-	-
3. Total Project O&M variance to BP (2-1)	-	-	-	-	-

This project is not included in the 2016 Business Plan, but was approved in the 6&6 2016 RAC forecast and is incorporated in the 2017 BP at the full amount of the project.

Financial Summary (\$000s):

Discount Rate: 6.5%

Capital Breakdown:

Labor:	\$ 108
Contract Labor:	\$ 471
Materials:	\$ 974
Transportation:	\$ 6
Local Engineering:	\$ 172
Burdens:	\$ 115
Contingency:	\$ 185

Net Capital Expenditure: \$ 2,031

Financial Analysis - Project Summary (\$000)	2016	2017	2018	2019	2020	Life of Project
Project Net Income	-	66.00	101.00	97.00	92.00	1,791.00
Project ROE	0.00%	4.80%	8.10%	10.00%	10.00%	9.60%

- **Assumptions**

- Two large commercial customers will complete new facilities in 2017 and loads will match load forecasts.
- Substation easements will be obtained for the substation expansion.

- **Environmental**

There are no known environmental issues at this time

- **Risks**

A deferment of the project will result in significant overloading of the existing 10.5MVA transformer and could result in the failure and replacement of a high cost asset and an increased exposure to an extended outage for both new and existing customers. The near term failure of the existing transformer would result in an extended loss of service for 356 customers in the Knox and Whitley County areas.

Conclusions and Recommendation

It is recommended that the Investment Committee approve the Corbin US Steel Substation Transformer Addition Project to add a second transformer to Corbin US Steel to serve 6.5MVA to 8.5MVA of new load for \$2,031k.

Approval Confirmation for Capital Projects Greater Than or Equal to \$1 million:

The Capital project spending included in this Investment Proposal has been approved by the members of the LKE Investment Committee. Pursuant to the LKE Authority Limit Matrix, the signatures below are also required for approval of this Capital project spending request.

Kent W. Blake
Chief Financial Officer

Victor A. Staffieri
Chairman, CEO and President

Investment Proposal for Investment Committee Meeting on: December 19, 2016

Project Name: Highland Distribution Substation Transformer Contingency Project

Total Expenditures: \$2,447k (includes \$408k of contingency)

Project Number(s): Distribution Substations 153586, Distribution Lines 153587

Business Unit/Line of Business: Electric Distribution Operations

Prepared/Presented By: Kevin Patterson/Beth McFarland

Executive Summary

LG&E Electric Distribution Operations (EDO) requests funding approval for the distribution substation and circuit improvements required to provide full back-up capacity for the LG&E Highland 12kV substation. Highland Substation is located on Stephens Ave. just west of Bardstown Rd. in the heart of Louisville's dense and highly visible Highlands neighborhoods. Presently, if the Highland 12kV Substation transformer were to fail during peak load conditions, up to 3,000 customers would be without service up to five days, until the failed substation transformer capacity could be replaced. Once this proposed project is completed, all customers will be restorable within four hours or less by switching via open tie points to surrounding substations.

Specifically, the Highland Distribution Substation Transformer Contingency Project consists of upgrading five circuits from four adjacent substations (Hancock, Dahlia, Locust and Hillcrest) to enable year round load transfer of all 12kV load in the event of a failure of the Highland 12kV transformer. Substation exit cable capacity will be doubled on each of the five circuits, increasing the capacity of each feeder up to the overhead conductor rating. In addition, one circuit (DA-1241) will have approximately 3,000' of overhead conductor upgrades.

The completion of this proposed project will enable EDO to remove the Highland 12kV substation transformer from the Distribution Substation Transformer Contingency Program (N1DT) list. This list identifies distribution substation transformers, which in the event of a transformer failure during high load periods, cannot be completely restored by switching to surrounding substation and circuits. Planned project completion is prior to 2017 summer loading conditions.

Project costs are estimated to be \$2,447k. This project, as it is now planned, was not specifically identified in EDO's proposed 2017 Business Plan (BP); however, it is currently EDO's highest ranked N1DT project on a benefit to cost ratio. EDO's 2017 BP includes \$7.2M in 2017 for the N1DT Contingency Program which will be used to fund this project.

Background

The Highland Substation is located on Stevens Avenue just west of Bardstown Road, in the heart of Louisville's Highlands district, and serves approximately 10,054 commercial and residential customers. All of the 12kV load at this substation is served from a single 69/12kV, 44.8 MVA transformer that was installed in 1989. The station is a summer peaking station, and peak load on the distribution transformer reached 37.5 MVA during the 2016 summer, but has exceeded 40 MVA in past years (2010-2013). System Planning studies show that approximately 32 MVA can be transferred through existing circuit ties leaving approximately 8 MVA of load unserved under peak conditions. Limitations on circuit ties to other stations are primarily due to the ratings of the underground substation exit cables which are rated less than the overhead conductor ratings.

Due to the difficulties in setting up a mobile or spare transformer at this location, it could take up to five days to install replacement capacity. During this time, some customers would be without service for extended periods of time until the substation transformer is replaced, a process that would take multiple days due to the complexity of road transport, and oil removal and processing, for a substation transformer of this size.

Due to the large transformer size and limited space available inside the substation, expansion opportunities within the existing facility are not a practical option. Highland Substation is unique in that a mobile transformer, which is a back-up solution for most LG&E substations, is not a viable alternative at Highland due to the lack of space inside the substation and the physical constraints external to the substation. The 69/12kV, 44.8 MVA distribution transformer is located in a partially walled substation that does not afford the safe use of a mobile transformer within the facility. In the event of a substation transformer failure this limitation significantly increases the installation time of replacement capacity from an average 24-36 hours to up to five days. During peak load conditions, it is estimated that up to 8 MVA of residential and commercial load cannot be transferred if the Highland transformer failed. This load would be along Bardstown Road in close proximity to the substation.

EDO's proposed project will increase circuit capacity at surrounding stations by installing additional conduit and exit cable at four substations (Hancock, Locust, Dahlia and Hillcrest), which will enable all load to be transferred to adjacent substations year round. Additionally, approximately 3,000 feet of overhead conductor will be upgraded to 336kCM Aluminum conductor to enhance switching capability.

In addition to the circuit upgrades, this project includes the purchase of additional substation equipment that will reduce the time to install a new transformer in the event of a failure of the existing unit. This equipment will enable an emergency spare to be installed in place of the existing unit, reducing the time Highland load must be served from other stations. The equipment will also shorten the time required to permanently replace a failed unit to approximately three weeks, from the current nine months to rewind and reinstall the failed unit.

Alternatives Considered

1. Recommended Option: NPVRR (\$000): \$2,863
The recommended option is to install new conduit and exit cable at four nearby substations to increase the capacity on five circuits to the ratings of the overhead conductor. Also, reconductor approximately 3,000 feet of overhead conductor to 336kCM Aluminum, and purchase substation equipment which enables reduction of replacement time of the existing transformer. The estimated cost of this option is \$2,447k.
2. Do Nothing Option: NPVRR (\$000): \$5,478
The “Do Nothing” option is not recommended because it continues to leave the Company exposed to exceptional risk in the event of a loss of the Highland 12kV transformer. Approximately 3,000 out of the Highland Substation 10,000+ retail, commercial and residential customers could be subjected to intermittent interruptions during peak load conditions. This situation could last for up to five days, for eight hours per day. This would result in a highly visible condition with significant detrimental impact to the area. Using standard corporate metrics to quantify this N1DT risk, the total estimated “Cost of Unserved Energy”, when considering a Highland 12kV outage (8 MW unserved for 8 hours/day for 5 days; \$17.2/kWh; 5% probability) is approximately \$275k annually.
3. Alternative 1: NPVRR: (\$000s) \$8,664
This option considers the installation of a new 69/12kV, 44.8 MVA transformer and associated equipment at Highland Substation plus associated transmission and distribution line improvements. This option would require the purchase of the two adjacent homes (not currently for sale), demolition of the existing structures (which could generate negative attention from neighborhood or preservation groups), and installation of the new equipment. This option would also require the expansion of the wall surrounding the property to maintain the aesthetic of the existing facility. The additional capacity would enable the immediate transfer of load in the event of a failure on either transformer. This alternative is not recommended due to the high cost and the high impact on the area. The estimated cost of this alternative is \$7,500k.

Project Description

- **Project Scope**
 - Substation project #153586: estimated cost \$644k (\$644k-2017).
 - Install larger termination cubicles at Hancock, Locust, Dahlia and Hillcrest Substations.
 - Purchase new bushing box for Highland Substation to reduce transformer replacement time in the event of a failure.
 - Distribution project #153587: estimated cost \$1,803k (\$1,803k-2017).
 - Install additional required conduit at Hancock, Locust, Dahlia and Hillcrest Substation.
 - Pull additional underground cable on five circuits to increase capacity to overhead conductor rating

- Reconductor approximately 3,000 feet of overhead conductor on DA-1241 and DA-1242 to increase switching capability.

- **Project Timeline**
 - December, 2016: Open Projects, complete design work and bid projects.
 - January, 2017: Award bids, order equipment, schedule work.
 - February-April, 2017: Complete construction of new conduit, overhead work.
 - April-June, 2017: Install larger substation cubicle compartments and pull cable.
 - June 2017: Complete distribution conductor splicing and relay work for new circuits.
 - July 1, 2017: Complete all remaining check-outs and complete project.

- **Project Cost**
 - The estimated cost of the proposed project is \$2,447k. The substation and distribution line cost estimates are consistent with the “Preliminary” engineering design designation, and are based on field experience from similar projects. There is an estimated 20% of contingency (\$408k) incorporated into the project cost estimates.

Economic Analysis and Risks

- **Bid Summary**
 - Substation and distribution work will be bid using established Supply Chain procedures.
 - For other requirements, Substation Construction and Maintenance (SC&M) and Distribution Operations will use existing material and labor contracts and follow established Supply Chain procedures.

• **Budget Comparison and Financial Summary**

Financial Detail by Year - Capital (\$000s)	2017	2018	2019	Post 2019	Total
1. Capital Investment Proposed	2,402				2,402
2. Cost of Removal Proposed	45				45
3. Total Capital and Removal Proposed (1+2)	2,447	-	-	-	2,447
4. Capital Investment 2017 BP	700				700
5. Cost of Removal 2017 BP	-				-
6. Total Capital and Removal 2017 BP (4+5)	700	-	-	-	700
7. Capital Investment variance to BP (4-1)	(1,702)	-	-	-	(1,702)
8. Cost of Removal variance to BP (5-2)	(45)	-	-	-	(45)
9. Total Capital and Removal variance to BP (6-3)	(1,747)	-	-	-	(1,747)

Financial Detail by Year - O&M (\$000s)	2017	2018	2019	Post 2019	Total
1. Project O&M Proposed					-
2. Project O&M 2017 BP					-
3. Total Project O&M variance to BP (2-1)	-	-	-	-	-

EDO did not specifically budget this proposed project in its 2017 Business Plan. However, EDO did allocate \$700k in its plan for property, to allow for future substation expansion near Highlands Substation. EDO plans to fund the remaining capital needs for the project (\$1,747k) from its approved N1DT Contingency Program budget (totaling \$7.2M in the 2017 BP). There is no transmission component to this project.

Financial Summary (\$000s):

Discount Rate:	6.5%
Capital Breakdown:	
Labor:	\$ 296
Contract Labor:	\$ 735
Materials:	\$ 543
Local Engineering:	\$ 173
Burdens:	\$ 292
Contingency:	\$ 408
Reimbursements:	(\$ 0)
Net Capital Expenditure:	\$2,447

• **Assumptions**

- Estimated costs were based on costs experienced with similar past projects. Construction bids have not been completed by contractors.
- Project unknowns will not exceed estimated contingency amounts.

• **Environmental**

- There are no known environmental issues at this time.

- **Risks**

- The cost of the distribution portion of the project could escalate because a detailed engineering design was not conducted due to resource limitations and time constraints prior to the preparation of the cost estimates. Costs are based on similar completed work for other projects of similar scope and size.
- Failure to complete this project in a reasonable time frame could negatively impact the company's ability to serve customers in the area for a prolonged period in the event of a transformer failure during peak load conditions. Replacement of the transformer could take up to five days and result in recurrent outages in a highly visible area of Louisville.

Conclusions and Recommendation

EDO recommends that the Investment Committee approve the Highland Distribution Substation Transformer Contingency Project for \$2,447k, enabling to removal of the Highland 12kV transformer from the N1DT Contingency Program list.

Approval Confirmation for Capital Projects Greater Than or Equal to \$1 million:

The Capital project spending included in this Investment Proposal has been approved by the members of the LKE Investment Committee. Pursuant to the LKE Authority Limit Matrix, the signatures below are also required for approval of this Capital project spending request.

Kent W. Blake
Chief Financial Officer

Victor A. Staffieri
Chairman, CEO and President

Investment Proposal for Investment Committee Meeting on: April 29, 2015

Project Name: Innovation Drive Substation N-1 Distribution Transformer Enhancement

Total Expenditures: \$1,344k (including \$134k of contingency)

Project Number(s): Distribution Substations: 146708, Distribution Lines 146707

Business Unit/Line of Business: Electric Distribution Operations

Prepared/Presented By: James Cline / Beth McFarland

Executive Summary

Electric Distribution requests approval for funding to complete the distribution substation improvements and associated minor distribution line work required to remove the KU Innovation Drive substation from the “N-1 Distribution Transformer List”.

