Matthew G. Bevin Governor

Charles G. Snavely Secretary Energy and Environment Cabinet



Commonwealth of Kentucky Public Service Commission 211 Sower Blvd. P.O. Box 615 Frankfort, Kentucky 40602-0615 Telephone: (502) 564-3940 Fax: (502) 564-3460 psc.ky.gov

5/9/2019

PARTIES OF RECORD

Re: Case No. 2019-00105

Attached is a copy of a memorandum, which is being filed in the record of the above-referenced case. If you have any comments you would like to make regarding the contents of the memorandum, please do so within five days of receipt of this letter.

If you have any questions, please contact Andrew Bowker, Staff Attorney II, at 502-782-2580.

Sincerely,

Diver R. Punson

Gwen R. Pinson Executive Director

WAB

Attachment

KentuckyUnbridledSpirit.com



Michael J. Schmitt Chairman

> Robert Cicero Vice Chairman

Talina R. Mathews Commissioner

### INTRA-AGENCY MEMORANDUM

### KENTUCKY PUBLIC SERVICE COMMISSION

**TO:** Case File No. 2019-00105

FROM: Andrew Bowker, Staff Attorney

**DATE:** May 9, 2019

RE: Informal Conference of April 30, 2019

On April 12, 2019, Kentucky Utilities Co. and Louisville Gas & Electric Co. as joint applicants, (jointly KU/LG&E), filed a motion to request an Informal Conference (IC) with Commission Staff to allow KU/LG&E to update the Commission on the planned expansion of the Advanced Meter Opt-In Program (Program) and the network and computer infrastructure used to support the Program. Pursuant to an order issued on April 22, 2019, an IC was conducted on April 30, 2019. Attached is a copy of the attendance roster.

Representatives from KU/LG&E offered some background to attendees regarding their purposes for requesting the IC, by stating that in PSC Case No. 2017-00441<sup>1</sup>, the Commission found that the cap on the pilot opt-in AMS program should be increased from 5,000 LG&E and 5,000 KU residential and small commercial customers to 10,000 LG&E and 10,000 KU residential and small commercial customers. Although the Commission denied without prejudice KU/LG&E's joint application seeking Certificates of Public Convenience and Necessity (CPCN) for the full deployment of Advanced Metering Systems (AMS), the Commission reasoned that the increased investment in AMS will not result in wasteful duplication because the pilot program meters can be used going forward if KU/LG&E refile an application for AMS that satisfies the evidentiary requirements for a CPCN.

KU/LG&E passed out to all attendees of the IC copies of the attached packet of information and then spoke about the advantages to customers of the Opt-In Program. KU/LG&E then detailed program upgrades and demonstrated the online functions associated with AMI metering that were detailed in the handout.

KU/LG&E stated that they have found that their biggest obstacle with the Program was that of customer awareness and detailed how they have attempted to engage with their customers by way of a recurring e-newsletter and links to You-Tube videos that demonstrate to customers how to use the various functions of the MyMeter Dashboard. KU/LG&E also explained how the Companies are attempting to lower the

<sup>&</sup>lt;sup>1</sup> Case No. 2017-00441 Electronic Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Review, Modification, and Continuation of Certain Existing Demand-Side Management and Energy Efficiency Programs (Ky. PSC Oct. 5, 2018).

15 percent attrition rate that occurs when a customer leaves or moves from the system. KU/LG&E noted that rather than continuing with their past practice of waiting for customers to request an Advance Meter, they are now offering new customers the Advanced Meter option at no additional cost to them when the customer calls to establish service. Other outreach efforts include a customer online survey panel consisting of 100 customer representatives. Information gathered from the survey group attempts to determine what elements encourage customers to sign up for Advanced Metering and what keeps customers engaged.

Commission Staff and the Attorney General requested details from KU/LG&E regarding the costs of the Program such as the difference between the cost of an electro mechanical and an Advanced Meter and whether certain costs will be capitalized or expensed. In speaking about these costs, KU/LG&E noted that the Companies decided to include them in the current DSM balancing adjustment filing because the revised balancing adjustment is a negative and the costs associated with the increased AMI meters and associated programs offset this negative balancing adjustment so that the customer does not feel an impact on his current bill.

