LG&E and KU
Potential Legal Merger of Utilities
Internal Study

Filed Pursuant to Paragraph 3 of Order entered April 4, 2018
In Case No. 2017-00415

August 8, 2018

Executive Summary

On October 17, 2017, PPL Corporation, PPL Subsidiary Holdings, LLC ("NEWCO1"), PPL Energy Holdings, LLC ("NEWCO2"), LG&E and KU Energy LLC ("LKE"), Louisville Gas and Electric Company ("LG&E"), and Kentucky Utilities Company ("KU") submitted a joint application requesting Kentucky Public Service Commission ("Commission") approval of a corporate reorganization.[1] On April 4, 2018, the Commission issued an order, approving the proposed corporate reorganization and requiring LG&E and KU (the "Companies") to develop an internal study "analyzing the costs and benefits associated with a potential merger of the two utilities."[2] In ordering the Companies to conduct the study, the Commission stated the study "should consider, among other things, the impact of the departure of the nine municipal utilities that are served by KU and whether the impact of the loss could be mitigated by a combined LG&E and KU system."[3]

The study was performed primarily by conducting interviews with each officer and independent departmental analyses. Many of the officers included other senior members of their respective departments in the discussions. The officers identified areas for further investigation in their organizations and additional interviews and discussions were conducted based on those recommendations. Cost and savings estimates were generally developed in house by the departments affected, but some external input was obtained where necessary.

Before proceeding with the study process, the Legal Merger Study Team developed the following assumptions:

- Consider the costs and benefits of a legal merger in every area of the Companies.
- Any legal merger would need to be approved by the Commission, the Tennessee Public Utility Commission ("TPUC"), and the Federal Energy Regulatory Commission ("FERC").[4]
- Capture impacts of a legal merger in a format that would allow them to be categorized into one of three areas:
    1. One-time costs involved in achieving the legal merger
    2. Ongoing costs above the current level that would result from the legal merger
    3. Ongoing savings that would result from the legal merger
- Any one-time costs involved in achieving the legal merger would be amortized over five years.

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[1] *In the Matter of: Joint Application of PPL Corporation, PPL Subsidiary Holdings, LLC, PPL Energy Holdings, LLC, LG&E and KU Energy LLC, Louisville Gas and Electric Company and Kentucky Utilities Company for Approval of an Indirect Change of Control of Louisville Gas and Electric Company and Kentucky Utilities Company,* Case No. 2017-00415.
[2] Case No. 2017-00415, Order, p. 8 (April 4, 2018).
[3] Case No. 2017-00415, Order, p. 8 (April 4, 2018). As described more fully in the September 20, 2018 Response filed in Case No. 2016-00370, Kentucky Utilities Company has six routine business and planning process underway to address the potential impact of the departure of the nine municipal utilities that are served by KU.
[4] Approval by the Virginia State Corporation Commission is not anticipated because the parent of LG&E and KU, LG&E and KU Energy LL and the ultimate parent of LG&E and KU, PPL Corporation will not change the potential legal merger of LG&E and KU.

- At the time of the potential legal merger or shortly thereafter, rates for all customers in any particular rate class would be harmonized regardless of whether the customer was a legacy LG&E or KU customer.
- To avoid the cost of tendering for existing First Mortgage Bonds ("FMB's"), the FMB's will remain in place. New bonds issued by the consolidated entity will be issued via a Collateralized Trust structure.
- Existing FMB's would require property accounting records to be maintained at LG&E and KU level post- legal merger.
- The existing services company, LG&E and KU Services Company, would remain in place.
- The existing brands would remain in place and be used in their current service territories for the merged company.
- A Private Letter Ruling would be required from the Internal Revenue Service to address the difference between how LG&E and KU currently treat Investment Tax Credits.
- Union contracts survive in their existing format.

Conclusion

The Companies have completed a thorough review of the impacts of a potential legal merger of LG&E and KU as ordered by the Commission in Case No. 2017-00415. The study confirmed that the two companies operate today as an integrated company in virtually all operational areas. This integrated approach has achieved significant savings for customers in many areas including joint dispatch, consolidated procurement of capital projects, fuel and consumable goods, joint call centers, and consolidated IT systems.

The potential legal merger of the two utilities would result in savings in the accounting, tax, treasury, and regulatory areas of approximately $2 million annually, but also result in an increase of ongoing costs in other areas. In addition, the legal merger would require significant one-time costs of approximately $23 million to achieve the legal merger. Finally, the potential legal merger creates winners and losers among the customers, because our analysis suggests there would be no net savings to bring all customer rates to the lowest rate offered by each company. KU customers would be adversely impacted in most cases while LG&E customers could benefit from the legal merger.

For these reasons, the Companies do not recommend proceeding with the legal merger of LG&E and KU.

Company Background

In May of 1997, the boards of directors of KU Energy Corporation, KU, LG&E Energy Corp. and LG&E approved a merger between KU Energy Corporation and LG&E Energy Corp.. In September of 1997, the Commission approved the merger of KU Energy Corporation with LG&E Energy Corp. and the resulting transfer of control of KU and LG&E. Under the merger, effective May 1, 1998, the holding company for LG&E acquired all of the outstanding shares of KU Energy Corporation, the then holding company for KU. After the merger, the KU holding company was dissolved and the LG&E holding company, now known as LG&E and KU Energy LLC, became the holding company for both LG&E and KU. The joint integration of the LG&E and KU systems, functions and operations began in June 1998.

On March 15, 2000, PowerGen plc ("PowerGen"), LG&E Energy Corp., LG&E, and KU filed a joint application with the Commission for approval of the transfer of ownership and control of LG&E and KU to PowerGen. On May 15, 2000 the Commission issued an order approving the transfer of ownership of LG&E and KU through the acquisition of ownership and control of LG&E Energy by PowerGen. The PowerGen acquisition was consummated on December 11, 2000. In connection with the transaction, PowerGen became a registered holding company under the '35 Act and LG&E Energy Corp., LG&E, and KU became part of PowerGen's registered holding company system. LG&E Energy Corp. and KU remained exempt holding companies under the '35 Act. To comply with the '35 Act, PowerGen and LG&E Energy Corp. formed LG&E Energy Services, Inc. to provide centralized administrative and corporate services to LG&E and KU.

On May 14, 2001, E.ON AG ("E.ON"), PowerGen, LG&E Energy Corp., LG&E, and KU filed a joint application for approval of the transfer of ownership and control of LG&E and KU to E.ON in accordance with the terms of an April 9, 2001 pre-conditional cash offer by E.ON to acquire all shares of PowerGen. On August 6, 2001 the Commission issued an order approving the transfer of ownership of LG&E and KU through the acquisition of ownership and control of PowerGen by E.ON. The E.ON acquisition was consummated on July 1, 2002.