The N-1 Distribution Transformer List identifies substation transformers, which in the event of a transformer failure during high load periods, cannot be completely restored by switching to surrounding substations and circuits located in the near-by vicinity. Complete restoration to all customers served from the transformer would require either replacement of the failed transformer or installation of a portable transformer.

The Innovation Drive substation is located in north Lexington, KY and serves a large number of customers (approximately 3,876). Circuit configurations and heavy loading on nearby substations and circuits prevent service from being restored to all customers served from Innovation Drive substation in the event substation transformer 428-1 fails under heavy load conditions. Service to these customers will remain out until the failed transformer is replaced or a portable is installed. The recommended option to mitigate this exposure is to replace the existing Innovation Drive 428-2 10/14 MVA, 138-12kV transformer with a 20/37.3 MVA, 138-12kV transformer and to modify the distribution circuits as needed to accommodate load transfers. This option is the least cost option and is expected to provide additional capacity to allow restoration of service to all customers served from the Innovation Drive substation in the event of an outage to either of the Innovation Drive substation transformers without the need to install a portable transformer – a process that typically requires 18-36 hours. In addition to the recommended project, other alternatives were considered which included the installation of additional transformer capacity in existing substations and the construction of a new substation in the area. These considerations were eliminated due to cost.

This project is scheduled to begin in May 2015, with the distribution circuit improvements to be completed in 2015 and the substation improvements to be completed in 2016.

The total estimated cost of the proposed Innovation Drive substation and distribution improvements is \$1,344k. The 2015 Business Plan includes a total of \$10.4M in 2015-2018 as a part of the

approved “N-1 Distribution Transformer” initiative. The estimated \$1,344k for the Innovation Drive project will be reallocated from this project through the Corporate RAC process.

Background

The Company’s “N-1 Distribution Transformer” list identifies substation transformers, which in the event of a transformer failure during high load periods, cannot be completely restored by switching to surrounding substations and circuits in the near-by vicinity. Complete restoration to all customers would require either replacement of the failed transformer or installation of a portable transformer. This process can take from 18 to 36 hours. A multi-year initiative was approved in the 2015 Business Plan in order to reduce the number of substation transformers on the “N-1 Distribution Transformer” list.

The Innovation Drive 428-1 transformer was selected as a high priority “N-1 Distribution Transformer” candidate because of its size, the large number of customers served, the high 2015 actual winter loads on the transformer (44.3MVA; 118.8% of nameplate capacity), and the attractive benefit-cost ratio of the project. In the event of a failure of Innovation Drive 428-1 under high load conditions, 1,700-2,100 customers are at risk of an extended outage during a winter substation contingency event (estimated to be a minimum of 24 hours for this station). The scope and cost of the identified substation improvements, when compared to other more expensive projects requiring substation steel and breakers, result in an attractive benefit-cost ratio while helping satisfy the goal of the “N-1 Distribution Transformer” initiative. The scope is relatively minimal and it removes Innovation Drive 428-1 from the “N-1 Distribution Transformer” list.

Innovation Drive substation is located on the north side of Lexington, KY and contains a 20/37.3 MVA, 138-12kV transformer (Innovation Drive 428-1) and a 10/14 MVA, 138-12kV transformer (Innovation Drive 428-2). The Innovation Drive 428-1 winter peak load of 34.9 MVA that occurred in 2011 increased to 44.3MVA (118.8% of the nameplate capacity) in 2015 during the “Arctic Blast” event, an average increase of 6.1% per year. Because of these peak load levels, planned substation work must be carefully scheduled during off-peak periods as an unplanned outage during heavy load conditions could result in an extended outage for 1,700-2,100 residential customers. There is not sufficient transformer and circuit capacity in the Innovation Drive 428-2 transformer and the other surrounding substations (Viley Road, Haefling, Beltline) to provide full contingency support for the loss of the Innovation Drive 428-1 transformer. The recommended improvement is to replace the existing Innovation Drive 428-2 transformer with a 20/37.3 MVA unit in order to remove the Innovation Drive 428-1 transformer from the N-1 Distribution Transformer list. The 138-12kV 10/14MVA transformer removed on this project will be moved to spare inventory in the Danville area and serve as the back-up for Lockport and Lebanon West Substations.

A Transmission Service Request (TSR) was submitted to TranServ International to determine the impact of the project on the transmission system. TranServ International determined that a System Impact Study was not required and the TSR was confirmed.

- **Alternatives Considered**

1. Recommended option: NPVRR (\$000s): \$1,739
The recommended option is to replace the existing 10/14 MVA, 138-12kV substation transformer in the Innovation Drive 428-2 substation with a 20/37.3 MVA, 138-12kV substation transformer, and to implement distribution related circuit upgrades as needed to utilize the increased capacity. The total estimated cost is \$1,344k.
2. Do nothing option: NPVRR (\$000s): \$0
The Innovation Drive 428-1 transformer will remain on the “N-1 Distribution Transformer” list where customers may remain without service for an extended time period in the event of a transformer failure during high load periods.
3. Alternative 2: NPVRR (\$000s): \$5,091
This alternative considers the installation of a new substation transformer, steel structures, breakers, transmission poles, and distribution conductor improvements at an existing site (e.g. Haefling) or at a new site in the area that is yet to be identified. The cost of any new substation construction and associated conductor improvements could easily exceed \$4,000k or more, and as a result, is not recommended because it far exceeds the cost of the recommended option.

Project Description

- **Project Scope**

- Substation project #146708 - \$888k (2015); \$397k (2016); \$1,285k (total)
 - Innovation Drive 428-2: Replace the existing 10/14 MVA, 138-12kV transformer with a 20/37.3 MVA, 138-12kV transformer; perform other associated work as necessary.
- Distribution project #146707 - \$59k (2015); \$0k (2016); \$59k (total)
 - Install 225' of new distribution conductor plus a new air break switch to allow load transfers from Innovation Drive 428-1 to Innovation Drive 428-2.
- Transmission: No transmission work is necessary.

- **Project Timeline**

- May 2015: Open project.
- May-Jun 2015: Perform engineering design related tasks; order and purchase major substation equipment; order distribution materials.
- Jul-Sep 2015: Perform below grade site preparation as necessary for substation transformer upgrade.
- Oct-Dec 2015: Finalize below grade site preparation, review protection coordination and relay settings, receive or accrue major substation equipment; install distribution pole, conductors, and switch.
- Jan-Jun 2016: Receive and install 37.3MVA 138-12.47kV transformer (could be 52wk lead time on bid transformer) and new bus to switchgear.
- Jun-Sep 2016: Finalize substation installation, site cleanup, final checkout and commissioning.

• **Project Cost**

The total estimated cost of the project is \$1,344k. The substation and distribution cost estimates are consistent with the “Conceptual Level 1” engineering design designation. There is an estimated 10% of contingency (\$134k) incorporated into the project cost estimates.

Economic Analysis and Risks

• **Bid Summary**

- The substation transformer will be bid using established Supply Chain procedures.
- Bids for other substation material and/or labor will be prepared, if needed, following established Supply Chain procedures.

Budget Comparison and Financial Summary

Financial Detail by Year - Capital (\$000s)	2015	2016	2017	Post 2017	Total
1. Capital Investment Proposed	947	357			1,304
2. Cost of Removal Proposed		40			40
3. Total Capital and Removal Proposed (1+2)	947	397	-	-	1,344
4. Capital Investment 2015 BP					-
5. Cost of Removal 2015 BP					-
6. Total Capital and Removal 2015 BP (4+5)	-	-	-	-	-
7. Capital Investment variance to BP (4-1)	(947)	(357)	-	-	(1,304)
8. Cost of Removal variance to BP (5-2)	-	(40)	-	-	(40)
9. Total Capital and Removal variance to BP (6-3)	(947)	(397)	-	-	(1,344)

Financial Detail by Year - O&M (\$000s)	2015	2016	2017	Post 2017	Total
1. Project O&M Proposed					-
2. Project O&M 2015 BP					-
3. Total Project O&M variance to BP (2-1)	-	-	-	-	-

The 2015 Business Plan includes \$2.5M in 2015 and \$2.563M in 2016 as a part of the approved “N-1 Distribution Transformer” initiative. The estimated \$1,344k for the Innovation Drive project will be reallocated from this project through the Corporate RAC process.

Financial Summary (\$000s):

Discount Rate:	6.5%
Capital Breakdown:	
Labor:	\$ 94
Contract Labor:	\$ 94
Materials:	\$ 743
Local Engineering:	\$ 140
Burdens:	\$ 136
Transportation:	\$ 3
Contingency:	\$ 134
Reimbursements:	(\$ 0)
Net Capital Expenditure:	\$ 1,344

Financial Analysis - Project Summary (\$000)	2015	2016	2017	2018	2019	Life of Project
Project Net Income	(11.00)	(25.00)	55.00	73.00	67.00	1,283.00
Project ROE	-4.40%	-4.10%	8.00%	11.10%	10.80%	10.20%

- **Assumptions**
 - The estimated cost of the substation transformer will be comparable to the actual cost obtained through the formal bid process.
 - The project unknowns will not exceed the estimated contingency amounts.
 - Project will be completed in approximately 18 months after Investment Committee approval.

- **Environmental**
 - There are no known environmental issues at this time.

- **Risks**
 - Without this project, a failure of the Innovation Drive 428-1 transformer could result in potentially long outage durations for existing and future customers in the event of a transformer failure during high load periods.

Conclusions and Recommendation

It is recommended that the Investment Committee approve the Innovation Drive Substation N-1 Distribution Transformer project for \$1,344k in order to provide the additional substation and circuit capacity necessary to restore service to all customers in the event of a transformer failure during high load periods at Innovation Drive 428-1, without the need to install a portable transformer.

Investment Proposal for Investment Committee Meeting on: April 29, 2015

Project Name: Lakeshore Substation N-1 Distribution Transformer Enhancement

Total Expenditures: \$2,763k (including \$276k of contingency)

Project Number(s): Distribution Substations: 146602, Distribution Lines: 146606
Transmission: 137756

Business Unit/Line of Business: Electric Distribution Operations

Prepared/Presented By: James Burns/Beth McFarland

Executive Summary

Electric Distribution requests approval for funding to complete the distribution substation improvements and associated minor transmission and distribution line work required to remove the KU Lakeshore substation from the “N-1 Distribution Transformer List”.

The N-1 Distribution Transformer List identifies substation transformers, which in the event of a transformer failure during high load periods, cannot be completely restored by switching to surrounding substations and circuits located in the near-by vicinity. Complete restoration to all customers served from the transformer would require either replacement of the failed transformer or installation of a portable transformer.

The Lakeshore substation is located in the southeastern portion of Lexington, KY and serves a large number of customers (5,100). For a significant portion of the year, circuit configurations and heavy loading on nearby substations and circuits prevent service from being restored to all customers served from Lakeshore substation in the event of a substation transformer failure during heavy load conditions. Service to these customers will remain out until the failed transformer is replaced or a portable is installed. The recommended option to mitigate this exposure is to install a second 69-12kV 37.3MVA transformer at the Lakeshore substation. This will provide the necessary capacity to restore service to all customers at any time during the year in the event of a transformer failure during high load periods, without the need to install a portable transformer – a process that typically requires 18-36 hours. Installation of the second transformer will also provide additional capacity for load growth and eliminate the impending normal service overload of the existing transformer during extreme weather events. In addition to the recommended project, other alternatives were considered which included the installation of additional transformer capacity in existing substations and the construction of a new substation in the area. These considerations were eliminated due to cost.

This project is scheduled to begin in May 2015 with completion in December 2016. Minor transmission and distribution line work will also be required.

The estimated total project cost is \$2,763k. The transmission cost of \$294k is in the transmission budget. The 2015 Business Plan (BP) includes a total of \$10.4M in 2015-2018 as a part of the approved “N-1 Distribution Transformer” initiative. The estimated \$2,469k (\$1,600k-2015; \$869k-2016) in distribution substation and line costs for the Lakeshore Substation project will be reallocated from this project through the Corporate RAC process.

Background

The Company’s “N-1 Distribution Transformer” list identifies substation transformers, which in the event of a transformer failure during high load periods, cannot be completely restored by switching to surrounding substations and circuits in the near-by vicinity. Complete restoration to all customers would require either replacement of the failed transformer or installation of a portable transformer. This process can take from 18 to 36 hours. A multi-year initiative was approved in the 2015 Business Plan in order to reduce the number of substation transformers on the “N-1 Distribution Transformer” list.

One of the highest priority N-1 Distribution Transformers is the Lakeshore 37.3MVA 69-12kV substation, located in southeast Lexington. The Lakeshore transformer was selected as a priority “N-1 Distribution Transformer” candidate because of its size, the large number of customers served (5,100), the high actual winter loads on the substation (50.3MVA; 135% of nameplate capacity), and the attractive benefit-cost ratio of the project. In the event of a transformer failure under heavy load conditions, a significant portion of the customers fed from the Lakeshore transformer would not be restored until the transformer is replaced or a portable is installed (estimated to be a minimum of 24 hours for this station). The project also has a very high benefit-cost ratio because the scope is relatively minimal and it removes multiple transformers from the “N-1 Distribution Transformer” list (Lakeshore, FMC).

