

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

**ELECTRONIC JOINT APPLICATION OF)
LOUISVILLE GAS AND ELECTRIC COMPANY)
AND KENTUCKY UTILITIES COMPANY FOR)
A CERTIFICATE OF PUBLIC CONVENIENCE)
AND NECESSITY FOR FULL DEPLOYMENT)
OF ADVANCED METERING SYSTEMS)**

CASE NO. 2018-00005

**POST-HEARING BRIEF
OF LOUISVILLE GAS AND ELECTRIC COMPANY
AND KENTUCKY UTILITIES COMPANY**

Filed: August 10, 2018

TABLE OF CONTENTS

INTRODUCTION 1

ARGUMENT 5

 I. The AMS Deployment Will Meet the Need of Metering Service to the Companies’ Customers and Will Not Create Wasteful Duplication Because Alternatives Were Considered and the Deployment Will Create Net Benefits and Provide Services the Companies’ Current Metering Cannot Provide. 5

 A. The Companies’ AMS proposal meets the need requirement because most of their current meters are obsolete and because AMS will provide improved customer service, enhanced reliability, reduced operating costs, and improved employee safety. 5

 B. The Companies’ proposed AMS deployment will not result in wasteful duplication. 8

 1. The Companies’ almost two decades of research, testing, and analysis of AMI and AMS technology, including multiple RFPs for AMS deployments, fully satisfy the requirement to thoroughly review all reasonable alternatives. 9

 2. The Companies’ AMS deployment is not wastefully duplicative because it will provide customers significant benefits equivalent to, or in excess of, those demonstrated by other successful AMI applicants. 11

 3. Customers will receive AMS benefits 25

 4. Delaying AMS deployment will not improve benefits; rather, it will deprive customers of benefits for longer. 26

 5. Prolonging AMS deployment would create additional costs for customers with no resulting benefit. 27

 6. Fixed- and low-income customers will receive benefits from AMS. 29

II.	The Commission Should Approve the Companies’ Proposed Opt-Out Charges as Reasonable in Structure and Amount because They Are Cost-Based.	30
III.	Remote Service Switching Will Create Significant Benefits While Retaining Existing Customer Protections.	31
IV.	The Companies Will Maintain Current Customer Privacy Protections.....	33
V.	AMS Will Provide Benefits the Companies Have Not Quantified.....	33
	CONCLUSION.....	35

INTRODUCTION

Louisville Gas and Electric Company (“LG&E”) and Kentucky Utilities Company (“KU”) (collectively “Companies”) submit this brief to the Kentucky Public Service Commission (“Commission”) in support of the Companies’ application seeking certificates of public convenience and necessity (“CPCNs”) for the full deployment of Advanced Metering Systems (“AMS”) and related exemptions from certain regulations.¹ The evidence in this case shows AMS will provide significant benefits to the Companies’ customers and is the best solution to meet the need of metering the services the Companies provide. In addition to empowering customers with enhanced usage data, enabling improved customer service capabilities and potential new rate offerings, and providing better information to help improve system reliability and storm-outage restoration, the Companies’ cost-benefit analysis shows that fully deploying AMS will provide net present value benefits of almost \$25 million to almost \$105 million from 2018-2040.

The vast majority of Commission-regulated electric utilities with distribution operations are already realizing the benefits of advanced metering infrastructure (“AMI,” which is a synonym for AMS) for their customers, and many have done so for years. Indeed, of the 21 such electric utilities regulated by the Commission, 19 have fully deployed or are in the process of fully deploying AMI.² The Commission has recognized the benefits of these deployments and

¹ AMS involves two-ways communications between meters and a utility. Automated meter reading (“AMR”) is an older metering technology involving one-way communications from meters to a utility. AMR does not permit a utility to provide remote software or firmware updates to the meter; current-generation AMI and AMS do allow such updates, as well as the ability to query a meter at any time regarding usage or other data, including possible tampering or safety-related information.