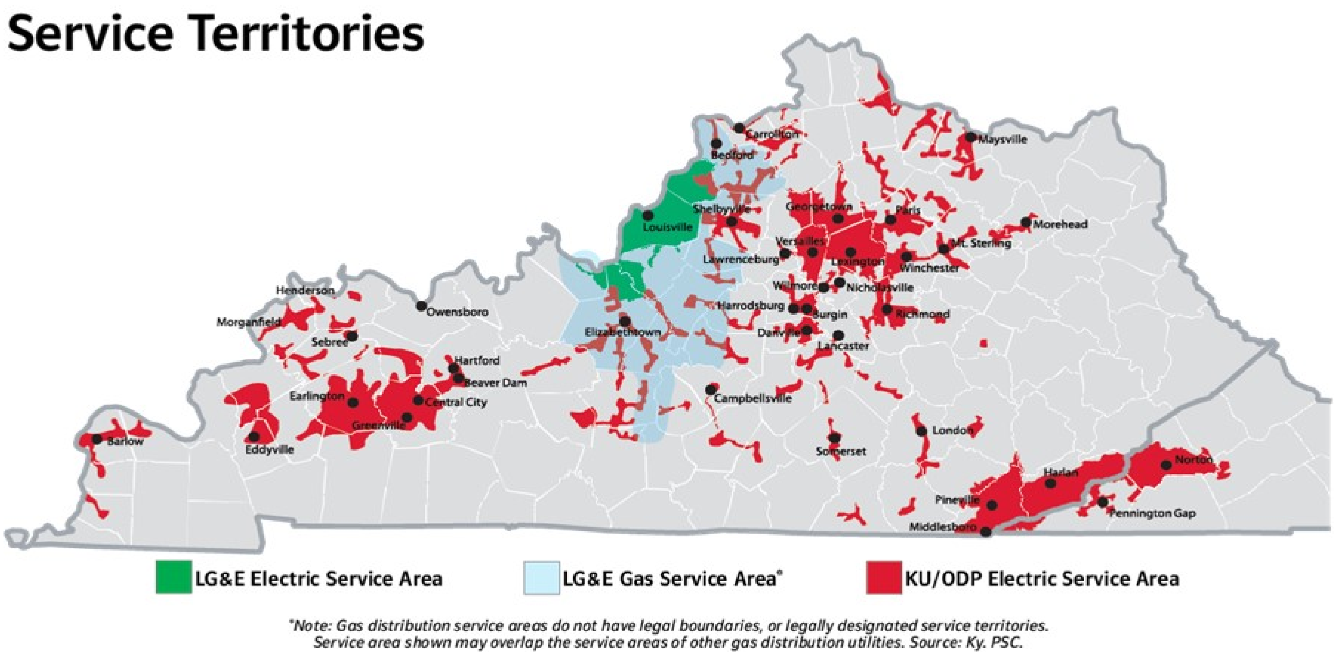
On May 28, 2010, PPL Corporation ("PPL"), E.ON, E.ON US Investments Corp., E.ON U.S. LLC, LG&E, and KU, filed a joint application for approval of the transfer of ownership and control of E.ON US and, by extension, LG&E and KU to PPL in accordance with the terms of an April 28, 2010 Purchase and Sale Agreement. On September 30, 2010, the Commission issued an order approving the transfer of ownership of LG&E and KU via the acquisition of E.ON US by PPL. The PPL acquisition was consummated on November 1, 2010.

Following the consummation of the LG&E and KU merger in 1998, and continuing through the next three change-of-control transactions, joint integration efforts of the LG&E and KU systems, functions and operations proceeded without interruption.

<u>Company Statistics</u>

LG&E and KU, are engaged in the regulated generation, transmission, distribution and sale of electricity in Kentucky and, in KU's case, Virginia and Tennessee. LG&E also engages in the distribution and sale of natural gas in Kentucky. LG&E provides electric service to approximately 411,000 customers in Louisville and adjacent areas in Kentucky, covering approximately 700 square miles in nine counties and provides natural gas service to approximately 326,000 customers in its electric service area and eight additional counties in Kentucky. KU provides electric service to approximately 525,000 customers in 77 counties in central, southeastern and western Kentucky, approximately 28,000 customers in five counties in southwestern Virginia, and three customers in

Tennessee, covering approximately 4,800 non-contiguous square miles. KU also sells wholesale electricity to 10 municipalities in Kentucky.[5] The general areas of retail service are shown below:



LG&E's electric service territory covers approximately 700 square miles. LG&E's electric distribution facilities include 97 substations (31 of which are shared with transmission), 3,892 circuit miles of overhead lines, and 2,553 miles of underground cable lines. KU's electric service territory covers approximately 4,800 noncontiguous square miles. KU's electric distribution facilities include 469 substations (60 of which are shared with transmission), 14,016 circuit miles of overhead lines, and approximately 2,484 miles of underground cable lines.

Five underground natural gas storage fields, with a current working natural gas capacity of approximately 15 billion cubic feet ("Bcf"), are used in providing natural gas service to LG&E's firm sales customers. By using natural gas storage facilities, LG&E avoids the costs typically associated with more expensive pipeline transportation capacity to serve peak winter heating loads. Natural gas is stored during the summer season for withdrawal during the following winter heating season. Without this storage capacity, LG&E would be required to purchase additional natural gas and pipeline transportation services during winter months when customer demand increases and the prices for natural gas supply and transportation services can be expected to be at their highest. At December 31, 2017, LG&E had 12 Bcf of natural gas stored underground with a carrying value of $43 million.

[5] KU had 12 municipal customers, with Cities of Benham and Paris already terminated, 8 more municipals departing, and two municipals remaining on the KU system. The departing municipals are the (1) Frankfort Electric and Water Plant Board and the Cities of (2) Barbourville, (3) Bardwell, (4) Berea, (5) Corbin, (6) Falmouth, (7) Madisonville, and (8) Providence, Kentucky. KU's other wholesale requirements customers are the Cities of (9) Bardstown and (10) Nicholasville, Kentucky. The City of (11) Benham, Kentucky terminated its service effective May 31, 2015 and (12) Paris, Kentucky terminated its serve effective April 30, 2017.

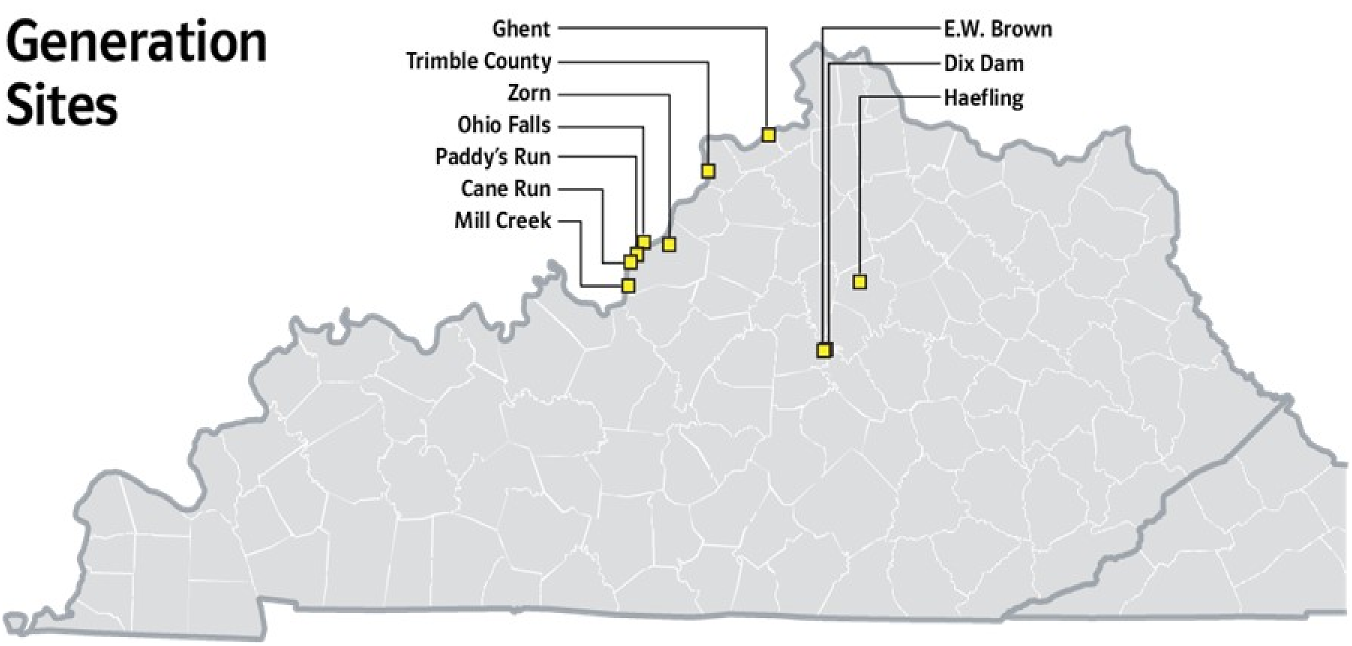
LG&E purchases natural gas supply transportation services from two pipelines. LG&E has contracts with one pipeline that are subject to termination by LG&E between 2020 and 2023. Total winter season capacity under these contracts is 184,900 MMBtu/day and summer season capacity is 60,000 MMBtu/day. With this same pipeline, LG&E also has another contract for pipeline capacity through 2026 in the amount of 60,000 MMBtu/day during both the winter and summer seasons. LG&E has a single contract with a second pipeline with a total capacity of 20,000 MMBtu/day during both the winter and summer seasons that expires in 2023.