The Lakeshore substation is situated adjacent to the very high-profile, fast growing Hamburg area and has circuit ties to FMC and Bryant Road substations. Planned work on this substation, including routine substation maintenance, currently requires the installation of a portable transformer which is an expensive and time consuming process. An unplanned outage on the Lakeshore substation during high load periods would result in an extended outage to a portion of the 5,100 customers in this highly visible area where key customers include the St. Joseph East hospital and surrounding medical community. The number of customers that could not be restored varies and is dependent on the loading on Lakeshore substation and surrounding substations at the time of an outage. During extreme loading periods, the percentage of customers without service during a transformer failure is estimated to be as high as 75%.

The Lakeshore substation is winter peaking and although a capacity addition due to normal load growth is not forecasted in the next five years, the substation frequently requires load shifting during extreme temperatures to Bryant Road 1 substation to prudently manage transformer loading. During extreme winter events, constant oversight by the Distribution Control Center and Distribution Planning is required in this area to avoid transformer and circuit overloads which exceed equipment emergency ratings. Also, summer loading on the Bryant Road transformer sometimes requires load shifting back to the Lakeshore substation. The addition of a second

transformer at Lakeshore provides the additional benefit of completely eliminating these operational concerns as well as reducing the peak loading on the existing transformer. A second transformer at Lakeshore will also remove the FMC substation from the “N-1 Distribution Transformer” list. Additionally, this project in combination with the planned installation of the second Hume Road transformer (projected 2017 completion in the 2015 BP) will also remove the Liberty Road transformer from the “N-1 Distribution Transformer” list.

A Transmission Service Request (TSR) was submitted to TranServ International to determine the impact of the project on the transmission system on 12/19/14. Transerv has not completed the Facility Study to determine the estimated cost of transmission improvements, but associated transmission costs are not expected to significantly deviate from the \$294k allocated in the transmission budget for this project.

- **Alternatives Considered**

1. Recommended option: NPVRR: (\$000s) \$3,550
The recommended option is to install a second 37.3MVA transformer at the Lakeshore substation with necessary 69kV and 12kV steel, one 69kV breaker, one 15kV low side breaker, one 15kV tie breaker and three 15kV line breakers, and associated transmission and distribution circuit construction. The total estimated cost is \$2,763k.
2. Do nothing option: NPVRR: (\$000s) \$ 0
Two transformers will remain on the “N-1 Distribution Transformer” list where customers may remain without service for an extended time period in the event of a transformer failure during high load periods. Also, failure to complete this project could also result in an overloaded substation transformer and excessive circuit loadings at Lakeshore substation during extreme temperatures and decreased reliability in the areas served by the substation.
3. Next best alternative: NPVRR: (\$000s) \$8,528
Construct new 138-12kV 37.3MVA substation on EKP 138kV transmission line southeast of the Lakeshore substation. This option would place a substation in a desirable location on the distribution system, but the cost would be significantly higher for 138kV equipment and there would be additional costs associated with 138kV service from EKP (the only other nearby transmission). A property purchase would be required. The total estimated cost is \$6,700k is based on the cost of a recent similar project (Hume Rd).

Project Description

- **Project Scope**

- Substation project #146602- \$1,600k (2015); \$700k(2016); \$2,300k (total)
 - Lakeshore 853-2: Install 1-37.3MVA 69-12kV transformer, 1-69kV breaker, 5-15kV breakers, high and low side steel, and associated equipment.
- Distribution Lines project #146606 \$169k (2016)
 - Relocate circuit 132 and circuit 152 exits to new low side steel.

- Transmission Lines project #137756 \$98k (2015); \$196k (2016); \$294k (total)
 - Replace two concrete poles with steel poles to allow distribution underbuild enhancements.

- **Project Timeline**
 - May 2015: Open project.
 - May-Jun 2015: Perform engineering design related tasks; order and purchase major substation equipment. Perform miscellaneous site preparation.
 - Jun-Sept 2015: Order transmission poles and materials.
 - Jan-Jun 2016: Complete grading, foundations and construction of high and low side steel. Replace two transmission poles and transfer circuits.
 - Jun-Oct 2016: Relocate distribution circuits 132 and 152 exits to new steel. Install 37.3MVA 69-12.47 transformer, one 69kV breaker, three 1200 amp line breakers, one 2000 amp tie breaker, one 2000 amp low side breaker and remaining substation major components.
 - Oct-Dec 2016: Substation site cleanup, miscellaneous construction completion. Commission substation.

- **Project Cost**

The total estimated cost of the project is \$2,763k. Cost estimates are consistent with the “Conceptual Level 1” engineering design designation. There is an estimated 10% contingency (\$276k) incorporated into the project cost estimates.

Economic Analysis and Risks

- **Bid Summary**
 - The substation transformer and breakers will be ordered using existing contracts and following established Supply Chain procedures.
 - Bids for other substation and transmission material and/or labor will be prepared, if needed, following established Supply Chain procedures.

Budget Comparison and Financial Summary

Financial Detail by Year - Capital (\$000s)	2015	2016	2017	Post 2017	Total
1. Capital Investment Proposed	1,671	986			2,657
2. Cost of Removal Proposed	27	79			106
3. Total Capital and Removal Proposed (1+2)	1,698	1,065	-	-	2,763
4. Capital Investment 2015 BP	98	196			294
5. Cost of Removal 2015 BP					-
6. Total Capital and Removal 2015 BP (4+5)	98	196	-	-	294
7. Capital Investment variance to BP (4-1)	(1,573)	(790)	-	-	(2,363)
8. Cost of Removal variance to BP (5-2)	(27)	(79)	-	-	(106)
9. Total Capital and Removal variance to BP (6-3)	(1,600)	(869)	-	-	(2,469)

Financial Detail by Year - O&M (\$000s)	2015	2016	2017	Post 2017	Total
1. Project O&M Proposed					-
2. Project O&M 2015 BP					-
3. Total Project O&M variance to BP (2-1)	-	-	-	-	-

The funding for the Transmission Lines project was budgeted in the 2015 Business Plan. The 2015 Distribution Business Plan includes \$2.5M in 2015 and \$2.563M in 2016 as part of the approved “N-1 Distribution Transformer” initiative. The estimated \$2.469M (excluding Transmission amount) for the Lakeshore project will be reallocated from this project through the Corporate RAC process. There is \$47k in 2015 that will be funded from other projects, for a minor overage between the two N-1 Distribution Transformer projects compared to budget.

Financial Summary (\$000s):

Discount Rate:	6.5%
Capital Breakdown:	
Labor:	\$ 283
Contract Labor:	\$ 540
Materials:	\$1,041
Local Engineering:	\$ 263
Burdens:	\$ 359
Transportation:	\$ 1
Contingency:	\$ 276
Reimbursements:	(\$ 0)
Net Capital Expenditure:	\$ 2,763

Financial Analysis - Project Summary (\$000)	2015	2016	2017	2018	2019	Life of Project
Project Net Income	(20.00)	(51.00)	112.00	149.00	138.00	2,640.00
Project ROE	-4.40%	-4.30%	8.00%	11.10%	10.80%	10.20%

- **Assumptions**

- Load growth in the Lakeshore area will continue at a greater than average rate due to the fast growing Hamburg area. Estimates are based on recently completed work that is similar in scope.
- Project will be completed in approximately 18 months after Investment Committee approval.

- **Environmental**

- There are no known environmental issues at this time.

- **Risks**

Failure to complete the transformer addition at the Lakeshore substation by the recommended date could result in decreased area reliability and potentially long outage durations for existing and future customers in the event of a transformer failure during high load periods. During extreme weather events, there is also a risk of substation transformer and circuit overloads that could lead to equipment and material failure.

Conclusions and Recommendation

It is recommended that the Investment Committee approve the project for \$2,763k to provide the necessary capacity to allow timely restoration of all customers in the event of a transformer failure at either Lakeshore or FMC substations, even under peak loading conditions, without the need to install a portable transformer. The project also provides additional capacity for load growth and alleviates the possibility of transformer and circuit overloads which exceed emergency equipment ratings during extreme weather conditions.

Investment Proposal for Investment Committee Meeting on: July 27, 2016

Project Name: N1DT Contingency Program - KU Spare and Mobile Transformers

Total Expenditures: \$ 6,135k (Including \$292k of contingency)

Project Number(s): 151598

Business Unit/Line of Business: Electric Distribution Operations

Prepared/Presented By: Tony Durbin/Beth McFarland

Executive Summary

Electric Distribution Operations (EDO) proposes to secure funding to implement an enhanced spare and mobile transformer strategy in 2016-2017 to support the N-1 Distribution Transformer Contingency Program (N1DT) at KU. The N1DT program is a planned 15 year, approximately \$175M program designed to enhance the LG&E/KU customer experience through improved reliability and reduced exposure to high consequence, long duration service interruptions resulting from substation power transformer failures. The N1DT program includes substation/circuit upgrades, capacity additions, improved spare and mobile transformer strategies, and other enhancements for distribution substations. It will provide contingency capacity for larger substation transformer failures and for reducing expected outage durations on smaller transformers where providing full redundancy is not considered cost effective.

EDO's N1DT program incorporates a multi-tiered approach based on transformer size. The strategy adds transformer and circuit contingency and/or implements other proactive steps to reduce outage duration based on the anticipated value added in terms of customers impacted, load at risk, and implementation costs. Substation transformer failure consequences from the perspective of customers and load affected generally increase with the size of the transformer. A tiered contingency approach based on transformer size allows LG&E/KU to cost effectively extend the benefits of the N1DT program to more customers.

This proposed project provides for enhancements to the spare and mobile transformer plan for more rural areas of the KU service territory to reduce outage times for customers where it is not cost effective to build permanent contingency into the system. Specifically, this project includes the purchase of two mobile transformers, two small spare transformers, capital refurbishment of existing spares, and construction of basic storage facilities to store the spare and mobile equipment closer to the substations that they are intended to back up.

The proposed project will begin in 2016 and be completed in 2017, and is not funded in EDO's approved 2016 Business Plan (BP). Requested 2016 funding was approved at the Corporate RAC in May and June. The 2016 Business Plan included \$7M and \$10M in 2017 and 2018 for N1DT projects and an additional \$2.2M and \$200k in 2017 and 2018 for the purchase of a large portable transformer. In EDO's 2017 proposed BP, the existing N1DT and portable transformer projects will be reduced in 2017 and 2018 to cover the majority of this funding. \$545k will be incremental to the N1DT program in 2017 in the Business Plan.

Background

LG&E/KU is implementing an N1DT (N-1 Distribution Transformer) Contingency Program to enhance the LG&E/KU customer experience through improved reliability and reduced exposure to high consequence, long duration service interruptions due to failure of a substation power transformer.

The N1DT Program is a fifteen-year (2015–2029) plan that includes \$175M in funding to implement substation/circuit upgrades, capacity additions, improved spare and mobile transformer strategies, and other enhancements for distribution substations and circuits. In the more densely populated urban areas where transformers typically serve more customers, are larger in size and circuits usually have ties to other sources, adding additional contingency and capacity into the system to reduce outage duration is cost effective. In less dense areas of the KU system where transformers typically serve fewer customers, are smaller in size and circuit ties are few or non-existent, it is often not practical or cost effective to build in contingency for every substation transformer. In these areas a spare and mobile transformer strategy is the most effective solution to reduce outage duration in the event of a substation transformer failure. Effectively implementing this strategy requires an adequate number of spare and mobile transformers be located in close proximity to the transformers in each operating area to eliminate the time associated with transporting mobile or spare transformers from other areas.

A three-tiered N1DT restoration approach is being implemented according to the size of the transformer at risk.

Class I Contingency:

For transformers sized at or below base 3750kVA, typically serving 300 customers or less, a Class I contingency plan is applied. This program will increase the number of spare transformers as well as redistributing all spares throughout the state to reduce transportation and replacement time. Transformers sized at or below 3750kVA, typically can be replaced faster than a mobile transformer can be installed. There are 136 transformers rated 3750kVA or lower in the LG&E/KU service territory.

Class II Contingency:

For transformers at or between base 5MVA and base 10MVA, typically serving less than 1000 customers, Class II contingency is applied. Spare transformers of this size as well as a mobile transformer will be made available in the local area ready for transport. There are 310 transformers rated between 5MVA and 10MVA in the LG&E/KU service territory.

Class III Contingency:

For transformers base 12MVA and greater, typically serving greater than 2500 customers, Class III contingency is applied. Class III contingency will be accomplished by investment in circuit upgrades, capacity additions, or other system enhancements. There are 269 transformers rated 12MVA or greater in the LG&E/KU service territory. Until Class III contingency is implemented in a targeted substation, the mobile/spare strategy will be utilized.