² See *In the Matter of: Consideration of the Implementation of Smart Grid and Smart Meter Technologies*, Case No. 2012-00428, Response of Big Sandy Rural Electric Cooperative Corporation (“RECC”) to PSC 1-113 (Mar. 20, 2013); Case No. 2012-00428, Response of Blue Grass RECC to PSC 1-113 (Mar. 20, 2013); *In the Matter of: Application of Clark Energy Cooperative, Inc. for a Certificate of Public Convenience and Necessity to Install an Advanced Metering Infrastructure (AMI) System*, Case No. 2016-00220, Order (Dec. 22, 2016); *In the Matter of:*

has stated its approval of them.³ The Commission has also recognized that AMI is the future of metering technology;⁴ indeed, for nearly half of American electric customers, it is the metering technology in use today.⁵ As proposed by the Companies, AMS will create significant operational savings, reduce non-technical losses, and equip customers with enhanced usage data, empowering them to understand and control their energy use as never before. The Companies believe it is now time for their customers to enjoy the same benefits other utility customers around the Commonwealth and more than 46% of customers in the United States now have, and the Companies' cost-benefit analysis supports that conclusion.

Not approving full AMS deployment would result in the Companies' being the only Commission-regulated electric utilities with distribution operations still deploying non-

Application of Cumberland Valley Electric, Inc. for Commission Approval for a Certificate of Public Convenience and Necessity to Install an Advanced Metering Infrastructure (AMI) System Pursuant to KRS 807 KAR 5:001 and KRS 278.020, Case No. 2018-00056, Order (July 9, 2018); Case No. 2012-00428, Response of Farmers RECC to PSC 1-113 (Mar. 20, 2013); In the Matter of: Application of Fleming-Mason Energy, Inc. for a Certificate of Public Convenience and Necessity to Install an Advanced Metering Infrastructure System (AMI), Case No. 2012-00361, Order (Oct. 11, 2012); In the Matter of: Application of Grayson Rural Electric Cooperative Corporation of Grayson, Kentucky, for Commission Approval Pursuant to 807 KAR 5:001 and KRS 278.020 for a Certificate of Public Convenience and Necessity to Install an Advanced Metering Infrastructure (AMI) System, Case No. 2017-00419, Order (July 16, 2018); Case No. 2012-00428, Response of Jackson Energy Cooperative to PSC 1-113 (Apr. 5, 2013); In the Matter of: Application of Licking Valley Rural Electric Cooperative Corporation for an Order Issuing a Certificate of Public Convenience and Necessity, Case No. 2016-00077, Order (Aug. 29, 2016); Case No. 2016-00077, Order on rehearing (Jan. 10, 2017); In the Matter of: Application of Nolin Rural Electric Cooperative Corporation for an Order Pursuant to 807 KAR 5:001 and KRS 278.020 Requesting the Granting of a Certificate of Public Convenience and Necessity to Install an AMI System, Case No. 2014-00436, Order Feb. 13, 2015; Case No. 2012-00428, Response of Owen Electric to PSC 1-113 (Mar. 21, 2013); Case No. 2012-00428, Response of Salt River Electric Cooperative Corporation to PSC 1-113 (Mar. 20, 2013); Case No. 2012-00428, Response of Shelby Energy Cooperative, Inc. to PSC 1-113 (Apr. 1, 2013); Case No. 2012-00428, Response of South Kentucky RECC to PSC 1-113 (Mar. 20, 2013); Case No. 2012-00428, Response of Taylor County RECC to PSC 1-113 (Mar. 20, 2013); Case No. 2012-00428, Response of Big River Electric Corporation, Jackson Purchase Energy Corporation, Kenergy Corp., and Meade County RECC to PSC 1-113 (Mar. 20, 2013); In the Matter of: Application of Kenergy Corp. for an Order Issuing a Certificate of Public Convenience and Necessity to Install an Automated Metering and Infrastructure System, Case No. 2014-00376, Order (Feb. 24, 2015); In the Matter of: Application of Duke Energy Kentucky, Inc. for (1) a Certificate of Public Convenience and Necessity Authorizing the Construction of an Advanced Metering Infrastructure; (2) Request for Accounting Treatment; and (3) All Other Necessary Waivers, Approvals, and Relief, Case No. 2016-00152, Order (May 25, 2017).