The 2017 electric and gas operating revenues, in millions, by customer class is shown below.

	LG&E		KU		Combined	
	Revenue	% of Revenue	Revenue	% of Revenue	Revenue	% of Revenue
Commercial	$ 453	31	$ 401	23	$ 854	27
Industrial	187	13	416	24	603	19
Residential	637	44	622	36	1,259	40
Other (a)	123	8	157	9	280	9
Wholesale – municipal			112	6	112	4
Wholesale – other (b)	53	4	36	2	48	1
Total	$ 1,453	100	$ 1,744	100	$ 3,156	100

(a) Primarily includes revenues from street lighting and other public authorities
(b) Includes wholesale power and transmission revenues. Also includes intercompany power sales and transmission revenues, which are eliminated in the consolidation (Combined).

At December 31, 2017, LG&E and KU owned, controlled or had a minority ownership interest in generating capacity of 8,017 MW, of which 2,920 MW related to LG&E and 5,097 MW related to KU. The facilities located in Kentucky is shown below:



Since 1998 the Companies have not only jointly planned since their merger, but have also executed their plans and built joint generation facilities to further integrate their operations. The following chart shows the single and joint ownership of the Companies' generation assets:

		LKE	LG&E		KU	
Primary Fuel/Plant	**Total MW Capacity Summer**	**Ownership or Other Interest in MW**	**% Ownership or Other Interest**	**Ownership or Other Interest in MW**	**% Ownership or Other Interest**	**Ownership or Other Interest in MW**
Coal						
Ghent - Units 1- 4	1,919	1,919			100.00	1,919
Mill Creek - Units 1- 4	1,465	1,465	100.00	1,465		
E.W. Brown - Units 1-3	681	681			100.00	681
Trimble County - Unit 1 (a)	493	370	75.00	370		
Trimble County - Unit 2 (a)	732	549	14.25	104	60.75	445
OVEC - Clifty Creek (b)	1,164	95	5.63	66	2.50	29
OVEC - Kyger Creek (b)	956	78	5.63	54	2.50	24
	7,410	5,157		2,059		3,098
Natural Gas/Oil						
E.W. Brown Unit 5 (c)	130	130	53.00	69	47.00	61
E.W. Brown Units 6 - 7	292	292	38.00	111	62.00	181
E.W. Brown Units 8 - 11 (c)	484	484			100.00	484
Trimble County Units 5 - 6	318	318	29.00	92	71.00	226
Trimble County Units 7 - 10	636	636	37.00	235	63.00	401
Paddy's Run Units 11 - 12	35	35	100.00	35		
Paddy's Run Unit 13	147	147	53.00	78	47.00	69
Haefling - Units 1 - 2	24	24			100.00	24
Zorn Unit	14	14	100.00	14		
Cane Run Unit 7	662	662	22.00	146	78.00	516
Cane Run Unit 11	14	14	100.00	14		
	2,756	2,756		794		1,962
Hydro						
Ohio Falls - Units 1-8	64	64	100.00	64		
Dix Dam - Units 1-3	32	32			100.00	32
	96	96		64		32
Solar						
E.W. Brown Solar (d)	8	8	39.00	3	61.00	5
Total	10,270	8,017		2,920		5,097

(a) Trimble County Unit 1 and Trimble County Unit 2 are jointly owned with Illinois Municipal Electric Agency and Indiana Municipal Power Agency. Each owner is entitled to its proportionate share of the units' total output and funds its proportionate share of capital, fuel and other operating costs. See Note 12 to the Financial Statements for additional information.

(b) These units are owned by OVEC. LG&E and KU have a power purchase agreement that entitles LG&E and KU to their proportionate share of these units' total output and LG&E and KU fund their proportionate share of fuel and other operating costs, including debt service. Clifty Creek is located in Indiana and Kyger Creek is located in Ohio. See Note 13 to the Financial Statements for additional information.

(c) There is an inlet air cooling system attributable to these units. This inlet air cooling system is not jointly owned; however, it is used to increase production on the units to which it relates, resulting in an additional 10 MW of capacity for LG&E and an additional 88 MW of capacity for KU.

LG&E and KU jointly dispatch their generation units with the lowest cost generation used to serve their retail and native load municipal customers. When LG&E has excess generation capacity after serving its own retail customers and its generation cost is lower than that of KU, KU purchases electricity from LG&E. The same is true when KU has excess generation capacity. Pursuant to the Power Supply System Agreement filed with FERC the Companies engage in integrated system planning, efficiently use generating facilities, capture fuel and capital construction savings, and economically dispatch their units so that customers will receive the lowest energy cost available. The Commission, when approving the merger of the LG&E and KU holding companies noted that the integrated system planning "may be the single most important benefit of the merger."[6]