KU currently utilizes two mobile transformers (7.5MVA and 30MVA), both normally located in the Lexington area. Two 15MVA mobiles are recommended for purchase to improve the contingency plan, with one transformer each being located in the eastern (Pineville) and western (Earlington) portions of the KU service territory. Currently, KU also uses mobiles to maintain service when taking power transformers out of service for maintenance, and it is not uncommon to have both mobiles in service at the same time and unavailable to be used for transformer failures. Additional mobiles will benefit Substation Construction & Maintenance in providing more flexibility to obtain such outages while still maintaining preparedness to address an unexpected transformer failure.

For 2016-2017, the following actions are proposed to continue implementation of EDO's N1DT program:

1. Purchase two (2) Mobile Transformers. Each mobile will be rated 15 MVA, 69X34.5 KV DELTA – 13.09X4.36 KV WYE GRD. These mobiles provide the ability to handle various high and low side voltage configurations.
 2. Purchase two (2) new spare transformers.
 - a. 2.5/3.5 MVA, 67-13.09KV for Earlington
 - b. 0.5 MVA, 23-7.2KV for Big Stone Gap
 3. Enhance the Pineville storage lot for storage of five (5) additional spare transformers and one new mobile transformer. The enhancements will include construction of concrete foundations for spares, a shelter for the mobile, and installation of AC circuits for cabinet heaters. A shelter will also be constructed for the second mobile transformer, which will be stored in Earlington.
 4. Relocate nine (9) spare transformers so that they are stored in closer proximity to relevant substations. (This is \$90k OPEX, not capital.)
 5. Purchase new bushings for five (5) spare transformers that currently do not pass power factor tests. These bushings will allow for those units to become viable spares.
- **Alternatives Considered (1 –Recommendation, 2 –Do nothing, 3 –Next Best Alt)**
1. Recommendation: NPVRR: (\$000s) \$8,097
Purchase two new 15 MVA mobile transformers, two new spare transformers, and five sets of new bushings needed to refurbish existing spare transformer stock for use. This

recommendation includes the necessary work to relocate and store targeted transformers closer to affected areas. Ensuring the availability of mobile and spare transformers closer to covered areas is expected to reduce the risk of having to transport a transformer from another area which increases outage duration by an expected six (6) hours. The estimated total cost of this option is \$6,135k.

2. Do Nothing: NPVRR: (\$000s) \$9,702
The Do Nothing option would result in an insufficient number of adequately sized mobile and spare transformers to successfully and consistently implement EDO's N1DT contingency program which was designed to reduce outage durations associated with transformer failures. Transformers are typically long life assets but KU's transformer fleet continues to grow older. The average age of KU Substation transformers is 40 years old, and the risk of transformer failure grows with increasing age.

A tally of all distribution substation transformers in the Earlington/Pineville areas that are sized above base-3750 KVA yields 166 units with 129 of them on the "At Risk" list. The average annual peak load for the 129 units at risk is 6726 KVA. Over the past 10 years, KU has averaged 1.6 transformer failures (> base 3750 KVA) per year in the combined Earlington/Pineville areas.

Thus, it would be prudent to be prepared, from an emergency response standpoint, for at least one failure per year that would benefit from an enhanced spare and portable strategy in the combined Earlington/Pineville areas. If a spare transformer is utilized instead of a portable transformer, we can assume an average of six hours extra time to energize a spare compared to energizing a portable, even longer if the spare has to be transported from another operating area. This delay is primarily a result of prepping the spare unit for shipment and set up/teardown of the crane. A six hour or more improvement in service restoration, especially in extreme weather conditions (heat or cold), when customers typically need power the most, will have a positive impact on customer experience, the community, and also the Company's reputation. It should be noted that many substation transformer failures occur in non-storm situations (blue sky days) when customers are considerably less tolerant than they would be in storm situations.

The calculation of the cost of unserved energy yields:
 $(1.0 \text{ Failure}) \times (6726 \text{ KVA}) \times (6 \text{ Hours}) \times (\$17.20/\text{kW-Hr}) = \$694\text{k per year.}$

3. Next Best Alternative(s): NPVRR: (\$000s) N/A
No other alternative to speeding service restoration at Class I and II N1DT substations is seen as viable or cost effective. Of the 446 Class I and II transformers, 347 of them are considered at risk. The only alternative to reduce the outage duration for these 347 Class I and Class II N1DT transformers would be to follow the approach for Class III transformers and add transformer capacity and other improvements to remove some or all of them from the N1DT list. The cost could exceed \$1.2 billion to remove all 347 Class I and II stations from the N1DT list using an estimated N1DT Class III project cost of \$3.5M/station.

Project Description

- **Project Scope and Timeline**

8/1/2016	Purchase two (2) 15 MVA, 69x34.5-13.09x4.36 kV mobile transformers and (2) spare transformers
12/31/2016	Receive spare transformers
7/1/2017	Purchase and receive transformer bushings required for spares
8/1/2017	Receive mobile transformers
9/1/2017	Complete construction of Pineville and Earlington storage enhancements
10/1/2017	Complete relocation of spare transformers (this is OPEX)

- **Project Cost**

The estimated project cost for 2016-2017 is \$6,135k; \$4,954k to be incurred in 2016, and \$1,181k in 2017. Additionally, there will be \$90k of OPEX costs associated with relocating nine (9) spare transformers in 2017.

This project is estimated with 5% contingency (\$292k).

The estimated burdened costs for the various components of this project are:

KU Mobile Transformer 1	\$2,536k
KU Mobile Transformer 2	\$2,536k
KU Spare Transformer 1	\$178k
KU Spare Transformer 2	\$12k
Enhance Pineville storage lot	\$415k
Construct Earlington shelter	\$107k
Purchase bushings	\$59k
Contingency	<u>\$292k</u>
Total Cost	\$6,135k

The \$90k of OPEX required to relocate existing spare transformer to Pineville and Earlington will be reallocated from other projects included in the proposed 2017 BP.

Economic Analysis and Risks

- **Bid Summary**

Competitive bids have already been solicited from three portable manufacturers. One manufacturer did not bid and a second manufacturer did not comply with the design specification. Although the Award Recommendation has not been completed, the portables will be awarded to the third manufacturer, which is Delta Star. Pricing from Delta Star has been incorporated into these estimates.

Costs for two spare transformers and bushings will be bid and purchased using established supply chain procedures and will be obtained later per the Project Scope and Timeline above.

• **Budget Comparison and Financial Summary**

Financial Detail by Year - Capital (\$000s)	2016	2017	2018	Post 2018	Total
1. Capital Investment Proposed	4,954	1,181			6,135
2. Cost of Removal Proposed					-
3. Total Capital and Removal Proposed (1+2)	4,954	1,181	-	-	6,135
4. Capital Investment 2016 BP					-
5. Cost of Removal 2016 BP					-
6. Total Capital and Removal 2016 BP (4+5)	-	-	-	-	-
7. Capital Investment variance to BP (4-1)	(4,954)	(1,181)	-	-	(6,135)
8. Cost of Removal variance to BP (5-2)	-	-	-	-	-
9. Total Capital and Removal variance to BP (6-3)	(4,954)	(1,181)	-	-	(6,135)

Financial Detail by Year - O&M (\$000s)	2016	2017	2018	Post 2018	Total
1. Project O&M Proposed		90			90
2. Project O&M 2016 BP					-
3. Total Project O&M variance to BP (2-1)	-	(90)	-	-	(90)

This project was not funded in EDO's approved 2016 Business Plan (BP). The proposed project will require funding of \$4954k in 2016 and \$1181k in 2017 for a total project cost of \$6135k. Requested 2016 funding will be approved at the Corporate RAC. The 2016 Business Plan incorporated \$7M and \$10M in 2017 and 2018 for N1DT projects. The approved 2016 BP also included an approved project for the purchase of a large portable transformer for \$2.2M in 2017 and \$200k in 2018.

\$2.4M in funding for the planned portable transformer purchase will be reallocated to this project and pulled forward into 2016 with an offsetting reduction in the proposed 2017 BP in 2017 and 2018. Additional N1DT funds in the amount of \$100k in 2017 and \$2,364k in 2018 will also be pulled forward from planned N1DT funding into 2016, also with offsetting reductions in 2017 and 2018. This results in a total of \$4,864k in pull forward funding that will see offsetting reductions in the 2017 BP. Following the development of a funding plan and the proposed 2017 BP, higher than expected bids were received for the portable transformers. These higher costs along with late revisions to the scope of work left a funding shortfall of \$90k in 2016 and \$545k in 2017. Incremental funding in 2016 has been approved by the Corporate RAC. The incremental amount in 2017 is incorporated into the proposed 2017 BP.

The \$90k OPEX in 2017 required to relocate existing spare transformers was not included in the approved 2016 BP and will be funded by reallocations from other projects included in the 2017 BP.

Financial Summary (\$000s):

Discount Rate:	6.5%
Capital Breakdown:	
Labor:	\$ 20
Contract Labor:	\$ 440
Materials:	\$4,474
Transportation:	\$ 4
Local Engineering:	\$ 830
Burdens:	\$ 75
Contingency:	\$ 292
Reimbursements:	(\$ 0)
Net Capital Expenditure:	\$ 6,135

Financial Analysis - Project Summary (\$000)	2016	2017	2018	2019	2020	Life of Project
Project Net Income	-	195.00	305.00	293.00	281.00	5,804.00
Project ROE	0.00%	3.40%	8.00%	10.00%	10.00%	9.40%

- **Assumptions**

KU's installed transformer base ages and failure rates will continue at current rates or possibly increase, requiring an adequate mobile transformer and spare transformer fleet to meet customer commitments. The useful life of a mobile transformer typically exceeds 40 years, and the useful life of typical power transformers normally exceeds 30 years. The current average age of KU's transformers is 40 years old.

- **Environmental**

No environmental issues are known at this time. Oil containment will be installed as necessary at the Pineville storage lot.

- **Risks**

In the event of a transformer failure, the unavailability of a suitably sized mobile unit or spare unit could put thousands of customers at risk for an extended outage, or poor voltage regulation for extended periods.

Conclusions and Recommendation

EDO recommends Investment Committee authorization of \$6,135k for the KU Spare and Mobile Transformers component of the N1DT Contingency Program, to enhance its contingency plan for failed substation transformers at KU's Class I and II N1DT stations.

Approval Confirmation for Capital Projects Greater Than or Equal to \$1 million:

The Capital project spending included in this Investment Proposal has been approved by the members of the LKE Investment Committee. Pursuant to the LKE Authority Limit Matrix, the signatures below are also required for approval of this Capital project spending request.

Kent W. Blake
Chief Financial Officer

Victor A. Staffieri
Chairman, CEO and President

Investment Proposal for Investment Committee Meeting on: February 28, 2018

Project Name: Plainview Distribution Substation Transformer Contingency Project

Total Expenditures: \$11,073k (includes \$1,007k of contingency)

Project Number(s): Distribution Substations 148490, Distribution Lines 148484, Transmission Lines 151752

Business Unit/Line of Business: Electric Distribution Operations

Prepared/Presented By: Kevin Patterson/Dan Hawk

Executive Summary

Electric Distribution Operations (EDO) - Electrical Engineering and Planning (EEP) seeks funding authority for distribution substation, distribution circuit, and transmission line improvements in and near the LG&E Plainview Substation. The Plainview Substation is located near the intersection of Shelbyville Road and Hurstbourne Parkway and directly serves approximately 6,700 commercial and residential customers. The purpose of this proposed project is to provide year-round full contingency to serve load at the Plainview TR1, Hurstbourne TR1, Hurstbourne TR2 and Aiken TR1 transformers in support of the Company's Distribution Substation Transformer Contingency Program (N1DT). This will be accomplished by increasing substation capacity at the Plainview Substation through the installation of a second 44.8 MVA transformer. Additionally, transmission and distribution reliability enhancements will be made through substation and circuit upgrades. This project will also improve the reliability of transmission service to the Plainview Substation with the installation of a ring-bus to reduce the likelihood of a transmission related outage.

Approval is requested in the amount of \$ 11,073k (\$6,088k-2018, \$4,985k-2019) to complete the Plainview Distribution Substation Transformer Contingency project. This project is included in the 2018 EDO and Transmission Business Plan (BP) with a total funding level of \$8,876k (\$4,239k-2018, \$4,437k-2019), and is scheduled to begin in the first quarter of 2018 with completion in December 2019. The total cost of the project is more than the budgeted amount due to:

- 1) the scope of the distribution circuit improvements were altered to reduce impact along Hurstbourne Parkway after the project details were reviewed,
- 2) the substation cost estimates have increased due to higher equipment costs, contractor expenses and EPCM costs, and
- 3) additional transmission breakers and line work were added to the scope to provide enhanced transmission reliability to the substation and accommodate distribution work along Shelbyville Road.

The 2018 overrun of \$1,849k was approved, through the February Corporate RAC processes. The 2019 budget shortfall of \$548k will be addressed in the 2019 BP.

Background

The Distribution Substation Transformer Contingency Program (N1DT) list identifies substation transformers, which in the event of a transformer failure during high load periods, cannot be completely restored by switching to surrounding substations and circuits. Complete restoration to all customers would require either replacement of the failed transformer or installation of a portable transformer, which could take up to 36 hours depending on the specific location.