³ See *id.*; Case No. 2012-00428, Order at 10 (Apr. 13, 2016) (“Some of the investments in existing Smart Grid technology were made after the utilities had obtained a CPCN, and some were not. The Commission has not found any of the investments to be unreasonable.”).

⁴ Case No. 2017-00419, Order at 7 (July 16, 2018).

⁵ Malloy at 5 (citing Electric Power Annual 2016 at Table 10.10, available at <https://www.eia.gov/electricity/annual/pdf/epa.pdf> (accessed Dec. 7, 2017)).

communicating meter technology.⁶ Absent AMS, the Companies project they will spend between \$425 million and almost \$595 million in capital and operating cost through 2040 for outdated digital metering technology and related systems, to replace and maintain their more than 730,000 electromechanical electric meters, which are obsolete as the Commission has defined the term,⁷ and to replace digital meters already deployed.⁸ All of that spending will produce no operational savings, no reduction in non-technical losses, no increases in customer information and empowerment, no improvements in storm restoration, and no opportunity for new rate structures.

The choice between these futures is stark, and it is essentially binary. There is no plausible middle-ground solution that creates greater benefits, such as deploying AMS meters as the Companies' current meters come out of service. That approach would decrease the benefits of deployment, particularly with regard to operational savings, because AMS meters would be deployed in an inherently random way, preventing any meter-reading or field-services savings for years or even decades. Without first deploying the communications system and related IT infrastructure—about \$130 million of the total AMS capital investment—AMS meters and gas-index modules could not communicate data to and from the Companies, resulting in no meaningful non-technical-loss reductions or ePortal savings.⁹ Indeed, the Commission recently recognized the impracticability of an incremental deployment approach: “The Commission believes that the incremental deployment is impractical, because it would require Licking Valley to operate and maintain three separate metering systems for the indefinite future with existing

⁶ See n.2; Case No. 2012-00428, Response of Kentucky Power Company to PSC 1-113 (Mar. 20, 2013); *In the Matter of: Application of Inter-County Energy Cooperative Corporation for a General Adjustment of Existing Rates*, Case No. 2018-00129, Response to Inter-County to PSC 2-25 (July 17, 2018).

⁷ See, e.g., Case No. 2017-00419, Order at 7-8 (July 16, 2018).

⁸ Companies' Response to MHC Hearing Request No. 2 Attachment 1 (July 31, 2018); Companies' Response to MHC PHDR No. 1 (July 31, 2018).

⁹ Malloy Exh. JPM-1 at 44 (sum of Network and IT and Systems lines).

workforce levels.”¹⁰ The Companies agree with the Commission: the way to maximize the benefits of AMS is to deploy the relevant systems and meters with all reasonable speed.

Relatedly, delaying AMS deployment until the book value of existing meters decreases will not increase benefits. As noted above, the Companies will incur significant capital and operating costs through 2040 just to maintain the metering status quo, spending that is necessary because, as the Commission has recognized, nobody manufactures electromechanical meters today, making them obsolete as the Commission has defined it.¹¹ The digital meters the Companies currently deploy as their electromechanical meters come out of service have exactly the same service lives claimed by their manufacturers as the AMS meters the Companies propose to deploy: 20+ years.¹² Therefore, to delay AMS deployment until the book value of meters to be retired declines appreciably is to wait for a day that will never come. The Companies’ metering will require significant capital and operating investment over the next 20 years; the only question is whether the Companies’ customers will receive the benefits of AMS during those years or will remain some of the only Kentucky electric customers not to be served by two-way-communicating metering technology.