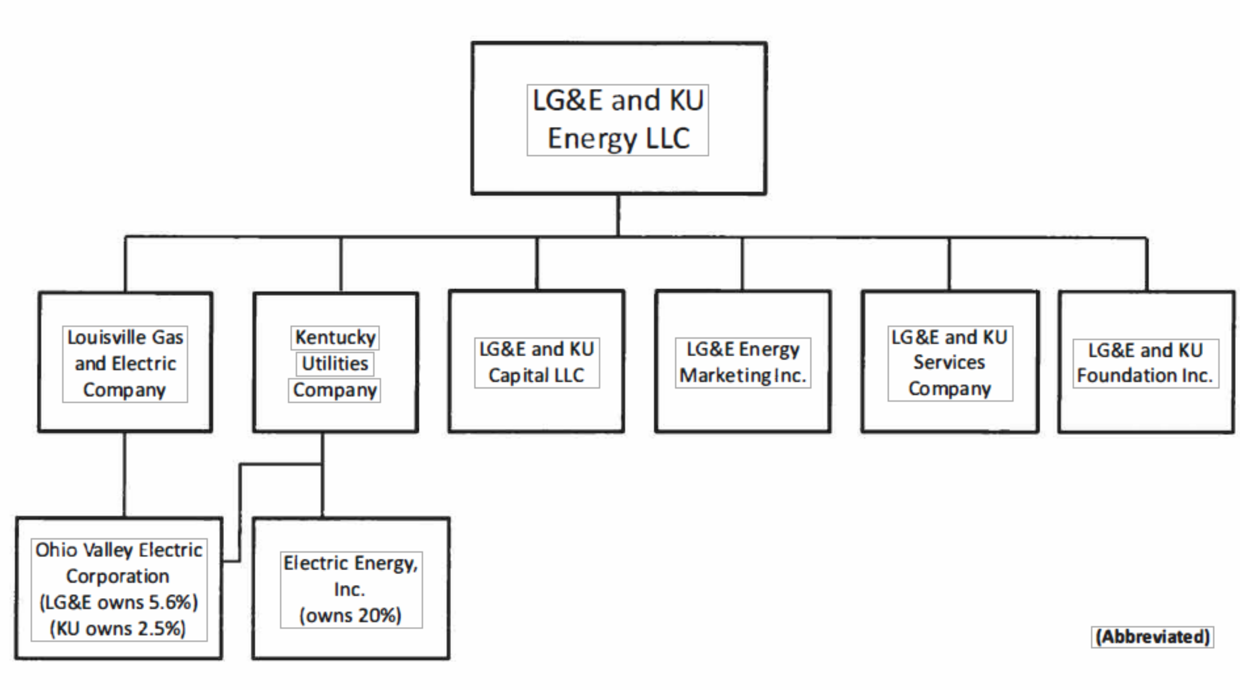
In 2016, LG&E and KU completed construction activities and placed into commercial operation a 10 MW solar generating facility at the E.W. Brown generating site. In 2015, KU retired two coal-fired units, with a combined capacity of 161 MW, at the Green River plant. Additionally, LG&E retired three coal-fired units with a combined capacity of 563 MW, at the Cane Run plant.

As a result of environmental requirements and energy efficiency measures, KU anticipates retiring two older coal-fired units at the E.W. Brown plant in 2019 with a combined summer rating capacity of 272 MW.

At December 31, 2017, the Companies transmission system included in the aggregate 187 substations (91 of which are shared with the distribution system) with a total capacity of 14 million kVA and 4,735 pole miles of lines. The transmission system has been operated as a single combined system for 20 years under the Transmission Coordination Agreement filed with FERC. The Companies jointly operate and manage their transmission systems subject to a common Independent Transmission Organization known as TransServ International, Inc., which performs the Independent Transmission Organization functions required by FERC for both Companies. Tennessee Valley Authority ("TVA") serves as the FERC-required reliability coordinator for LG&E and KU.

[6] Case No. 97-300, Order at 21 (Ky. PSC Sept. 12, 1997).

LG&E and KU Energy LLC's current organization structure, presented in abbreviated manner is shown below:



- KU - Kentucky Utilities Company, a public utility subsidiary of LKE engaged in the regulated generation, transmission, distribution and sale of electricity, primarily in Kentucky.

- LG&E - Louisville Gas and Electric Company, a public utility subsidiary of LKE engaged in the regulated generation, transmission, distribution and sale of electricity and the distribution and sale of natural gas in Kentucky.

- LKC – LG&E and KU Capital LLC, a subsidiary of LKE which is a holding company for all non-utility activities of LKE except LEM. These non-utility activities are dormant at this time.

- LEM – LG&E Energy Marketing, Inc., a non-utility subsidiary of LKE created to market and trade electric power and natural gas. It is currently inactive.

- LKE - LG&E and KU Energy LLC, a subsidiary of PPL and the parent holding company of LG&E, KU and other subsidiaries.

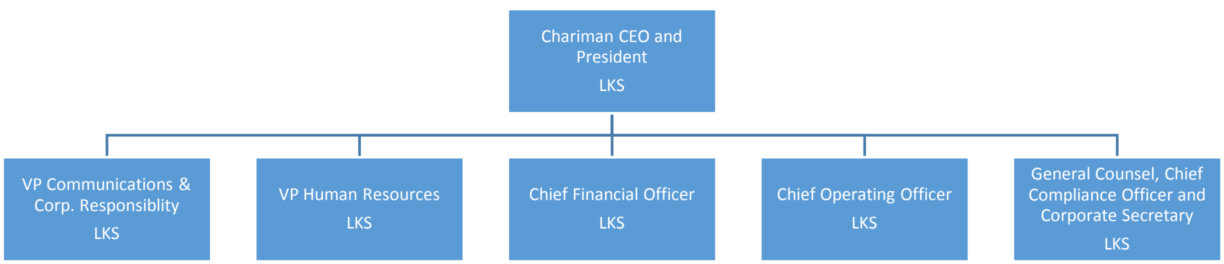
- LKS - LG&E and KU Services Company, a subsidiary of LKE that provides goods and administrative, technical, management, engineering, legal, accounting, and other services to affiliates, primarily with respect to LG&E and KU, as well as LKE.

- LG&E and KU Foundation Inc., a philanthropic arm for charitable giving aims to proactively contribute to the communities by supporting the focus areas of Education, Diversity, Environmental, and Health and Human Services initiatives.

KU and LG&E each have outstanding debt securities. All long-term debt issued by each company is secured by a first mortgage lien on the fixed assets located in Kentucky of the respective utility. In addition, each company has utilized tax-exempt debt to reduce the financing costs for customers. The tax-exempt bonds are actually issued by county governments with the proceeds loaned to the utility. The loan from the county to the utility is also secured by first mortgage bonds. This financing structure is discussed in more detail later as it impacts how future bonds could be issued following a legal merger of the utilities.

Management Structure

The management structure at LKE has transformed since the 1998 merger of the LG&E and KU holding companies. The structure is now functionally based with the two utilities generally operating as one entity in nearly all instances. Services costs are fully segregated, and fairly and equitably allocated among the affiliate companies. Below is the organization chart depicting the direct reports to the Chairman CEO and President. The executive management team of LKS also serve as the officers of LG&E, KU, and LKE. There are no additional officers created by the legal existence of LG&E and KU.



Savings Realized Since 1998

Functions for LG&E and KU have been consolidated over time since the 1998 merger of the LG&E and KU holding companies. These functions operate with a focus on geographic needs instead of legal structure. The integration has resulted in significant cost savings for customers. Some examples of the cost savings are detailed below:

- LG&E and KU shared a portion of the non-fuel savings resulting from the LG&E and KU holding company merger via the Merger Surcredit mechanism, which provided LG&E customers with $145.7 million and KU customers with $143.4 million over a 10-year period ending February 2009. Subsequent savings initiatives labeled “One Utility” and “Value Delivery Team” identified incremental savings. LG&E and KU shared savings with customers via the “VDT Surcredit” mechanism which provided LG&E customers with approximately $47 million and KU customers with approximately $18 million over an approximately 8 year period ending February 2009. Total savings from all of these initiatives were rolled into the base rates of KU and LG&E in Case Nos. 2008-00251 and 2008-00252 and have been reflected in the base rates of LG&E and KU since that time.

- Another of the most significant savings realized following the 1998 merger has been fuel savings resulting from the joint dispatching of the Companies' generation assets. The Companies executed the FERC-filed Power Supply System Agreement to allow for all power supply resources of the two utilities to be economically dispatched to ensure that customers receive the lowest cost energy available. The After-the-Fact-Billing system ("AFB") calculates the cost of each dispatched resource and allocates the highest cost resources to off-system sales. The lower costs resources are designated to serve native load customers. At the end of each month, AFB determines the amount of electricity sold by LG&E to KU and by KU to LG&E. There is a monthly settlement of these intercompany transactions. The savings from joint dispatch are captured through the Fuel Adjustment Clause for LG&E and KU.