Plainview TR1, Aiken TR1, Hurstbourne TR1 and Hurstbourne TR2 have been identified as part of the N1DT Contingency Program.

Substation Transformer	Customers	Capacity (MVA)	2016 Summer Load (Actual MVA)	2020 Summer Load (Forecasted MVA)
Plainview TR1	6,664	44.8	30.9	31.1
Aiken TR1	5,021	44.8	29.8	30.0
Hurstbourne TR1	6,212	44.8	31.5	31.7
Hurstbourne TR2	3,966	44.8	30.6	30.7

Note: The 2016 Summer Load amounts are 10-15% lower than load levels observed in prior peak years (2010-2011) due to the milder summer conditions. During extreme hot weather, loads can be expected to be higher than observed 2016 levels.

The Plainview Substation is adjacent to both the Aiken and Hurstbourne Substations, has numerous tie circuits, has available space for expansion, and provides the maximum benefit to multiple substations in the N1DT Contingency Program. The installation of a new 44.8 MVA substation transformer and associated improvements in the Plainview Substation is proposed in order to provide the four existing 44.8 MVA transformers at Plainview, Aiken and Hurstbourne with contingency. Over 20,000 customers are served from these four existing transformers.

• **Alternatives Considered**

1. Recommended Option: NPVRR: \$12,824k
 The recommended option is to install a new 138/12kV, 44.8 MVA transformer and all associated substation equipment in the Plainview Substation. Also included are transmission and distribution line improvements to provide year round contingency for four area transformers while enhancing the reliability of transmission service to this station. Transmission Reliability recommends the installation of a high side ring-bus because of the 6,664 existing customers at the Plainview Substation and significant transmission line exposure. The addition of a ring-bus eliminates the possibility of a partial substation outage due to a single transmission line fault. The estimated capital cost of this option is \$11,073k.

2. Do Nothing Option: NPVRR: \$ 12,967k
 This project is consistent with the objectives of the Company’s Distribution Substation Transformer Contingency Program. The “do nothing” option was evaluated using standard

corporate metrics to quantify the “Cost of Unserved Energy” benefit for providing contingency throughout the year for four areas substation transformers. Without adequate contingency capacity, the failure of any of the four transformers addressed by this project could result in an extended outage for some customers of up to 24 hours until the transformer can be replaced or a mobile transformer installed. Using a 5% annual probability of a failure of any of the four transformers, a “Cost of Unserved Energy” of \$17.20/kwh, a reduction in outage duration of 24 hour outage (48 hour outage at Aiken due to substation size constraints) with the loads going unserved at Plainview (10.0 MW), Aiken (6.0 MW), Hurstbourne 1 (5.0 MW), and Hurstbourne 2 (5.0 MW), the “Cost of Unserved Energy” is approximately \$660k annually. The estimated capital cost of this option is \$0k.

3. Alternative 1: NPVRR: \$16,840k
This option considers the replacement of Aiken TR2 (28.0 MVA) with a larger unit (44.8 MVA) and adding a third 44.8 MVA transformer at Hurstbourne Substation. Extensive circuit additions along Hurstbourne Parkway and Shelbyville Road (including replacement of multiple transmission structures) would also be required. This option is more expensive, is a less effective system design, and results in less distribution reliability improvements than the recommended option and is not recommended. The estimated capital cost of this alternative is \$14,500k.

Project Description

• Project Scope

- Substation project #148490: estimated cost \$6,565k (\$3,519k-2018; \$3,046k-2019).
 - Install a new 44.8 MVA, 138-12 kV transformer, 138kV ring-bus, steel package, switchgear, and associated equipment in the Plainview Substation.
- Distribution project #148484: estimated cost \$3,549k (\$2,429k-2018; \$1,120k-2019).
 - Install approximately 10,000’ of 795 AAC, 795 AAC spacer cable, and 1000 Aluminum underground conductor as needed for four (4) new distribution exit circuits and install additional tie switches. Approximately 2500’ of new conduit with manholes will also be installed. Contingency is included to cover uncertainty of easement costs and possible rock removal.
- Transmission project #151752: estimated cost \$959k (\$140k-2018; \$819k-2019).
 - Install approximately 20 new structures along Shelbyville Road to accommodate additional distribution circuits.

A Network Integration Transmission Service (NITS) request will be submitted to TranServ International for a new delivery point. Loads will primarily be transferred from the existing Plainview transmission delivery point to the new Plainview delivery point so additional transmission investment is not anticipated.

• Project Timeline

- March, 2018: Open projects.
- April-May, 2018: Perform substation and transmission engineering design related tasks; order major equipment.

- June-August, 2018: Perform distribution engineering design related tasks for planned 2018 work; order materials.
 - September-December, 2018: Complete distribution conductor improvements for planned 2018 work; receive major substation and transmission equipment.
 - January-April, 2019: Perform substation site preparation and foundation work; perform distribution engineering design related tasks for planned 2018 work; order materials.
 - May-August, 2019: Progress on transmission foundations and pole installation; progress on distribution conductor improvements for planned 2018 work.
 - September-November, 2019: Install substation structures and equipment; progress on distribution conductor improvements.
 - December, 2019: Complete remainder of substation, transmission, and distribution improvements; commission substation.
- **Project Cost**
 - The total estimated cost of the project is \$11,073k. The substation cost estimates are consistent with the “Conceptual Level 1” engineering design designation. The distribution and transmission line cost estimates are consistent with the “Preliminary” engineering design designation and are based on field experience from similar projects. There is an estimated 10% of contingency (\$1,007k) incorporated into the project cost estimates. More detailed engineering designs will be conducted after project approval.

Economic Analysis and Risks

- **Bid Summary**
 - The substation transformer and steel package as well as transmission poles will be bid using established Supply Chain procedures.
 - For other requirements, Substation Construction and Maintenance (SC&M), Distribution Operations, and Transmission Lines will use existing material and labor contracts and follow established Supply Chain procedures.

• **Budget Comparison and Financial Summary**

Financial Detail by Year - Capital (\$000s)	2018	2019	2020	Post 2020	Total
1. Capital Investment Proposed	6,088	4,949	-	-	11,037
2. Cost of Removal Proposed	-	36	-	-	36
3. Total Capital and Removal Proposed (1+2)	6,088	4,985	-	-	11,073
4. Capital Investment 2018 BP	4,239	4,437	-	-	8,676
5. Cost of Removal 2018 BP	-	-	-	-	-
6. Total Capital and Removal 2018 BP (4+5)	4,239	4,437	-	-	8,676
7. Capital Investment variance to BP (4-1)	(1,849)	(512)	-	-	(2,361)
8. Cost of Removal variance to BP (5-2)	-	(36)	-	-	(36)
9. Total Capital and Removal variance to BP (6-3)	(1,849)	(548)	-	-	(2,397)

Financial Detail by Year - O&M (\$000s)	2018	2019	2020	Post 2020	Total
1. Project O&M Proposed					-
2. Project O&M 2018 BP					-
3. Total Project O&M variance to BP (2-1)	-	-	-	-	-

This project was identified and funded in the 2018 Business Plan at the following levels: Substation project #148490 \$4,929k (\$2,988k-2018; \$1,941k-2019); Distribution project #148484 \$3,297k (\$1,111k-2018; \$2,186k-2019); Transmission project #151752 \$450k (\$140k-2018; \$310k-2019). The 2018 BP amounts are lower than the requested amount by \$2,397k. The 2018 incremental funding was approved through the Corporate RAC process in February 2018, while the remaining amount will be addressed through the 2019 BP process.

Financial Summary (\$000s):

Discount Rate:	6.58%
Capital Breakdown:	
Labor:	\$ 470
Contract Labor:	\$ 3,975
Materials:	\$ 3,909
Local Engineering:	\$ 898
Burdens:	\$ 772
Contingency:	\$ 1,007
Transportation:	\$ 42
Reimbursements:	(\$ 0)
Net Capital Expenditure:	\$11,073

- **Assumptions**
 - The project unknowns will not exceed the estimated contingency amounts.
 - The estimated cost of the distribution and transmission line improvements are consistent with similar past projects.
 - No significant unknown costs for transmission improvements will be associated with the addition of a new service point.

- **Environmental**
 - There are no known environmental issues at this time.

- **Risks**
 - The cost of the distribution portion of the project could escalate because costs are based on similar completed work for other projects of similar scope and size.
 - Additional private easements will need to be obtained to complete work as planned.
 - The potential for rock removal could increase costs, but should be covered by the contingency included for the Distribution Circuit work estimates.
 - Failure to approve this project could negatively impact the company's ability to provide service to existing customers during planned or unplanned outage events.

Investment Proposal for Investment Committee Meeting on: May 30, 2018

Project Name: Pleasure Ridge Distribution Substation Transformer Contingency Project

Total Expenditures: \$9,947k (includes \$933k of contingency)

Project Number(s): Distribution Substations 155386, Distribution Lines 131715, Transmission Lines 157313

Business Unit/Line of Business: Electric Distribution Operations

Prepared/Presented By: Alan Black/Dan Hawk

Executive Summary

Electric Distribution Operations (EDO) – Electrical Engineering and Planning (EEP) seeks funding authority for distribution substation, distribution circuit, and transmission line improvements in and near the LG&E Pleasure Ridge Substation. The Pleasure Ridge substation is located near the intersection of Dixie Highway and Atlas Powder Road and directly serves approximately 8,000 commercial and residential customers. The purpose of this proposed project is to provide year-round full contingency to serve load at the Pleasure Ridge TR1, Ashby TR1 and TR2 and Terry TR2 transformers in support of the Company’s Distribution Substation Transformer Contingency Program (N1DT). This will be accomplished by increasing substation capacity at the Pleasure Ridge Substation through the installation of a second 44.8 MVA transformer. Additionally, transmission and distribution reliability enhancements will be made through substation and circuit upgrades. This project will also improve the reliability of transmission service to the Pleasure Ridge Substation with the installation of a ring-bus to reduce the likelihood of a transmission related outage.

Approval is requested in the amount of \$9,947k (\$987k-2018, \$6,052k-2019, \$2,908k-2020) to complete the Pleasure Ridge Distribution Substation Transformer Contingency project. This project replaces previously planned N1DT projects in the 2018 Business Plan (BP) funded at \$987k in 2018. The 2019 and 2020 amounts will be requested as part of the 2019 BP process.

Background

The Distribution Substation Transformer Contingency Program (N1DT) list identifies substation transformers, which in the event of a transformer failure during high load periods, cannot be completely restored by switching to surrounding substations and circuits. Complete restoration to all customers would require either replacement of the failed transformer or installation of a portable transformer, which could take 36 hours or longer depending on the specific location.

Pleasure Ridge TR1, Ashby TR1 and TR2 and Terry TR2 have been identified as part of the N1DT Contingency Program.

Substation Transformer	Customers	Capacity (MVA)	2016 Summer Load (Actual MVA)	2020 Summer Load (Forecasted MVA)
Pleasure Ridge TR1	8,063	44.8	32.3	33.5
Ashby TR1	4,262	28.0	21.6	21.8
Ashby TR2	5,352	28.0	22.6	22.8
Terry TR2	5,115	44.8	36.0	38.1

Note: The 2016 Summer Load amounts are 10-15% lower than load levels observed in prior peak years (2010-2011) due to the milder summer conditions. During extreme hot weather, loads can be expected to be higher than observed 2016 levels.

The Pleasure Ridge Substation is adjacent to both the Ashby and Terry Substations, has tie circuits, has available space for expansion, and provides the maximum benefit to multiple substations in the N1DT Contingency Program. The installation of a new 44.8 MVA substation transformer and associated improvements in the Pleasure Ridge Substation is proposed in order to provide the existing 44.8 MVA transformers at Pleasure Ridge and Terry, and the two 28.0 MVA transformers at Ashby with contingency. Over 22,000 customers are served from these four existing transformers.

• **Alternatives Considered**

1. Recommended Option: NPVRR: \$10,967k
 The recommended option is to install a new 138/12kV, 44.8 MVA transformer and all associated substation equipment in the Pleasure Ridge Substation. Also included are transmission and distribution line improvements to provide year round contingency for four area transformers while enhancing the reliability of transmission service to this station. Transmission Reliability recommends the installation of a high side ring-bus because of the 8,063 existing customers at the Pleasure Ridge Substation and significant transmission line exposure. The addition of a ring-bus eliminates the possibility of a partial substation outage due to a single transmission line fault. The estimated capital cost of this option is \$9,947k.

2. Do Nothing Option: NPVRR: \$12,355k
 This project is consistent with the objectives of the Company’s Distribution Substation Transformer Contingency Program. The “do nothing” option was evaluated using standard corporate metrics to quantify the “Cost of Unserved Energy” benefit for providing contingency throughout the year for four areas substation transformers. Without adequate contingency capacity, the failure of any of the four transformers addressed by this project could result in an extended outage for some customers of up to 24 hours until the transformer can be replaced or a mobile transformer installed. Using a 5% annual probability of a failure of any of the four transformers, a “Cost of Unserved Energy” of \$17.20/kwh, a reduction in outage duration of 24 hour outage with the loads going unserved at Pleasure Ridge (10.365 MW), Ashby TR1 and TR2 (10.939 MW), TE (5.569 MW), the “Cost of Unserved Energy” is approximately \$555k annually.