There being no further discussion, the IC was then adjourned.

cc: Parties of Record

### COMMONWEALTH OF KENTUCKY

### BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC DEMAND SIDE MANAGEMENT)FILINGS OF LOUISVILLE GAS & ELECTRIC)COMPANY AND KENTUCKY UTILITIES COMPANY)2019-

CASE NO. 2019-00105

4/30/2019

Please sign in:

NAME e, CFARLAND BET e have

REPRESENTING KYO 0 KU LLE KU GE KU GF





Informal Conference Case No. 2019-00105 Kentucky Public Service Commission April 30, 2019



## Agenda

- Advanced Meter Opt-In Program Background
- Program Costs / Budgets
- DSM Bill Analysis
- Advanced Meter Program Update
- Advanced Meter Program Advantages and Future Functionality



## Background

- Case No. 2014-00003 approved 10,000 Advanced Meters for RS and GS customers (5,000 LG&E / 5,000 KU)
  - Network Infrastructure (RF Mesh Collectors and Routers)
  - Computer Systems
  - Meter Data Management System
  - Customer Education
  - Benefits of Pilot Program Advanced Meters
    - Disaggregated usage information, which customers could use to inform their energy efficiency efforts
    - LG&E and KU will have additional data to understand usage patterns and assist in future rate design
    - Gain an understanding of operational functionality of the advanced meters and customer responsiveness



## Background

- On August 30, 2018 the Commission entered the Order on Case No. 2018-00005 denying the Companies' joint request for CPCNs to install AMS without prejudice.
  - The Commission finds that the cap on the pilot opt-in advanced meters program should be increased.
  - The increased investment will not result in wasteful duplication.
- On October 5, 2018 the Commission entered the Order on Case No. 2017-00441 continuing the Advanced Meter Opt-In Offering for RS and GS customers (5,000 LG&E / 5,000 KU).
  - In addition, the Order stated that LG&E/KU's Advanced Meter Opt-In program should be modified to increase the customer cap for RS and GS customers (10,000 LG&E / 10,000 KU).
- On February 28, 2019 the Companies submitted a DSM Tariff Filing.
  - Include cost of Advanced Meter Expansion in remaining 2019 to mitigate impact to 2020 DBA.
  - Costs include additional meters, network infrastructure, meter data management system, customer education, and expenses of the systems to display communication data to customers.



### Advanced Meter Opt-In Program Costs/Budgets

	(000's)	
	Capital O&M Total	
Case No. 2014-00003		
Budget (2015 - 2018)	\$ 3,830 \$ 1,880 \$ 5,710	)
Actual (2015 - 2018)	3,475 1,103 4,578	í.
Variance	\$ 355 \$ 777 \$ 1,132	2
Case No. 2017-00441 Budget (2019 - 2025)	\$ 896 \$ 3,006 \$ 3,902	2
10,000 Additional Advanced Meters Budget (2019 - 2022)	\$ 2,789 \$ 1,436 \$ 4,225	
Total Program	\$ 7,160 \$ 5,545 \$ 12,705	)



## **DSM Bill Analysis**

- On average:
  - Original 10,000 AMS meter deployment \$458/meter
  - Additional 10,000 AMS meter deployment \$423/meter
- Revised Tariffs for 2019 budget are being included in the annual DSM DBA filing to mitigate 2020 DBA amounts.
- AMS affects rates RS and GS
- DSM Rates with DBA and 2019 Budget increase for Additional Advanced Meters
  - LG&E GS customers will see an increase of \$0.00013/kWh
  - LG&E RS, KU RS, and KU GS customer will see a decrease.
- Rate Case Order will impact Revenue from Lost Sales (reduction in DSM rate)
  - Subject to final Order, LG&E GS customers expected to see decrease as well.



### Advanced Meter Program Update – Through April 28, 2019





## Advanced Meter Opt-In Advantages (2015-2018)

MyMeter Dashboard (Currently Available, See Appendix for Screenshots)

- Set notifications in \$ or kWh. MyMeter will send a customized update when you've reached your desired threshold by text or email based upon your preference.
- Compare changes in your energy usage, in kWh or dollars, from the previous week, month, or 90-day average.
- Net metering customers can view energy import and export in 15 minute intervals.
- Residential time-of-day (RTOD) customers consumption during the most expensive periods are highlighted for analysis and behavioral change.
- View energy consumption patterns plotted against temperature.
- View data in graphical or numeric formats down to 15 minute intervals.
- Export data to spreadsheets or Green Button Download enabled products.
- Set "Energy Markers" that create a customized date reminder when you make any changes that could impact how you use energy. Provides energy consumption comparison between before and after the marker.



# New Advanced Meter Opt-In Advantages (Available now for 2019 forward)

Introduced MyMeter Dashboard Enhancements (Currently Available, See Appendix for Screenshots)

- Rate comparison tool for residential customers (RS, RTOD-E, and RTOD-D)
- Household comparison to similar homes
- Ability to provide third parties access to MyMeter to assist with energy savings
- View usage in terms of carbon footprint.
- View currently unbilled usage and see how that compares to last month's bill

Increased Data Availability

• Usage presentment loads every 4-6 hours for customers with RF Mesh meters.