- Construction costs at the generation plants have also been jointly managed. All generation additions since 1998 have been jointly owned by the Companies. The ownership ratios have been established based on expected needs of the particular type of capacity being added. In addition, significant savings were realized in the installation of pollution control equipment across the fleet. For example, common designs for bag houses and SCR's were used across the fleet, and contracts were structured across multiple sites to minimize costs. Fleet wide maintenance procedures have been established, and many fleet wide maintenance contracts are utilized.

- The transmission system is also operated and planned on an integrated basis using the FERC-filed Transmission Coordination Agreement. The transmission system has been operated as a single combined system for 20 years under the Transmission Coordination Agreement filed with FERC.

- The distribution function has adopted common design and standardized equipment across the system, where possible. Using common design and equipment reduces inventory requirements and allows for more efficient deployment of crews. The management of this area is designed from a geographic view. The crews of both Companies and their supervisors become interchangeable for storm restoration work. One of the final steps of formally consolidating this organization will be realized with the completion of the consolidated distribution control center in 2019.

- In Customer Service, all four customer contact centers are integrated and accept calls from either company's customers. The tariff structures and terms and conditions for service have been harmonized to allow the customer service representatives to respond effectively to customer questions and achieve operational efficiencies.

- IT systems are the same for both Companies across all functional areas. This consolidation has facilitated many of the other operational efficiencies. For example, a single work management system allows distribution crews to be dispatched to either KU or LG&E sites if proximity allows. A single outage system allows for the most efficient restoration process. A single general ledger system allows one accounting group to perform entries for both Companies. One customer care system has allowed LG&E and KU to operate virtual call centers and improve the customer experience for LG&E and KU.

These and other efforts undertaken since 1998 have significantly benefitted customers. KU and LG&E have some of the lowest O&M costs in the country. Management annually monitors cost trends by benchmarking costs compared to other vertically integrated utilities using FERC Form 1 data. The most current benchmarking study, completed in July 2018, shows that LKE's total non-fuel O&M cost per MWh is the sixth lowest out of 41 such entities in the nation at $20.17/MWh. The industry average is $23.90/MWh. Using a five-year average, LKE is in the top quartile with an average cost of $19.34/MWh compared to an industry average of $23.27.

In sum, the organizational structure of the Companies is designed by functional area, not legal entity structure. Each officer has responsibility for managing his/her functional area across both companies. Further down in the organization charts, some groups are managed by geographic areas. For example, the electric distribution and customer services organizations have staff located throughout the state to allow close proximity to physical assets and customers to provide improved customer service. However, there is common management of those functions across LG&E and KU. These organization structures have been designed based on functional areas for several years with most consolidations having occurred as part of the 1998 merger of the LG&E and KU holding companies.

Results of the Merger Study

Management Organization

As part of the study, each officer was asked to reevaluate their existing structure to determine if a legal merger would result in a more efficient organizational design. Without exception, each officer upon review determined that the existing design was created to operate as if the Companies were a single entity, and a legal merger would not cause any changes in the structure of the organization.

Costs to Achieve

Merging the two utilities into a single legal entity would require certain one-time costs that would be incurred at the time of the legal merger to allow the combined entity to operate effectively following the legal merger. These include costs associated with seeking regulatory approval to merge, amending contracts, where necessary, to allow for the merged entity to be the contractual party, changing the structure for future use of FMB's, revising IT systems to reflect the elimination of one of the two legal entities, external audit costs associated with these revised systems, and other accounting costs. A summary of those costs is listed below:

Cost Area	How Costs Were Estimated	Cost
Regulatory Approval from KPSC, FERC, and TPUC	Estimate based on prior merger cases	$0.9 million
Rate Case Filing to Determine Appropriate Rates Following Legal Merger	Estimate based on prior rate cases	$4.5 million
Revisions to General Services Agreement	Internal estimates	$0.07 million
Creation of New Trust Indenture Structure	Estimate from external counsel experienced with these structures	$0.33 million
Revision of Existing IT Systems	Internal estimate based on prior system upgrades	$17.1 million
Audit Work to Check Systems Modifications	Estimate from external auditor	$0.7 million
Investment Tax Credit – IRS Private Letter Ruling	Internal estimates	$0.15 million
Consulting on Tax Structure	Internal estimates	$0.1 million
	Total	$23.85 million

<u>Regulatory Approvals</u> – The Commission, the TPUC, and FERC would each need to approve the legal merger of the utilities. The Companies have obtained regulatory approvals for at least three changes of control since 1998. The filings associated with this legal merger would be somewhat different because the utilities are merging rather than the holding companies, but the Companies expect that the overall costs associated with preparing the filing, responding to intervenor interrogatories, and conducting hearings would be similar to prior cases. The cost estimate of $0.9 million includes $0.8 million related to obtaining approvals from state regulators and $0.1 million for FERC approvals and is based on the experience gained in prior cases. The Companies also assume that if a legal merger did occur, a rate case would be required to allocate the costs of the combined entity to its customers. The $4.5 million estimate is based on the costs of recent rate cases of the Companies. There is a risk that FERC and VSCC could possibly deny approval of higher rates as a result of a legal merger.

<u>Revisions to Contract Templates</u> – The Companies currently have a common contract template based on existing legal structures. The procurement team has determined the contract would need to be revised somewhat to reflect the new legal structure. The costs associated with such a revision are expected to be minimal at approximately $12,000. Existing contracts may or may not allow for the legal merger of the two utilities which could require negotiations with the existing counterparties. Costs associated with those renegotiations are estimated to be about $58,000. There is a risk that contract negotiations as a result of the legal merger could lead to increased costs.

<u>Creation of a New First Mortgage Bond Indenture Structure</u> –The Companies currently have two types of FMB's – those issued in the taxable market and those issued as collateral for tax-exempt bonds issued by counties in which the Companies have generation assets. The existing taxable FMB's issued by KU and LG&E have maturities ranging from 2020 to 2045. Bonds issued in the

taxable market do not contain call provisions except for periods of six months or less before the maturity date. At KU, $1.25 billion of the $2 billion in outstanding taxable debt has a maturity date of 2040 or later. Similarly, at LG&E $785 million of the $1.085 billion of taxable debt has maturity dates of 2040 and beyond. The taxable bonds of each utility are secured by a first mortgage lien on generally all fixed assets located in Kentucky of each utility. The bonds have been issued publicly to a wide range of investors and can be purchased in the secondary markets.

The FMB's issued as collateral for tax-exempt bonds issued by counties are subject to the same trust indenture as the taxable bonds and the lien applies to the same assets as those issued in the taxable market. The Company agrees to pay all debt service on the county's bonds via a loan agreement. Since the Company is not the issuer of the bond, it provides FMB's to the tax-exempt bond trustee as collateral for the payments due under the loan agreement. The FMB's mature on the same date and bear interest at the same rate as the bonds issued by the county. However, the principal and interest on the FMB's are not payable other than upon an event of default under the loan agreement. KU has approximately $350 million of tax-exempt bonds outstanding while LG&E has approximately $539 million outstanding. These bonds are held by a variety of investors and generally have shorter periods until they will be put back to the Company or can be called by the Company.