3. Alternative 1: NPVRR: \$16,277k
- This option considers the replacement of Terry TR1 (28.0 MVA) with a larger unit (44.8 MVA) and adding a third 28.0 MVA transformer at Ashby Substation. Extensive circuit additions along Dixie Highway (including replacement of multiple transmission structures) would also be required. This option is more expensive, is a less effective system design, and results in less distribution reliability improvements than the recommended option and is not recommended. The estimated capital cost of this alternative is \$15,000k.

Project Description

• Project Scope

- Substation project #155386: estimated cost \$6,430k (\$987k-2018; \$3,886k-2019; \$1,557-2020).
 - Install a new 44.8 MVA, 138-12 kV transformer, 138kV ring-bus, steel package, switchgear, and associated equipment in the Pleasure Ridge Substation.
- Distribution project #131715: estimated cost \$3,315k (\$2,129k-2019; \$1,186k-2020).
 - Install approximately 7,600' of 1000MCM UG Conductor, 6,250' of 795 AAC spacer cable, along with additional tie switches. Approximately 2700' of new conduit with manholes will also be installed. Contingency is included to cover uncertainty of easement costs and possible rock removal.
- Transmission project #157313: estimated cost \$202k (\$37k-2019; \$165k-2020).
 - Install two directly embedded dead end structures and two spans of 1272 kcmil 61 strand AAC into the face of steel.

• Project Timeline

- June, 2018: Open projects.
- June-December, 2018: Perform substation and transmission engineering design related tasks; order major equipment.
- June-December, 2018: Perform distribution engineering design related tasks for planned 2019 work.
- January-July, 2019: Receive major substation equipment.
- May-June, 2019: Order Transmission material.
- November-December, 2019: Perform transmission line work.
- August, 2019-February, 2020: Perform substation site preparation and foundation work; complete distribution engineering design related tasks for planned 2019 work; order materials; start construction.
- March-September, 2020: Install substation structures and new equipment; install remote-end transmission panels; progress on distribution conductor improvements.
- October-December, 2020: Complete remainder of substation and distribution improvements; commission substation.

• Project Cost

- The total estimated cost of the project is \$9,947k. The substation cost estimates are consistent with the "Conceptual Level 1" engineering design designation. The distribution and transmission line cost estimates are consistent with the "Preliminary" engineering design designation and are based on field experience from similar projects. There is an estimated

contingency of \$933k incorporated into the project cost estimates. More detailed engineering designs will be conducted after project approval.

Economic Analysis and Risks

- **Bid Summary**

- The substation transformer and steel package will be bid using established Supply Chain procedures.
- For other requirements, Substation Construction and Maintenance (SC&M), Distribution Operations, and Transmission Lines will use existing material and labor contracts and follow established Supply Chain procedures.

- **Budget Comparison and Financial Summary**

Financial Detail by Year - Capital (\$000s)	2018	2019	2020	Post 2020	Total
1. Capital Investment Proposed	987	6,010	2,885	-	9,882
2. Cost of Removal Proposed	-	42	23	-	65
3. Total Capital and Removal Proposed (1+2)	987	6,052	2,908	-	9,947
4. Capital Investment 2018 BP	-	-	-	-	-
5. Cost of Removal 2018 BP	-	-	-	-	-
6. Total Capital and Removal 2018 BP (4+5)	-	-	-	-	-
7. Capital Investment variance to BP (4-1)	(987)	(6,010)	(2,885)	-	(9,882)
8. Cost of Removal variance to BP (5-2)	-	(42)	(23)	-	(65)
9. Total Capital and Removal variance to BP (6-3)	(987)	(6,052)	(2,908)	-	(9,947)

Financial Detail by Year - O&M (\$000s)	2018	2019	2020	Post 2020	Total
1. Project O&M Proposed					-
2. Project O&M 2018 BP					-
3. Total Project O&M variance to BP (2-1)	-	-	-	-	-

This project replaces N1DT projects previously identified and funded in the 2018 Business Plan to cover 2018 funding. The reallocation of funding for 2018 was approved in the Corporate RAC process. Funding for 2019 and 2020 will be included in the proposed 2019 Business Plan.

Financial Summary (\$000s):

Discount Rate:	6.59%
Capital Breakdown:	
Labor:	\$ 522
Contract Labor:	\$ 3,724
Materials:	\$ 3,340
Local Engineering:	\$ 618
Burdens:	\$ 735
Contingency:	\$ 933
Transportation:	\$ 75
Reimbursements:	(\$ 0)
Net Capital Expenditure:	\$ 9,947

- **Assumptions**

- The project unknowns will not exceed the estimated contingency amounts.
- The estimated cost of the distribution and transmission line improvements are consistent with similar past projects.
- No significant unknown costs for transmission improvements will be associated with the addition of a new service point.

- **Environmental**

- There are no known environmental issues at this time.

- **Risks**

- The cost of the distribution portion of the project could escalate because costs are based on similar completed work for other projects of similar scope and size.
- Additional private easements will need to be obtained to complete work as planned. Failure to obtain easements could result in transfer of work from distribution to transmission at similar funding level.
- The potential for rock removal could increase costs, but should be covered by the contingency included for the Distribution Circuit work estimates.
- Failure to approve this project could negatively impact the company's ability to provide service to existing customers during planned or unplanned outage events.

Conclusions and Recommendation

It is recommended that the Investment Committee approve the Pleasure Ridge Distribution Substation Contingency Project for \$9,947k to provide Distribution Substation Transformer Contingency Program (N1DT) benefits in Louisville, KY.

Approval Confirmation for Capital Projects Greater Than \$2 million:

The Capital project spending included in this Investment Proposal has been approved by the members of the LKE Investment Committee. Pursuant to the LKE Authority Limit Matrix, the signatures below are also required for approval of this Capital project spending request.

Kent W. Blake
Chief Financial Officer

Date

Paul W. Thompson
Chairman, CEO and President

Date

Investment Proposal for Investment Committee Meeting on: February 23, 2017

Project Name: Stonewall Distribution Substation Transformer Contingency Project

Total Expenditures: \$8,010k (includes \$728k of contingency)

Project Number(s): Distribution Substations 148892, Distribution Lines 152865, Transmission Lines 134245

Business Unit/Line of Business: Electric Distribution Operations

Prepared/Presented By: James Cline/Kevin Patterson

Executive Summary

KU Electric Distribution Operations (EDO) - Electrical Engineering and Planning (EEP) seeks funding authority for distribution substation, distribution circuit, and transmission line improvements in and near the KU Stonewall Substation. Stonewall Substation is located on Arrowhead Drive on the southwest side of Lexington, KY and serves approximately 5,494 commercial and residential customers. The purpose of this Investment Proposal is to request substation capacity improvements that includes the installation of a second 37.3 MVA transformer in the Stonewall Substation along with associated transmission and distribution circuit improvements in order to remove the Stonewall, Clays Mill, Parkers Mill 1, and Parkers Mill 2 transformers from the Company's Distribution Substation Transformer Contingency Program (N1DT) list. This project also improves the reliability of transmission service at Stonewall Substation with the installation of two transmission line breakers, reducing the time necessary to fault locate and perform switching in the event of a transmission line outage.

Approval is requested in the amount of \$8,010k (\$2,626k-2017, \$5,384k-2018) to complete the Stonewall Distribution Substation Transformer Contingency project. This project is included in the 2017 EDO and Transmission Business Plan (BP) with a total funding level of \$4,621k (\$1,997k-2017, \$2,624k-2018), and is scheduled to begin in March 2017 with completion in December 2018. The total cost of the project is more than the budgeted amount because:

- 1) the scope of the distribution circuit improvements increased slightly after the project details were reviewed,
- 2) the estimate for the unit cost of the distribution circuit improvements plus the unit cost of the transmission work in the Stonewall substation increased significantly, and
- 3) two 69kV line breakers and associated fiber communications were added to the project to enhance the transmission reliability.

The 2017 overrun of \$629k will be reallocated from other EDO and Transmission projects, through the February RAC processes. The 2018 budget shortfall of \$2,760k will be addressed in the 2018 BP.

Background

The Distribution Substation Transformer Contingency Program (N1DT) list identifies substation transformers, which in the event of a transformer failure during high load periods, cannot be completely restored by switching to surrounding substations and circuits. Complete restoration to all customers would require either replacement of the failed transformer or installation of a portable transformer, which could take up to 36 hours depending on the specific location.

The Stonewall, Clays Mill, Parkers Mill 1, and Parkers Mill 2 are all on the N1DT Contingency Program list.

	Customers	Capacity (MVA)	% Loaded Summer (Actual) (1)	% Loaded 2016 Summer (Forecast)
Stonewall	5,494	37.3	94% (estimated)	83%
Clays Mill	6,095	37.3	90% (estimated)	80%
Parkers Mill 1	2,971	22.4	83%	76%
Parkers Mill 2	4,090	22.4	84% (estimated)	79%

Note (1): The “% Loaded Summer (Actual)” amounts are “estimated” because switching was performed after the last temperature extreme summer peak to help manage the normal service transformer loads. The “estimated” amounts are a representation of the historical summer peak load levels with the present day switching.

The Stonewall Substation is adjacent to both the Clays Mill and Parkers Mill Substations, has multiple tie circuits, has available space for expansion, and provides the maximum benefit to multiple substations on the N1DT Contingency Program list. When the benefit to cost ratio of the proposed improvements are evaluated and compared to other N1DT projects, the Stonewall project ranks at the top of the N1DT Contingency Program list. The installation of a new 37.3 MVA substation transformer and associated improvements in the Stonewall Substation is proposed in order to remove the Stonewall, Clays Mill, Parkers Mill 1, and Parkers Mill 2 transformers from the Company’s N1DT Contingency Program list.

- **Alternatives Considered**

1. Recommended Option: NPVRR: \$9,197k
The recommended option is to install a new standard 37.3 MVA transformer, steel package, transformer breaker, and two 69kV line breakers in the Stonewall Substation along with associated transmission and distribution line improvements to provide year round contingency for four area transformers while enhancing the reliability of transmission service to this station. Transmission Reliability recommends the installation of two 69kV line breakers because of the 5,494 existing customers (5,909 customers post project after load transfers) and 652 MW-Miles of transmission line exposure. The addition of line breakers reduces the time necessary to fault locate and perform switching in the event of a transmission line outage. This option is expected to remove the Stonewall, Clays Mill,

Parkers Mill 1, and Parkers Mill 2 transformers from the N1DT Contingency Program list. The estimated capital cost of this option is \$8,010k.

2. Do Nothing Option: NPVRR: \$11,057k
This project is consistent with the objectives of the Company's Distribution Substation Transformer Contingency Program. The "do nothing" option was evaluated using standard corporate metrics to quantify the "Cost of Unserved Energy" benefit for providing contingency throughout the year for four areas substation transformers. Without adequate contingency capacity, the failure of any of the four transformers addressed by this project could result in an extended outage for some customers of up to 24 hours until the transformer can be replaced or a mobile transformer installed. Using a 5% annual probability of a failure of any of the four transformers, a "Cost of Unserved Energy" of \$17.20/kwh, a reduction in outage duration of 24 hour outage with the loads going unserved at Stonewall (10.2 MW), Clays Mill (7.6 MW), Parkers Mill 1 (5.4 MW), and Parkers Mill 2 (3.7 MW), the "Cost of Unserved Energy" is approximately \$555k annually. The estimated capital cost of this option is \$0k.
3. Alternative 1: NPVRR: \$9,660k
This option considers the replacement of 2-22.4 MVA with 2-37.3 MVA transformers in the Parkers Mill Substation (plus associated distribution line improvements) plus the installation of transmission line breakers in the Stonewall Substation in order to accomplish similar benefits as the recommended option. This option is more expensive, adds less new transformer and circuit capacity, is a less effective system design, and results in less distribution reliability improvements than the recommended option and is not recommended. The estimated cost of this alternative is \$8,423k.