Choosing whether the Companies’ customers will be empowered with the metering technology of the future (and the last ten years) or will continue with obsolete metering technology ultimately depends upon the Commission’s application of the CPCN standard it has applied regarding other advanced-metering deployment proposals. The Companies’ application meets and exceeds that standard. As noted above, the Commission has expressed approval for the AMI deployments of the 19 other Commission-jurisdictional electric utilities in Kentucky

¹⁰ *In the Matter of: Application of Licking Valley Rural Electric Cooperative Corporation for an Order Issuing a Certificate of Public Convenience and Necessity*, Case No. 2016-00077, Order at 8 (Aug. 29, 2016).

¹¹ *See, e.g.*, Case No. 2017-00419, Order at 7-8 (July 16, 2018).

¹² Companies’ Response to MHC PHDR No. 2 Attachment 1 (July 31, 2018).

that have fully deployed AMI technology, as well as for a number of gas and water utilities that have done the same.¹³ The Companies therefore respectfully submit that the Commission should approve the Companies' proposed AMS deployment and regulatory exemptions as proposed.

ARGUMENT

I. The AMS Deployment Will Meet the Need of Metering Service to the Companies' Customers and Will Not Create Wasteful Duplication Because Alternatives Were Considered and the Deployment Will Create Net Benefits and Provide Services the Companies' Current Metering Cannot Provide.

The Commission has articulated a clear two-part CPCN standard when evaluating applications for advanced metering deployments: (1) a showing of need and (2) a lack of wasteful duplication.¹⁴ The proposed AMS deployment more than satisfies both requirements.

- A. The Companies' AMS proposal meets the need requirement because most of their current meters are obsolete and because AMS will provide improved customer service, enhanced reliability, reduced operating costs, and improved employee safety.

The Commission has found that utilities proposing full AMI deployments may show need in several ways. For example, the Commission held that Duke Energy Kentucky demonstrated a need to deploy 143,000 AMI meters "to enhance its ability to serve its customers by providing them with innovative programs and services to have greater access to data and better control over their energy consumption as well as to improve the reliability of Duke Kentucky's distribution

¹³ See, e.g., Case No. 2016-00152, Order (May 25, 2017) (approving gas and electric AMI for Duke Kentucky); *In the Matter of: Electronic Application of West Daviess County Water District for Commission Approval Pursuant to KRS 807, KRS 5:001, and KRS 278.020 for a Certificate of Public Convenience and Necessity to Install an Advanced Metering Infrastructure (AMI)*, Case No. 2017-00459, Order (Feb. 27, 2018); *In the Matter of: Electronic Application of Southeast Daviess County Water District for Commission Approval Pursuant to KRS 807, KRS 5:001, and KRS 278.020 for a Certificate of Public Convenience and Necessity to Install an Advanced Metering Infrastructure (AMI)*, Case No. 2017-00458, Order (Feb. 27, 2018).

¹⁴ See, e.g., Case No. 2017-00419, Order at 6-7 (July 16, 2018).

system.”¹⁵ The Commission also cited reduced meter-reading costs and improved employee safety as supporting the need for Duke’s full AMI deployment.¹⁶

The Commission has also stated that a utility’s metering is obsolete, and therefore meets the need requirement, at least in part because it did not have the two-way communications capability of AMS and AMI meters.¹⁷ Most notably, in approving Grayson RECC’s CPCN application for full AMI deployment, the Commission stated Grayson demonstrated need because its Landis+Gyr TS1 one-way communicating meters were obsolete due to the “movement to more robust two-way communication technologies and the unavailability of any replacement parts for these type of meters.”¹⁸

The Commission has also repeatedly stated meters that are no longer being manufactured are obsolete, which in turn demonstrates need that supports granting a CPCN for AMI deployment. For example, the Commission noted regarding need for Duke Kentucky’s AMI deployment that “electro-mechanical meters are no longer being manufactured.”¹⁹ Regarding Grayson’s AMI deployment, the Commission noted that Grayson had deployed a number of early AMI meters (Landis+Gyr TS2 meters) that were no longer being manufactured and soon would not be supported, making them obsolete.²⁰ The Commission made similar findings regarding the need for AMI deployments for Cumberland Valley RECC and Licking Valley RECC.²¹

In sum, the Commission has recently and consistently held that need for an AMI deployment can be shown by demonstrating either that an existing metering system is obsolete

¹⁵ Case No. 2016-00152, Order at 10-11 (May 25, 2017).