Calling the taxable bonds is not permitted pursuant to their terms, but a tender offer could be done. This entails contacting each investor with an offer to buy their bonds – typically at a premium above the existing market price. As a result of the continuing decline of the 30 year treasury bond interest rate and continued tight credit spreads, the existing bonds are trading at a premium. As of the end of April 2018, the fair market value of the KU bonds is estimated to be $2.15 billion (a premium of $150 million above face amount) while LG&E's are estimated to be $1.15 billion (a premium of $65 million above face amount). The tender offer price would have to be at a price above the market price in order to entice the bondholder to sell, but the bondholders are not required to sell unless the Companies offer the "make whole" redemption price. A rough estimate of the "make whole" premium is almost $600 million. The significant additional premium above the current market price eliminates the tender offer as a viable alternative.

There is no provision in the existing indentures that allows for the Companies to merge and have a lien on the fixed assets of the merged entity to secure the debt that exists today under the two indentures. The indenture provides for the KU bonds to be covered by the fixed assets of KU and any after-acquired assets related to the existing assets. For example, if a sub-station currently owned by KU is expanded following the proposed legal merger, that expansion would secure the existing KU bonds but not the existing LG&E bonds. It is possible, though uncommon, for bonds to be issued following the legal merger under the existing separate indentures. Regardless, the indentures require that accounting records be maintained for legacy LG&E assets separately from the legacy KU assets.

The more common indenture structure in similar situations is to create a new Collateral Trust Mortgage Indenture to be used by the merged entity to issue new bonds following the legal merger. The Collateral Trust Mortgage Bonds would have a second lien on the assets of the successor company, and FMB's under the current indentures would be issued as collateral for the Collateral Trust Mortgage Bonds to avoid having the Collateral Trust Bonds being subordinated to the

FMB's. The issuance of FMB's as collateral is comparable to the structure used today in the tax-exempt bond transactions wherein FMB's are issued as collateral to the trustee of the tax-exempt bonds issued by a county. Once all FMB's outstanding at the time of a legal merger are retired (currently LG&E and KU both have FMB's outstanding through 2045), the second lien on the Collateral Trust Mortgage Bonds would become a first priority lien.

There would be legal costs with establishing this new structure. The law firm that has assisted the Companies in past FMB transactions has experience with Collateral Trust Mortgage Bonds. An estimate of the costs associated with creating the new structure was received from the law firm. The estimate is $330,000.

<u>IT System Modifications</u> – As noted above, integration of the IT systems for KU and LG&E has occurred since the 1998 merger. Even though common IT platforms are used for all areas, the information technology systems were designed based on the existing legal structure. Significant modifications will be required to capture the information of a consolidated entity. The IT department estimates the cost of one-time changes will be $17.1 million. The vast majority of the costs ($13 million) are associated with the following systems of the Companies': Oracle, PowerPlan and Customer Care System (CCS). The estimates were developed internally based on past experience with system upgrades, and the Companies acknowledge that actual costs could vary significantly from this estimate. In addition to the one-time costs, there is a high degree of risk associated with modifying several systems at or near the same time. Given the complexity and enormity of the task, there is concern around being able to effectively and efficiently operate immediately following such a major IT change. The magnitude of the project would also result in delays to system upgrades to meet internal and external customer needs.

Conversion of the main accounting systems, Oracle and PowerPlan, is the single largest system cost at $12 million. In order to be able to report historical financial data on a comparable basis with the going forward results, a new company would be created within the financial systems. New setup or redesign of security and user roles would need to be developed as part of creating the new company. All of the historical data would be converted into the new company and new interfaces with other systems would need to be written as Oracle is the hub for financial data. Testing the data conversion and the new interfaces would be a critical task. The $12 million estimate is broken down as follow: $0.5 million for analysis of the systems to determine the optimal solution, $2 million to design the consolidated system, $5 million to build and develop the system, $3 million for integration testing, $1 million for user acceptance testing, and $0.5 million for new hardware.

The CCS system is the primary tool used for interaction with customers, and modification is expected to cost approximately $1 million. This estimate assumes that KU, LG&E and Old Dominion Power would be maintained in the system as separate companies. To fully consolidate the companies within CCS would be cost prohibitive at approximately $50 million due to many of the same data conversion and testing issues cited above for the financial systems. It was assumed that all existing customer data would need to be maintained and tied to an existing customer account. CCS is the hub for all customer systems, is heavily integrated into the operational systems, and generates the customer account number and the location record for each account and service location. Numerous other systems use these identifiers including all the ancillary customer systems, the accounting systems, the work management systems, and the outage systems. To avoid issues in these downstream systems, and avoid negatively impacting customers, the assumption was made to maintain the separate companies in CCS.

The estimates totaling $17.1 million include only the largest systems utilized by the Companies. There are approximately 300 total applications in use at the Companies, but not all were individually evaluated as part of this estimate. However, a number of them would be addressed as part of the changes with the major systems and the remainder would not have major changes anticipated as a result of a legal merger of the utilities.

One-Time Accounting and Tax Costs – Several accounting issues must be resolved as part of a legal merger. Following a consolidation and modification of the IT systems described above, the external auditors would need to complete a review of the modified systems to ensure that appropriate controls exist within the financial systems and that the systems properly capture the data input. Discussions were held with the Companies' external auditor to estimate the fee associated with this work. The firm estimated the cost would be $700,000.

As noted on pages 15-16 of Mr. Blake's testimony filed on March 13, 2018 in Case No. 2017-00415, KU and LG&E have made different elections dating back to 1972 with respect to investment tax credits. The Companies have not been able to identify a precedent where companies with differing elections have merged. The Companies' auditors were not able to find a similar situation either. The most prudent action for determining how this transaction would impact the differing elections is to pursue a private letter ruling from the Internal Revenue Service. The Companies estimate the cost of pursuing the private letter ruling is $150,000. There are a few less significant differences in tax elections that the Companies have made over the years. An estimate of $100,000 for consulting costs to resolve these differences most favorably has also been included in the one-time costs.

Ongoing Savings and Costs

The goal of a proposed legal merger of KU and LG&E, should it proceed, is to lower costs for customers. The study focused on identifying opportunities within each area where savings could be realized following a legal merger of the Companies. The study also inquired about whether there were any areas where costs might increase due the legal merger. The savings identified are summarized in the table below:

Area	How Savings Were Estimated	Savings
Accounting and Tax	Internal Estimates and Auditor Discussions	Labor - $0.73 million/year Non-labor - $0.47 million/year
Bank and Rating Agency Fees	Internal Estimates	Non-labor - $0.28 million/year
Regulatory Department	Internal Estimates	Labor - $0.12 million/year Non-labor - $0.12 million/year
Legal Fees	Internal Estimates	Non-labor - $0.12 million/year
Customer Service and Marketing	Internal Estimates	Non-labor - $0.09 million/year
Operating Services	Internal Estimates	Non-labor - $0.05 million/year
Actuarial Fees	Estimate From Actuary	Non-labor - $0.02 million/year
	Total	$2.0 million/year

Accounting and Tax Cost Reductions – Perhaps the most significant changes resulting from the legal merger of the two utilities would come in the accounting and tax areas. Currently, accounting and tax spend time preparing financial statements, tax filings and regulatory reports for the two separate legal entities. Following the potential legal merger the financial statements, tax filings, and regulatory reporting costs would be reduced through consolidation although not cut in half due to automation efforts already in place. Internal estimates indicate that labor savings of approximately $730,000 annually could be realized, and associated training costs would be reduced by $14,000 annually. This is based on estimates which include the elimination of six full time equivalent (FTE) accounting and tax staff positions. In addition, one manager's position would also be eliminated. The training cost savings are based on each of these seven positions incurring $2,000 annually for training. External audit fees would also be less with the combination of KU's and LG&E's financial statements. Based on discussions with the auditors, the savings would be approximately $450,000 annually. One software license could also be discontinued to realize savings of $10,000 annually.