Project Description

- **Project Scope**
 - Substation project #148892: estimated cost \$4,375k (\$2,062k-2017; \$2,313k-2018).
 - Install a new 37.3 MVA, 69-12 kV transformer, 12kV breakers, transformer breaker, two 69kV line breakers, steel package, control house, and associated equipment in the Stonewall Substation; install the mobile transformer to serve the substation load during construction.
 - Distribution project #152865: estimated cost \$1,315k (\$314k-2017; \$1,001k-2018).
 - Install approximately 7,900' of 795 AAC, 795 AAC spacer cable, and parallel 1000 Aluminum underground conductor as needed for two new distribution exit circuits and to relocate other substation exit circuits to the new substation transformer; perform other temporary work as necessary to accommodate the use of the mobile transformer during construction.
 - Transmission project #134245: estimated cost \$2,320k (\$250k-2017; \$2,070k-2018).
 - Install poles and conductor as needed to connect the 69 kV transmission line to the new Stonewall Substation structure; replace transmission poles and install fiber communications as necessary between the Stonewall and Parkers Mill substation to satisfy transmission relaying requirements; perform other temporary work as

- necessary to accommodate the use of the mobile transformer in the Stonewall substation during construction.
- A Network Integration Transmission Service (NITS) request was submitted to TranServ International for a new delivery point. Loads will primarily be transferred from the existing Stonewall transmission delivery point to the new Stonewall delivery point, although other loads (estimated net 3.3 MW summer) will be transferred to the Stonewall Substation from adjacent substations.
- **Project Timeline**
 - March, 2017: Open projects.
 - April-May, 2017: Perform substation and transmission engineering design related tasks; order major equipment.
 - June-August, 2017: Perform distribution engineering design related tasks for planned 2017 work; order materials.
 - September-December, 2017: Complete distribution conductor improvements for planned 2017 work; receive major substation and transmission equipment.
 - January-April, 2018: Perform substation site preparation and foundation work; perform distribution engineering design related tasks for planned 2018 work; order materials.
 - May-August, 2018: Progress on transmission foundations and pole installation; progress on distribution conductor improvements for planned 2018 work.
 - September-November, 2018: Install mobile transformer, substation structures and equipment; progress on distribution conductor improvements.
 - December, 2018: Complete remainder of substation, transmission, and distribution improvements; commission substation.
 - **Project Cost**
 - The total estimated cost of the project is \$8,010k. The substation cost estimates are consistent with the “Conceptual Level 1” engineering design designation. The distribution and transmission line cost estimates are consistent with the “Preliminary” engineering design designation and are based on field experience from similar projects. There is an estimated 10% of contingency (\$728k) incorporated into the project cost estimates. More detailed engineering designs will be conducted after project approval.

Economic Analysis and Risks

- **Bid Summary**
 - The substation transformer and steel package as well as transmission poles will be bid using established Supply Chain procedures.
 - For other requirements, Substation Construction and Maintenance (SC&M), Distribution Operations, and Transmission Lines will use existing material and labor contracts and follow established Supply Chain procedures.

• **Budget Comparison and Financial Summary**

Financial Detail by Year - Capital (\$000s)	2017	2018	2019	Post 2019	Total
1. Capital Investment Proposed	2,565	4,658	-	-	7,223
2. Cost of Removal Proposed	61	726	-	-	787
3. Total Capital and Removal Proposed (1+2)	2,626	5,384	-	-	8,010
4. Capital Investment 2017 BP	1,997	2,448	-	-	4,445
5. Cost of Removal 2017 BP	-	177	-	-	177
6. Total Capital and Removal 2017 BP (4+5)	1,997	2,625	-	-	4,622
7. Capital Investment variance to BP (4-1)	(568)	(2,210)	-	-	(2,778)
8. Cost of Removal variance to BP (5-2)	(61)	(549)	-	-	(610)
9. Total Capital and Removal variance to BP (6-3)	(629)	(2,759)	-	-	(3,388)

Financial Detail by Year - O&M (\$000s)	2017	2018	2019	Post 2019	Total
1. Project O&M Proposed					-
2. Project O&M 2017 BP					-
3. Total Project O&M variance to BP (2-1)	-	-	-	-	-

This project was identified and funded in the 2017 Business Plan at the following levels: Substation project #148892 \$3,231k (\$1,566k-2017; \$1,665k-2018); Distribution project #152865 \$800k (\$314k-2017; \$486k-2018); Transmission project #134245 \$591k (\$117k-2017; \$474k-2018). The 2017 and 2018 BP amounts are lower than the requested amount by \$3,388k, some of which will be addressed through reallocations through RAC processes in 2017, while the remaining amount will be addressed through the 2018 BP process.

Financial Summary (\$000s):

Discount Rate:	6.49%
Capital Breakdown:	
Labor:	\$ 457
Contract Labor:	\$ 2,693
Materials:	\$ 2,896
Local Engineering:	\$ 615
Burdens:	\$ 498
Contingency:	\$ 728
Transportation:	\$ 123
Reimbursements:	(\$ 0)
Net Capital Expenditure:	\$ 8,010

- **Assumptions**
 - The project unknowns will not exceed the estimated contingency amounts.
 - The estimated cost of the distribution and transmission line improvements are consistent with similar past projects.
 - The wood transmission poles between the Stonewall and Parkers Mill substations will need to be replaced in order to accommodate the fiber communications; the specific number will be determined after a detailed engineering design can be completed.
 - No significant unknown costs for transmission improvements will be associated with the addition of a new service point or the small amount of load transferred from other stations.

- **Environmental**
 - There are no known environmental issues at this time.

- **Risks**
 - The cost of the distribution portion of the project could escalate because costs are based on similar completed work for other projects of similar scope and size.
 - Failure to approve this project could negatively impact the company's ability to provide service to existing customers during planned or unplanned outage events.

Conclusions and Recommendation

It is recommended that the Investment Committee approve the Stonewall Distribution Substation Expansion project for \$8,010k to provide Distribution Substation Transformer Contingency Program (N1DT) benefits in Lexington, KY.

Approval Confirmation for Capital Projects Greater Than or Equal to \$2 million:

The Capital project spending included in this Investment Proposal has been approved by the members of the LKE Investment Committee. Pursuant to the LKE Authority Limit Matrix, the signatures below are also required for approval of this Capital project spending request.

Kent W. Blake
Chief Financial Officer

Paul W. Thompson
President and Chief Operating Officer

Investment Proposal for Investment Committee Meeting on: December 20, 2017

Project Name: West Hickman Substation Transformer Addition

Total Approved Expenditures: \$4,362k (Approved on 03/31/2016)

Total Revised Expenditures: \$5,218k, with an additional \$856k requested

Project Number(s): Substation-150717, Distribution-150719, Transmission-150743

Business Unit/Line of Business: Electric Distribution Operations

Prepared/Presented By: Tony Durbin

Reason for Revision

The original investment proposal (attached) for the West Hickman Substation Transformer Addition project was approved by the Investment Committee on March 31, 2016 for \$4,362k; the substation portion was \$3,150k.

Substation Engineering started to project higher than approved total costs for the substation portion of the project during the third quarter of 2017, primarily due to higher than estimated Company (\$366k) and Contractor (\$232k) labor costs and overhead burdens (\$261k). During September 2017, Substation Engineering submitted an AIP seeking authorization to invest an additional \$465k on the substation portion of the project, to enable continuation of construction. The purpose of this investment proposal is to seek authorization to increase the original project value by \$856k, the total projected overrun based on Substation Engineering's final cost estimate for the overall project.

Category (Substation Only)	Original Estimate Amount (\$000s)	Current Actuals + Additional Estimated Cost (\$000s)	Difference (\$000s)
Company Labor	\$ 52	\$ 418	\$ 366
Contract Labor	\$ 898	\$ 1,130	\$ 232
Materials	\$ 1,427	\$ 1,548	\$ 121
Local Engineering	\$ 359	\$ 379	\$ 20
Burdens	\$ 108	\$ 369	\$ 261
Contingency	\$ 286	\$ 41	\$ (245)
Transportation	\$ 20	\$ 55	\$ 35
Miscellaneous	\$ 0	\$ 66	\$ 66
Total	\$ 3,150	\$ 4,006	\$ 856

Company Labor

Company labor costs for the project are estimated to run over primarily due to unplanned utilization of company resources for above grade site construction work. When the project design and plans were created in 2015, Substation Engineering originally planned to use contract labor, and budgeted \$738k, for all site construction work. Since the original project estimate was completed, contract construction costs for substation projects have escalated more quickly than inflation, likely due to elevated construction activity ongoing regionally. Relatedly, as the West Hickman project progressed during 2017, Substation Engineering experienced higher than estimated site construction costs. Contracted costs (\$700k) for below grade construction nearly consumed the total original budget allocation for above and below grade site construction. Substation Engineering ultimately assigned available Company labor to complete the planned above grade construction, and estimates that \$385k will be required to finish the associated scope of work.

Contract Labor

Due to the high number of on-going substation projects, Substation Engineering outsourced design engineering for the West Hickman project to Burns and McDonnell. The original estimate for contract engineering on the project was \$160k; however, Substation Engineering now estimates that final contract engineering costs on the project will total \$435k. For this project, historical engineering costs were used to develop the engineering cost estimate, prior to development of detailed site plans and man-hour estimates. Once the final project cope was defined, and detailed man-hour requirements were calculated, the original project estimate and capital authority levels were not revised to reflect the higher contract engineering man-hour requirements. Substation Engineering should have addressed this variance to original budget earlier in the project execution.

Financial Summary (\$000s):	Approved	Revised	Explanation
Discount Rate:	6.5%	6.32%	See explanations above
Capital Breakdown:			
Labor:	\$ 103	\$ 474	
Contract Labor:	\$ 1,531	\$ 1,828	
Materials:	\$ 1,671	\$ 1,817	
Local Engineering:	\$ 462	\$ 492	
Burdens:	\$ 174	\$ 441	
Contingency:	\$ 397	\$ 41	
Transportation:	\$ 24	\$ 59	
Miscellaneous:	\$ 0	\$ 66	
Reimbursements:	(\$ 0)	(\$ 0)	
Net Capital Expenditure:	\$ 4,362	\$ 5,218	
NPVRR:	\$ 5,475	\$ 6,231	

Financial Detail by Year - Capital (\$000s)	Pre-2017	2017	2018	Post 2018	Total
1. Capital Investment Proposed	1,771	3,175	232	-	5,178
2. Cost of Removal Proposed	-	40	-	-	40
3. Total Capital and Removal Proposed (1+2)	1,771	3,215	232	-	5,218
4. Capital Investment 2017 BP	1,371	2,778	-	-	4,149
5. Cost of Removal 2017 BP	3	15	-	-	18
6. Total Capital and Removal 2017 BP (4+5)	1,374	2,793	-	-	4,167
7. Capital Investment variance to BP (4-1)	(400)	(397)	(232)	-	(1,029)
8. Cost of Removal variance to BP (5-2)	3	(25)	-	-	(22)
9. Total Capital and Removal variance to BP (6-3)	(397)	(422)	(232)	-	(1,051)

Financial Detail by Year - O&M (\$000s)	Pre-2017	2017	2018	Post 2018	Total
1. Project O&M Proposed	-	-	-	-	-
2. Project O&M 2017 BP	-	-	-	-	-
3. Total Project O&M Variance to BP (2-1)	-	-	-	-	-

The 2018 BP did not include this project, because it was originally anticipated to be completed in 2017. Transmission has some minor costs in 2018. The incremental funding in 2017 has been approved by the Corporate RAC process and the 2018 carry-over will be covered through the Corporate RAC process as well.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 44

Responding Witness: John K. Wolfe

Q-44. Refer to the direct testimony of Lonnie E. Bellar, pages 52-53, wherein he discusses the DCC and the costs thereof.

- a. Provide a breakdown of the \$13M capital cost, including how the costs will be allocated between each company.

A-44.

- a. The costs are split 42% LG&E and 58% KU.

Amount	Category
\$ 297,000	Labor
\$ 9,841,000	Contract Labor
\$ 2,467,000	Materials
\$ 64,000	Miscellaneous
\$ 497,000	Burdens/Local Engineering
\$ 167,000	Property Tax Capitalization
\$ 13,333,000	Total

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 45

Responding Witness: Lonnie E. Bellar

- Q-45. Refer to the direct testimony of Lonnie E. Bellar, pages 53, wherein he discusses the planned “additional building on existing property at the South Service Center in Louisville.”
- a. Explain this proposed building, including the need for it to service customers. Any response should detail the cost justification for the investment, including detail of the expected savings resulting thereof.
 - b. Further, provide a breakdown of the estimated capital cost, including how the costs will be allocated between each company.
 - c. Are any capital costs or O&M expenses included in the forecasted period for recovery in this matter? If the response is in the affirmative, provide citation to all such costs
- A-45.
- a-c. KU is not a party to this project.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 46

Responding Witness: John K. Wolfe

Q-46. Refer to the direct testimony of Lonnie E. Bellar, page 53, where he states that the DCC “facility is specifically designed to house 12-hour shift employees.”

- a. Explain what Mr. Bellar intended to indicate with this statement, including what design differences were necessary or implemented to accommodate “12-hour shift employees.”

A-46.

- a. The referenced DCC facility will house Distribution System Operators (DSO's) who work scheduled 12-hour shifts. DSO's also routinely work longer duration shifts when necessary to respond to abnormal distribution system operating conditions resulting from weather extremes.

Modern ergonomic workstations are being placed in the referenced DCC to provide for healthy working conditions for personnel who routinely work extended hours in a seated position.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General’s Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 47

Responding Witness: Lonnie E. Bellar

Q-47. Refer to the direct testimony of Lonnie E. Bellar, page 55.

- a. Provide the table presented on page 55 for the period June 30, 2018, to April 30, 2020.

A-47.

- a. The following chart summarizes distribution capital expenditures by company from June 30, 2018, to April 30, 2020 (in millions).