**Customer Engagement** 

• Introduced a recurring e-newsletter for participants to highlight functionality and educate customers on how they can use MyMeter.



## **Future Advanced Meter Opt-In Functionality**

- Green Button Connect My Data
- Enhanced Mobile App
- Bill Prediction Tool
- Limited Number of In-home displays
  - Wi-Fi connected
  - ZigBee Connected no Wi-Fi
- Enhanced Meter Management System (Meter Data Management System Alternative)



## Meter Data Management System (MDMS)

MDMS manages large volumes of data supplied by metering systems and make that data accessible to various users and external systems.

Meter Data

- Import and store read and usage data from AMS systems (system of record for meter reads)
- Storage meter configuration data and service point/premise/meter/meter point/meter relationships
- Process register / interval data and meter events
  - Validation
  - Estimation
  - Editing (automated and manual)
  - Exception and Event Management
- · Version register / interval data and audit changes to data

Billing Determinant Generation:

- Simple register billing determinants sent to Customer Care System (CCS)
- Complex billing usage calculation capabilities such as support of Demand/TOD

### Reporting

Data Export

Interfaces/services to allow data export to and integration with other systems (e.g. web presentment)



## Enhanced Meter Management (MDMS Alternative)

- MDMS traditionally requires integration of three separate systems (Metering Head End ↔ MDMS ↔ CCS)
  - Estimated in previous cases for full deployment at approximately \$24 million
  - Interfacing the MDMS and CCS includes 80+ integration points to keep systems in sync.
- An emerging technology brings the MDMS into the existing CCS functionality.
  - Eliminates the 80+ integration points between the MDMS and CCS.
  - Requires approximately \$3 million (\$2.2M CAPEX, \$0.7M OPEX) to test capabilities
  - Upon successful completion of tests the Company plans to proceed with further integration and expansion of capabilities. This requires an incremental \$5.2 million (\$4M CAPEX, \$1.2M OPEX)
  - Potential savings of approximately \$6 million against traditionally fully deployed systems
- System uses:
  - Manage and Analyze data from AMS pilot, solar share participants, net metering and others.
  - Can be expanded if full deployment of AMS occurs.



### Summary

- Modified components of DSM charge for additional Advanced Meters to minimize the impact on the 2020 DBA
- LG&E and KU will continue to enhance the Advanced Meter Functionality and computer and network infrastructure
- LG&E and KU plan to move forward with testing the Enhanced Meter Management System as a means of managing and analyzing data
- Additional costs in 2019 of the Advanced Meter Opt-In Program will be included in 2020 DBA filing



## Appendix

MyMeter Screenshots



## Set notifications in \$ or kWh. MyMeter will send a customized update when you've reached your desired threshold by text or email based upon your preference.

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## Compare changes in energy usage, in kWh or dollars, from the previous week, month, or 90-day average.





## Net metering customers can view energy import and export in 15 minute intervals.





## Residential time-of-day (RTOD) customers consumption during the most expensive periods are highlighted for analysis and behavioral change.





## View energy consumption patterns plotted against temperature.





## View data in graphical or numeric formats down to 15 minute intervals.

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## Export data to spreadsheets or Green Button Download enabled products.

### Download Usage Data

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Meters.	✓ #911454 (Residential Electric Service)		<ul> <li>Name</li> <li>Meter</li> <li>Location</li> </ul>	≣ \$ ↑	To arrange the columns in a specific order, click and hold on the $\Xi$ , and drag and drop it to the location you want it to appear in your download results.
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End Date	08/20/2018				The data will be sorted in the order you specify.
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descending order for each column if you have a preference.

Save Current Settings





Set "Energy Markers" that create a customized date reminder when you make any changes that could impact how you use energy. Provides energy consumption comparison between before and after the marker.

Ene	nergy Markers						marker	
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9	Home	Thermostat from 78 - 72	Event	07/23/2017	26.37 kWh		28.31 kWh	8



### **Rate comparison tool for residential customers**



#### Compare your rate options

The MyMeter Rate Comparison Tool allows you to use your historical energy usage to compare available rate options. How do I Use the MyMeter Rate Comparison Tool?

STEP 1: Using the sliding scale, select the desired date range you want to use in your comparison. Click Compare Rates.

#### STEP 2: Review the estimated costs for your energy usage from the selected date range based on current available rate options.