Bank and Rating Agency Fee Reductions – The Companies maintain separate credit facilities, bank accounts, and are evaluated separately by the credit rating agencies. A legal merger of the Companies would allow some of the costs associated with these arrangements to be reduced.

KU maintains a $400 million revolving line of credit and LG&E maintains a $500 million line of credit. Each Company has a commercial paper program totaling $350 million. The commercial paper programs are sized based on the desire to issue bonds that are "index eligible" which currently requires a minimum level of $300 million. Investment fund managers are typically evaluated against a benchmark index, and have a strong preference to purchase bonds that are included in the index. Investors also prefer larger bonds due to the increased liquidity in the secondary markets for such larger bonds. The improved demand for these bonds typically improves the interest rate for the Company and its customers. The Companies issue commercial paper as needs arise for capital projects and working capital needs. Once the commercial paper balances approach $300 million, a bond is issued. The rating agencies require that the commercial paper balances be supported dollar-for-dollar with a revolving line of credit. The Companies also utilize the revolving lines of credit for other purposes including supporting tax-exempt bonds that can be put back to the Companies. The Companies believe that a combined entity could reduce its revolving lines of credit by $200 million as the combined company would only need a commercial paper program of $500 million rather than the $700 million in place today. This results in a reduction totaling $200,000 in commitment fees paid to banks.

The elimination of one of the commercial paper programs would also reduce associated rating agency and trustee fees by another $63,000 annually. Most bank account fees are based on the volume of transactions rather than the number of accounts. However, there would be some savings associated with eliminating bank accounts and savings associated with avoiding the agency fee paid under the revolving lines of credit. These savings total approximately $17,000 annually.

Regulatory Department Savings – The legal merger of the two utilities is expected to result in fewer regulatory filings with the Commission, although limited as many filings are already made on a combined basis. Currently, both Companies file cases related to the same or similar matters. Merging the two Companies will eliminate the duplicative filings. Since the 1998 merger of the KU and LG&E holding companies, tariff structures have been harmonized so that the rate is the only difference, and much of the work in finalizing mechanism filings has been automated.

Internal estimates suggest that labor costs could be reduced by $120,000 annually following a legal merger. Another $120,000 of annual non-labor savings is also anticipated. The non-labor savings result from reduced costs of publishing notices in the Courier Journal for one company, and from reduced consulting costs associated with separate cost of service studies.

Legal Fee Reductions – The consolidation of the two Companies would yield savings in the form of reduced fees paid to external counsel. The primary area where fees could be expected to decline is in the regulatory area. Although many regulatory filings are done on a combined basis currently there continue to be some separate filings and some regulatory analysis must currently be done separately for the two companies. Most other areas are contracting at a single entity or using LKS, and all SEC filings are done on a consolidated basis. There would be no savings for these areas. The legal department, based on input from external counsel, provided an estimate of annual legal fee savings not expected to exceed $125,000 for the regulatory area.

Customer Service and Marketing Cost Reductions – There will be some savings in the customer service and marketing areas resulting from the proposed legal merger. Marketing research is done regularly to ensure the Companies are providing quality service to customers, and to identify areas for improvement. The studies are done across the service territories for each utility. A legal merger would reduce the costs associated with publishing multiple reports by an estimated $40,000 annually. The Companies also are required to be listed in phone books to allow customers to contact them easily. Combining the utilities would eliminate one of the listings and result in annual savings of $53,000.

Approximately 8,600 customers receive electric service from KU and gas service from LG&E. These customers receive two invoices for the services and the Companies must process two separate payments each month. Consolidating these invoices into a single item is estimated to save approximately $53,000 annually.

Actuarial Fee Savings – Actuarial costs would decline by approximately $20,000 annually if a legal merger occurred. Currently, the actuaries prepare estimates and actual costs based on historical intra-company cost allocations. A legal merger would avoid cross-charging between the utilities, and reduce the actuaries' time resulting in savings. This estimate was provided by the current actuarial firm.

Some areas expect to see higher ongoing costs following a legal merger.

Area	**How Costs Were Estimated**	**Costs**
Contract Reopeners Due to Amending Existing Contracts	Internal estimates	$0.8 million annually
Bond Indenture Costs	Estimate From Outside Counsel	$0.01 million annually

Contract Reopening Costs - Costs associated with reopening the contracts where a merger is not permitted is difficult to quantify. It is anticipated that some vendors where market prices have moved higher since finalizing the contract would hold out for a price adjustment in exchange for allowing the contract to continue with the merged entity. The procurement team has evaluated contracts where a merger could allow the counterparty to reopen the contract provisions. A sub-set of those contracts has pricing below current market pricing. Procurement has estimated a range of .10% to .50% of total contract value could be at risk. The mid-point of the range equates to an annual cost increase of approximately $800,000.

Bond Indenture Costs – The use of the Collateralized Trust Mortgage structure described above is slightly more complicated than the FMB structure used currently. The Companies' outside counsel has estimated that each bond issuance will require additional legal fees of $10,000 - $15,000. In general, at least one bond is expected to be issued per year by the consolidated company resulting in $10,000 of incremental costs annually.

Jurisdictional Issues

As noted above, the study assumes approvals of a legal merger of the two utilities will be required from FERC and the TPUC. Although the VSCC does not need to approve a legal merger of LG&E and KU, scrutiny and resistance is expected to including any additional costs as a result of the legal merger to the Virginia cost of service. Based on prior experiences, the Companies expect all regulatory agencies to be particularly interested in ensuring no increases in rates occur as a result of the legal merger and proper cost allocation to customers under their jurisdiction continues. For example, the VSCC placed certain conditions on its approval of the 1998 merger of the holding companies of LG&E and KU in case number PUA970041. Condition No. 14 states, "[W]ithout prior approval, KU/ODP agrees not to include in Virginia retail rates any costs attributable to LG&E's regulatory assets or potential stranded costs." It is possible that rate reductions will be demanded by these regulators in exchange for approval of the legal merger. It is reasonable to expect the VSCC to possibly deny recovery by KU of any LG&E costs attributed to KU/ODP as result of the legal merger. Any savings shared with other jurisdictions will reduce the benefits obtained by Kentucky retail customers.

Affiliate transactions have been a focus of all regulators in the past and remain a long-standing area of interest and concern. Under the existing structure, the majority of affiliate transactions and cost allocations involve goods and services provided by LKS to the Companies. LKS is a "Service Company" formed as required when the Companies became subject to the Public Utilities Holding Company Act of 1935 (35 Act) as a result of Powergen's acquisition of LG&E Energy Corp. in 2000. The 35 Act was repealed in 2006 and replaced with the Public Utility Holding Act of 2005 (05 Act). The 05 Act does not expressly require the use of a Service Company, but it does mandate that Services Companies use the Uniform System of Accounts and requires that most transactions between a Services Company and an affiliated utility be conducted at cost. Contracts between Services Companies and affiliated utilities also are subject to regulatory review and approval in some instances. FERC and the VSCC currently are comfortable with the allocation methodologies used by KU and LG&E, and the use of LKS provides these commissions with the transparency they desire under the existing organization structure. All regulators are likely to be reluctant to give up the Services Company structure as it is the preferred method of facilitating their regulatory oversight over affiliate transactions.