	KU	LG&E	Total
Connect New Customer	\$77	\$58	\$135
Enhance The Network			
<i>Distribution Automation</i>	\$22	\$29	\$51
<i>Circuit Hardening/Reliability</i>	\$25	\$15	\$40
<i>Transformer Contingency</i>	\$10	\$15	\$25
<i>Other</i>	\$48	\$25	\$73
Maintain The Network	\$69	\$88	\$157
Repair The Network	\$11	\$16	\$27
Miscellaneous	\$4	\$1	\$5
Total	\$266	\$247	\$513

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 48

Responding Witness: Lonnie E. Bellar / Robert M. Conroy

Q-48. Refer to the direct testimony of Lonnie E. Bellar, page 56, and Exhibit LEB-6 to Mr. Bellar's testimony.

- a. Provide the same exhibit but with an additional column down the right hand side providing the amounts for June 30, 2018, to April 30, 2020.
- b. For which of the projects listed have the Companies requested and received CPCNs?
- c. For which of the projects listed do the Companies intend to request a CPCN?

A-48.

- a. See attached.
- b. With the exception of the Distribution Automation, which the Companies received a Certificate of Public Convenience and Necessity ("CPCN") in Case No. 2016-00370, the Companies have not applied for a CPCN for any of the projects for which cost recovery is sought in their applications. KRS 278.020(1) requires a utility to obtain a CPCN only for construction that is not "an ordinary extension of an existing system in the usual course of business." The projects included in the application are extensions of the Company's systems in the ordinary course of business and do not require a CPCN in compliance with 807 KAR 5:001 Section 15(3).

Except for the Distribution Automation discussed above, none of the projects listed in LEB-6 for which cost recovery is sought in the Companies' applications require a CPCN as each meets the regulatory definition of an extension in the ordinary course of business.

- c. See the response to part b.

**Smart Grid Investments
2019 BP
\$000**

Project	2019	2020	2021	2022	2023	Total	January 1, 2018 to October 31, 2019	June 30, 2018 to April 30, 2020
<u>LG&E</u>								
Distribution and Customer Services:								
Advanced Metering Systems (AMS) Opt In DSM	\$ 250	\$ 30	\$ 32	\$ 33	\$ 34	\$ 378	\$ 312	\$ 444
Distribution Automation	16,557	14,384	14,384	2,550	3,450	51,325	28,457	29,485
Electro-Mechanical Relay Replacement	3,000	2,500	2,500	2,500	2,500	13,000	2,673	3,336
Fuse Savings Pilot	350	350	490			1,190	302	452
Transmission:								
Control Houses	-	-	2,062	2,065	1,875	6,002	29	28
Fiber/Telecom	-	-	-	-	-	-	-	-
Relay Panels	3,959	2,542	2,178	2,171	2,873	13,722	6,801	6,294
RTU's	610	874	1,120	1,125	1,302	5,031	900	1,037
Switch - Auto	371	-	-	-	-	371	2,348	1,234
Switch - Motor Operated	156	507	-	-	-	663	391	524
Total LG&E	\$ 25,253	\$ 21,187	\$ 22,766	\$ 10,443	\$ 12,033	\$ 91,682	\$ 42,213	\$ 42,834
<u>KU</u>								
Distribution and Customer Services:								
Advanced Metering System (AMS) Opt In DSM	\$ 250	\$ 31	\$ 32	\$ 33	\$ 34	\$ 378	\$ 554	\$ 444
Distribution Automation	11,686	9,590	6,590	1,700	2,300	31,866	23,808	22,222
Electro-Mechanical Relay Replacement	3,000	2,500	2,500	2,500	2,500	13,000	2,776	3,637
Fuse Savings Pilot	150	150	210			510	130	195
KU SCADA Expansion	4,936	4,998	5,085	5,000	5,000	25,019	6,525	7,976
Transmission:								
Control Houses	3,687	5,242	4,464	3,994	3,520	20,906	5,845	6,815
Fiber/Telecom	-	345	349	-	-	694	-	-
Relay Panels	2,535	4,999	4,517	4,386	5,722	22,159	4,737	5,141
RTU's	2,573	2,843	2,133	2,119	2,359	12,027	3,804	5,111
Switch - Auto	953	683	-	-	-	1,636	4,013	2,755
Switch - Motor Operated	3,079	1,737	1,795	2,238	-	8,849	3,644	4,362
Total KU	\$ 32,850	\$ 33,118	\$ 27,675	\$ 21,969	\$ 21,434	\$ 137,046	\$ 55,837	\$ 58,658

KENTUCKY UTILITIES COMPANY

**Response to Attorney General’s Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 49

Responding Witness: Christopher M. Garrett

Q-49. Contributions in Aid of Construction (“CIAC”): Provide the CIAC balances for each month in 2016, 2017, and 2018 YTD for each company. Explain how CIACs are reflected in the base year and forecasted cost of service.

A-49. See below for CIAC by month for 2016, 2017, and 2018 YTD. CIAC results in a reduction to capitalization and rate base as reflected in CWIP.

Month	CIAC	Month	CIAC
Jan-16	\$ 822,546.94	Jun-17	1,204,571.49
Feb-16	338,912.37	Jul-17	330,854.79
Mar-16	301,049.22	Aug-17	509,342.91
Apr-16	1,180,960.99	Sep-17	740,739.94
May-16	486,373.76	Oct-17	510,549.86
Jun-16	545,300.51	Nov-17	185,654.81
Jul-16	408,766.37	Dec-17	282,489.89
Aug-16	857,318.92	Jan-18	493,548.27
Sep-16	50,079.14	Feb-18	135,794.19
Oct-16	225,905.19	Mar-18	626,892.42
Nov-16	529,401.13	Apr-18	123,522.35
Dec-16	750,291.22	May-18	538,115.36
Jan-17	337,834.01	Jun-18	412,072.80
Feb-17	349,320.76	Jul-18	524,666.59
Mar-17	839,772.22	Aug-18	894,630.74
Apr-17	203,459.75	Sep-18	480,859.38
May-17	453,965.14	Oct-18	1,111,746.88

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 50

Responding Witness: Christopher M. Garrett

- Q-50. Do the Companies recover income taxes assessed on CIAC in base rates?
- a. If the response is in the affirmative, provide the amount of taxable CIAC income reflected in the base and forecasted test years.
 - b. If the response is in the negative, how do the Companies recover income taxes assessed on CIAC?
- A-50. Yes, the Company recovers income tax assessed on CIAC in base rates.
- a. KU has \$6,000,000 in both the base and forecasted test years for taxable CIAC income.
 - b. Not applicable.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 51

Responding Witness: Lonnie E. Bellar / Robert M. Conroy

- Q-51. Reference the Bellar testimony at p. 52, wherein he discusses the ongoing construction of a new Distribution Control Center located adjacent to the existing Transmission Control Center. State whether the Companies have obtained a CPCN for the construction of this facility.
- A-51. The Companies did not apply for a Certificate of Public Convenience and Necessity ("CPCN") for the Distribution Control Center. KRS 278.020(1) requires a utility to obtain a CPCN only for construction that is not "an ordinary extension of an existing system in the usual course of business."

Construction of the Distribution Control Center did not require a CPCN as it meets the regulatory definition of an extension in the ordinary course of business. .

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 52

Responding Witness: Lonnie E. Bellar / Robert M. Conroy

- Q-52. Reference the Bellar testimony at p. 53, wherein he discusses the construction of two new facilities for distribution operations. State whether the Companies intend to file a petition with the Commission to obtain a CPCN for the construction of these facilities.
- A-52. The South Service Center and the new facility in Elizabethtown are both in the planning stages. The Companies do not intend to apply for a Certificate of Public Convenience and Necessity ("CPCN") for either facility. KRS 278.020(1) requires a utility to obtain a CPCN only for construction that is not "an ordinary extension of an existing system in the usual course of business." The Public Service Commission's regulations define an extension in the ordinary course of business as an extension that does not create a wasteful duplication of plant, conflict with the existing certificates or service of other utilities operating in the same area or involve sufficient capital outlay to materially affect the existing financial condition of the utility or result in increased charges to the utility's customers. The cost of neither facility is expected to reach the threshold level to be considered a materially capital outlay. Moreover, the proposed facilities will either completely replace or augment an existing facility and will not be duplicating an existing facility.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 53

Responding Witness: Lonnie E. Bellar / Robert M. Conroy

Q-53. With regard to Exhibit LEB-6, "Smart Grid Investments" attached to the Bellar testimony, identify for which projects the Companies either have obtained, or plan to obtain a CPCN.

A-53. See the response to AG 1-48(b) and (c).

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 54

Responding Witness: Lonnie E. Bellar / Robert M. Conroy

- Q-54. Reference the Bellar testimony, p. 6, wherein he discusses the construction of a new power generation technical training center at Trimble Station, and of a new safety and technical training center at the LG&E East Operations Center.
- a. Was any thought given to combining the two new facilities into one? If not, why not?
 - b. Will the Companies be filing an application for a CPCN for one or both of these facilities? If not, explain why not.

A-54.

- a. The technical training center at Trimble County Station is located in a warehouse that was remodeled to suit the training needs of power plant personnel. The shops, work laboratories and tools are designed specifically to train individuals responsible for the maintenance and operations of a power plant although the classrooms are multi-purpose and can be used by various departments.

Likewise, the LG&E East Operations facilities is designed to train individuals responsible for electric and gas distribution operations. The training space for transformers, transformer banks, mock poles, plastic fusion and underground primary cable termination is unique to the work conducted by those individuals. Additionally, the location of the East Operation facility is located at one of the operations centers making it easier for those employees and others in the city and state to gather. Lastly, the Gas Department is a Louisville centered operation and it would not be practical to train the employees at a power plant in Trimble County.

- b. The Companies did not request a CPCN for the technical training center located at the Trimble County generating station, which was completed in 2017, or the training center at LG&E's East Operations center that is expected to be completed in early 2019.

KRS 278.020(1) requires a utility to obtain a CPCN only for construction that is not “an ordinary extension of an existing system in the usual course of business.” The Public Service Commission’s regulations define an extension in the ordinary course of business as an extension that does not create a wasteful duplication of plant, conflict with the existing certificates or service of other utilities operating in the same area or involve sufficient capital outlay to materially affect the existing financial condition of the utility or result in increased charges to the utility’s customers.

Both projects meet the regulatory definition of an extension in the ordinary course of business and do not require a CPCN. Neither conflicts with a CPCN or existing service of another utility. Neither is expected to duplicate existing facilities. The center at Trimble County involved the conversion of part of an existing warehouse at a cost of \$1.7 million, was specifically designed for the training of generation employees and is solely equipped for that purpose. It is intended to improve system reliability through better trained generation plant personnel. It does not materially affect the Companies’ financial condition. The East Operations Center will be used primarily for gas, electric, and transmission employees and is designed for outdoor instruction to reflect their work environment. Its expected capital cost at \$2.6 million is not considered material.

KENTUCKY UTILITIES COMPANY

Response to Attorney General's Initial Data Requests for Information Dated November 13, 2018

Case No. 2018-00294

Question No. 55

Responding Witness: Lonnie E. Bellar / Christopher M. Garrett

- Q-55. Refer to the direct testimony of Chris M. Garrett, page 40, wherein he discusses KU's proposal regarding Brown Units 1 and 2, stating that the proposal is "consistent with the regulatory treatment provided for the closure of Green River," and citing the "Settlement Agreement, Stipulation, and Recommendation" that provided for that regulatory treatment.
- a. Confirm that section 4.13 of that agreement specifies that it "shall not have any precedential value in this or any other jurisdiction."
 - b. Other than KU's assertion that the proposed amortization is period because of the treatment of Green River, what evidence specific to Brown Units 1 and 2 support an amortization of three years.
 - c. Which expert(s) in this matter provides support for the reasonableness of the deferral accounting requested for the Brown Units 1 and 2?
- A-55.
- a. Confirmed.
 - b. KU is amortizing the costs over a three year period consistent with the treatment for Green River. This is also consistent with the treatment of rate case expenses of similar magnitude.
 - c. Christopher M. Garrett and Lonnie E. Bellar. KU asserts that the request for deferral accounting treatment is reasonable as this cost meets the requirements for deferral per the Commission's guidance issued in Case No. 2016-00180, *Application of Kentucky Power Company for an Order Approving Accounting Practices to Establish Regulatory Assets and Liabilities Related to the Extraordinary Expenses Incurred by Kentucky Power Company in Connection with Two 2015 Major Storm Events*. The cost meets the fourth criteria for regulatory asset recognition discussed in the Commission's order on Pages 5 and 6. The inventory impairment is the result of the economic decision to retire Brown 1 and 2 resulting in savings to customers.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 56

Responding Witness:

Q-56. [THIS REQUEST INTENTIONALLY LEFT BLANK IN ORDER TO
MAINTAIN NUMBERING WITH CASE NO. 2018-00295]

A-56. Not applicable.

KENTUCKY UTILITIES COMPANY

**Response to Attorney General's Initial Data Requests for Information
Dated November 13, 2018**

Case No. 2018-00294

Question No. 57

Responding Witness:

Q-57. [THIS REQUEST INTENTIONALLY LEFT BLANK IN ORDER TO
MAINTAIN NUMBERING WITH CASE NO. 2018-00295]

A-57. Not applicable.