¹⁶ *Id.*

¹⁷ Case No. 2017-00419, Order at 7 (July 16, 2018).

¹⁸ *Id.*

¹⁹ Case No. 2016-00152, Order at 10 (May 25, 2017).

²⁰ Case No. 2017-00419, Order at 7 (July 16, 2018).

²¹ Case No. 2018-00056, Order at 11 (July 9, 2018); Case No. 2016-00077, Order at 4-5 (Aug. 29, 2016).

(meaning that an existing metering system is no longer being manufactured or supported, or is simply outmoded due to the superiority of a new technology), or that a new metering system will provide additional services and benefits not available with the existing metering system.

The Companies' proposed AMS deployment satisfies both approaches to demonstrating need.

With regard to obsolescence, the vast majority of meters the Companies propose to replace with AMS meters are electromechanical: more than 730,000 of the 980,000 electric meters the Companies propose to replace with AMS are electromechanical.²² Such meters are no longer being manufactured, and are therefore obsolete.²³ Moreover, the "movement to more robust two-way communication technologies" renders Companies' electromechanical and digital meters obsolete because they have no communications capabilities at all, and the Companies' few AMR meters have only one-way communications.²⁴ Therefore, the meters the Companies propose to replace with AMS meters are obsolete by the definition the Commission has used for years, and thus show a need for the AMS deployment.

The Companies have also demonstrated that AMS will make possible the kinds of services and benefits the Commission has cited as demonstrating need for other AMI deployments. The Companies have shown that their proposed AMS deployment will enable "innovative programs and services to have greater access to data and better control over their energy consumption."²⁵ The Companies have shown AMS will help improve the reliability of their distribution system, including helping to minimize service restoration times, particularly for

²² Companies' Response to MHC PHDR No. 1 (July 31, 2018); Malloy Exh. JPM-1 at 48.

²³ See, e.g., Case No. 2017-00419, Order at 7 (July 16, 2018); Case No. 2018-00056, Order at 11 (July 9, 2018); Case No. 2016-00077, Order at 4-5 (Aug. 29, 2016).

²⁴ Case No. 2017-00419, Order at 7 (July 16, 2018).

²⁵ Case No. 2016-00152, Order at 10 (May 25, 2017).

customers in nested outages.²⁶ Used in concert with the Companies' distribution automation deployment the Commission recently approved,²⁷ AMS could potentially assist with fault location, isolation, and service restoration as part of a future advanced distribution management system; thus, AMS will enhance the Companies' distribution automation and distribution management systems and efforts.²⁸ The Companies have shown the AMS deployment will significantly reduce operating costs, including meter reading and field services costs.²⁹ Importantly, full AMS deployment will improve employee safety.³⁰ In short, the Companies have clearly shown all the categories of service improvements and benefits the Commission has previously cited as showing need for AMS-like systems; indeed, the Companies have shown AMS will deliver even more services and benefits than the Commission has previously cited. Therefore, the Companies have demonstrated need for the proposed AMS deployment under the criteria the Commission has stated and applied.

B. The Companies' proposed AMS deployment will not result in wasteful duplication.

The Companies' proposed AMS deployment will not result in wasteful duplication because it is the result of years of study and pilot programs to consider all reasonable alternatives, and because it will produce operational savings, reduce non-technical losses, empower customers with enhanced usage data on a daily or more frequent basis, and enable services and potential tariff offerings not possible with current metering.

The Commission has a well-developed definition of wasteful duplication:

²⁶ Malloy Exh. JPM-1 at 39.

²⁷ *In the Matter of: Electronic Application of Kentucky Utilities Company for an Adjustment of Its Electric Rates and for Certificates of Public Convenience and Necessity*, Case No. 2016-00370, Order (June 22, 2017); *In the Matter of: Electronic Application of Louisville Gas and Electric Company for an Adjustment of Its Electric and Gas Rates and for Certificates of Public Convenience and Necessity*, Case No. 2016-00371, Order (June 22, 2017).