If the regulators would approve the elimination of the Services Company at some point in the future, the Companies estimate ongoing cost reductions of approximately $300,000. However, the elimination of the Service Company could result in other costs increasing – particularly within IT since most software licenses are held in the name of LKS. Prior experience suggests that software vendors often require a new license to be purchased when the users name changes through a merger or other corporate reorganization.

Impact on Customer Rates

One of the assumptions of the study was that following any legal merger all customers within each rate class of the merged entity would be on the same tariff schedules regardless of whether they had been a legacy LG&E or KU customer. There are two ways to achieve such an outcome. First, the schedules that currently have higher rates can be reduced to match the lower rates of the other entity. This strategy reduces the overall revenue of the combined entity. The question becomes whether the savings associated with the legal merger are sufficient enough to offset the rate reductions which would allow the combined entity to earn a fair, just and reasonable rate of return. As noted in the direct testimony filed by Kent Blake in Case No. 2017-00415, given current rates, the cost reductions would need to total approximately $63 million to offset the required rate reductions to maintain the lowest rates available today. The table below summarizes the calculations:

Maintain lowest rate between Companies

Rate Class	Savings Required to Achieve		KU (% Impact)	LG&E (% Impact)
Residential Rate RS (inclusive of VFD)	KU Lowest	$ (28,544,050)	0.00%	-6.07%
Residential Time-of-Day Service Rate RTOD	KU Lowest	$ (6,853)	0.00%	-11.57%
General Service Rate GS	LG&E Lowest	$ (9,301,278)	-3.77%	0.00%
All Electric School Rate AES **(KU Only)**		$ -	0.00%	0.00%
Power Service Rates PSS and PSP	KU Lowest	$ (3,818,861)	0.00%	-2.13%
Time-of-Day Service Rates TODS and TODP	KU Lowest	$ (18,223,895)	0.00%	-8.60%
Retail Transmission Service Rate RTS	KU Lowest	$ (1,526,059)	0.00%	-2.11%
Fluctuating Load Service Rate FLS		$ -	0.00%	0.00%
Special Contracts **(LG&E Only)**		$ -	0.00%	0.00%
Lighting Energy Rate LE	LG&E Lowest	$ (2,537)	-7.15%	0.00%
Traffic Energy Rate TE	LG&E Lowest	$ (25,765)	-14.51%	0.00%
Lighting Service and Restricted Lighting Service Rates LS and RLS	LG&E Lowest	$ (1,847,058)	-6.01%	0.00%
	Total =	***$ (63,296,357)***		

(1) Based on Forecasted final 6/29 Orders for 2016 Rate Case Test Year Billings - July 1, 2018 - June 30 2018

Clearly, the study did not identify cost reductions that are anywhere near the level required to avoid having rates increase for some customers.

The second way to achieve harmonized rates is to have some rates increase while others decline until the rates are consistent and yield the required revenue. The Companies have calculated where rates would need to be to achieve this outcome and the percentage change in rates for each class of customer from current rates. For example, KU residential customer rates would need to rise by 2.63% while LG&E residential customers would see a 3.60% decline. Those customers on time-of-day services rates at KU would see an average increase of 3.14% while LG&E customers in this class would see a rate decline of 5.72%. The changes for all customer classes are detailed in the table below:

Maintain Total Rev Requirement for Weighted Average Rates

Rate Class	Current Avg KU Bill ($/month)	KU Rev Req Inc/(Dec)	Avg KU Customer Impact ($/month)	KU (% Impact)	Current Avg LGE Bill ($/month)	LG&E Rev Req Inc/(Dec)	Avg LG&E Customer Impact ($/month)	LG&E (% Impact)
Residential Rate RS (inclusive of VFD)	$ 124.47	$ 16,928,563	$ 3.28	2.63%	$ 107.55	$ (16,928,563)	$ (3.87)	-3.60%
Residential Time-of-Day Service Rate RTOD	$ 108.42	$ 2,571	$ 8.86	8.18%	$ 99.38	$ (2,571)	$ (4.31)	-4.34%
General Service Rate GS	$ 246.80	$ (3,994,441)	$ (3.99)	-1.62%	$ 329.30	$ 3,994,441	$ 7.36	2.23%
All Electric School Rate AES **(KU Only)**	$ 2,111.64	$ -	$ -	0.00%	$ -		$ -	0.00%
Power Service Rates PSS and PSP	$ 3,684.87	$ 2,038,122	$ 37.38	1.01%	$ 5,354.16	$ (2,038,122)	$ (60.85)	-1.14%
Time-of-Day Service Rates TODS and TODP	$ 40,353.76	$ 12,131,694	$ 1,268.90	3.14%	$ 39,644.19	$ (12,131,694)	$ (2,268.97)	-5.72%
Retail Transmission Service Rate RTS	$ 257,217.91	$ 864,015	$ 2,400.04	0.93%	$ 464,607.46	$ (864,015)	$ (5,538.56)	-1.19%
Fluctuating Load Service Rate FLS	$ 2,649,580.12	$ -	$ -	0.00%	$ -	$ -	$ -	0.00%
Special Contracts **(LG&E Only)**	$ -	$ -	$ -	0.00%	$ 453,444.71	$ -	$ -	0.00%
Lighting Energy Rate LE	$ 738.90	$ (2,236)	$ (46.59)	-6.31%	$ 123.50	$ 2,236	$ 1.13	0.91%
Traffic Energy Rate TE	$ 19.07	$ (17,420)	$ (1.87)	-9.81%	$ 29.19	$ 17,420	$ 1.60	5.50%
Lighting Service and Restricted Lighting Service Rates LS and RLS	$ 15.20	$ (833,948)	$ (0.41)	-2.71%	$ 22.93	$ 833,948	$ 0.80	3.51%

(1) Based on Forecasted final 6/29 Orders for 2016 Rate Case Test Year Billings - July 1, 2018 - June 30 2018

The above calculations are based on the 2016 rate case filings and do not include the impacts of any legal merger related costs and benefits. Assuming the upfront costs to achieve are amortized over 5 years, costs increase by $4.27 million annually. The projected ongoing increases in costs offset virtually all of the projected savings identified by the study. Consequently, the rate impacts identified in the table would be modified to increase customer costs by the $4.27 million annual amortization cost.

Recommendation

The Companies have completed a thorough review of the impacts of a potential legal merger of LG&E and KU as ordered by the Commission in Case No. 2017-00415. The study confirmed that the two companies operate today as an integrated company in virtually all operational areas. This integrated approach has achieved significant savings for customers in many areas including joint dispatch, consolidated procurement of capital projects, fuel and consumable goods, joint call centers, and consolidated IT systems.

The potential legal merger of the two utilities would result in some savings in the accounting, tax, treasury, and regulatory areas, but also result in an increase of ongoing costs in other areas. In addition, the legal merger would require significant one-time costs to achieve the legal merger. Perhaps most importantly, the potential legal merger creates winners and losers among the customers because the savings are not enough to bring all customer rates to the lowest rate offered by each company. KU customers would be adversely impacted in most cases while LG&E customers could benefit from the legal merger.

For these reasons, the Companies do not recommend proceeding with the legal merger of LG&E and KU.