Because weather plays a big part in the amount of energy you use, you may want to do your rate comparisons when you have at least an entire year's worth of usage. This will allow you to compare rates at various times of the year. You'll be able to see estimated costs for your usage during the summer and winter months as well as during the milder temperatures in spring and fall. And if you have multiple years of data, you'll be able to compare a milder summer or winter one year to a more extreme summer or winter another year. See how different date ranges and rates can impact your energy costs.

IMPORTANT NOTE: Because these estimates are based on your historical usage we strongly suggest you take into account any changes that have occurred or you anticipate will occur in your energy usage patterns before changing rates.

Learn more about available rate options



The calculation results do not factor in monthly utility fees and charges, instead focusing on your historical usage and usage patterns. Therefore, the total dollar amount will not exactly match your bill. Learn more about available rate options.

Compare Rates	Download	Close

#### Compare your rate options

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The calculation results do not factor in monthly utility tees and charges, instead focusing on your historical usage and usage patterns. Therefore, the total dollar amount will not exactly match your bill. Learn more about available rate options.





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### Household comparison to similar homes





## Ability to provide third parties access to MyMeter to assist with energy savings





## View usage in terms of carbon footprint.

# View unbilled usage and compare to last bill



passenger vehicle



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### **Recurring AMP It Up! E-Newsletter**

### IGE KU

#### LG&E and KU's Advanced Meter Program March 2019

As one of the thousands of LG&E and KU customers who are participating in our Advanced Meter Program, this outreach is designed to inform, educate and help you get the maximum benefit out of your Advanced Meter and the insights it provides. That, in turn, will help you better manage your energy usage. Each month we'll send out a short email that takes a closer look at some aspect or feature of the program. And we want to hear from you. If you have questions or just want to share your experience with the program (good or bad), drop us an email.

#### Did You Know ... ?

You can create an Energy Marker™ in your MyMeter dashboard. The Energy Marker allows you to track activities that can impact your energy usage, such as simply changing out light bulbs or something as major as getting a new HVAC system. Just create a customized date reminder on the day you make those changes and see how they affect your energy consumption over a period of time. Click HERE to watch a short video about Energy Markers.



And don't forget, you can always visit //lge-ku.com/advanced-meter/help to learn more about the program. See you next month!

#### IGE KU

#### LG&E and KU's Advanced Meter Program April 2019

Thank you for being one of the thousands of LG&E and KU customers with an advanced meter. This outreach is designed to inform, educate and help you get the maximum benefit out of your advanced mater and the insights it provides. That, in turn, will help you better manage your energy usage. Each month we'll send out a short email to our Advanced Meter Program participants and take a closer look at some aspect or feature of the program And we want to hear from you. If you have questions or just want to share your experience with the program, drop us an email.

#### Which Residential Electric Rate is best for you?

Getting the best rate possible for your energy usage is a good thing, right? One of the cool new features within your Mykleter dashboard is the Rate Comparison Tool. It will show you the rate option that gives you the greatest savings based on your actual energy usage. Should you remain on the Standard Electric Rate or consider switching to one of our Time-of-Day Rates?

- · Standard Electric Rate: You are charged the same amount for electricity no matter when you use it.
- . Time-of-Day Rates: These rates vary based on how and when you use energy, whether it's during peak hours or off-peak hours. Peak hours have a higher charge per kilowatt-hour

To locate the Rate Comparison Tool, click on the gear box symbol in any of the widget boxes at the top of your MyMeter page. Select Rate Comparison. and the Rate Comparison widget will display.

To compare rates, you'll use the sliding scale within the Rate Comparison Tool to select a date range, it's best if you have at least 12 months of usage so that you can compare rates across all seasons so you can see the impact weather has on your usage, then click Compare Rates.

sum all i yes the Mylanne dark Companies Nucl (TTP 1: Using the sliding scale, wells) the desired date range and want to use in your users

1719 2 Review the estimated costs for your energy usage from the selected date range based on current available rais option to some monthle palace is long part on the amount of energy part, one you may aver to be your rate a contrar part is worth of usage. This will allow part to compare rates of sectors torted of the sea

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We recommend you research all available options and compare your energy usage within several date ranges. It's also important to make note of changes that may have occurred in your household (new baby, child went away to college) or in the weather (milder winter one year but a harsh winter the next) and be mindful of any changes you anticipate will occur in your energy usage patterns. This is especially important before making a decision to change energy rates.

Don't forget, you can always visit ige-ku com/advanced-meter/help to learn more about the Advanced Meter Program. See you next month! Did you miss last month's update?

You can visit our website to see previous updates



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\*Louisville Gas and Electric Company 220 W. Main Street P. O. Box 32010 Louisville, KY 40232-2010