²⁸ See Malloy Exh. JPM-1 at 26.

²⁹ Malloy Exh. JPM-1 at 36; Companies' Response to MHC PHDR No. 2 Attachment 1 (July 31, 2018).

³⁰ See, e.g., Malloy at 27.

"Wasteful duplication" is defined as "an excess of capacity over need" and "an excessive investment in relation to productivity or efficiency, and an unnecessary multiplicity of physical properties." To demonstrate that a proposed facility does not result in wasteful duplication, we have held that the applicant must demonstrate that a thorough review of all reasonable alternatives has been performed. Selection of a proposal that ultimately costs more than an alternative does not necessarily result in wasteful duplication. All relevant factors must be balanced.³¹

The Commission's cases applying this standard regarding proposed AMI deployments show that considering a number of possible AMI options and demonstrating that the chosen AMI option will provide benefits are sufficient to satisfy the standard.

1. The Companies' almost two decades of research, testing, and analysis of AMI and AMS technology, including multiple RFPs for AMS deployments, fully satisfy the requirement to thoroughly review all reasonable alternatives.

With regard to the requirement that "the applicant must demonstrate that a thorough review of all reasonable alternatives has been performed," the Commission has consistently held that considering several AMI options is sufficient. For example, the Commission stated that Grayson RECC's AMI deployment would not result in wasteful duplication in part because it was "the most reasonable least-cost alternative to address Grayson RECC's metering needs"³² Notably, Grayson did not consider the possibility of retaining its existing metering system and having meter readers travel to read the meters, or of replacing its existing meters with digital meters to be read by meter readers, or of replacing its existing meters with AMR meters.³³ Rather, Grayson considered several AMI options only, and selected one that is similar to what the Companies are proposing to deploy. The Commission took a similar approach with regard to

³¹ Case No. 2017-00419, Order at 7 (July 16, 2018); Case No. 2016-00152, Order at 9-10 (May 25, 2017).

³² Case No. 2017-00419, Order at 8 (July 16, 2018).

³³ See Case No. 2017-00419, Application (Oct. 24, 2017); Case No. 2017-00419, Order (July 16, 2018).

Duke Kentucky, Cumberland Valley RECC, Clark Energy, and Licking Valley RECC.³⁴ Notably, Duke Kentucky’s cost-benefit analysis compared only its proposed AMI deployment to continuing with its then-current metering system consisting largely of electromechanical meters, not to a potential AMR deployment or other scenarios.³⁵

In the context of these precedents, the Companies have certainly “demonstrate[d] that a thorough review of all reasonable alternatives has been performed.” The Companies have studied advanced metering technology for almost two decades. The Companies’ study of these technologies began with their deployment of 4,000 Landis+Gyr TS1 meters in Wilmore, Kentucky, in 1999.³⁶ The Companies continued their study and expanded their experience with AMI technology and the rate structures they could enable with their 2007 smart meter and responsive-pricing pilot, which continued into 2011.³⁷ In 2008, the Companies retained Accenture to consult with the Companies regarding possible full AMI deployment at that time, which concluded such a deployment was not then net beneficial.³⁸ The Companies again studied the possibility of full AMI deployment or perhaps targeted deployment of AMI technology in 2013 with a comprehensive study conducted by DNV-KEMA and filed with the Commission, which concluded that full deployment was not then appropriate, but that certain limited deployments might be.³⁹ Following the DNV-KEMA study, the Companies planned and deployed Louisville Downtown Network in 2014, choosing Landis+Gyr as their vendor after

³⁴ Case No. 2016-00152, Order (May 25, 2017); Case No. 2018-00056, Order (July 9, 2018); Case No. 2016-00220, Order (Dec. 22, 2016); Case No. 2016-00077, Order (Aug. 29, 2016).

³⁵ Case No. 2016-00152, Application at 9 and at Exh. 8, Direct Testimony of Donald L. Schneider, Jr. at Attachments DLS-3 and DLS-4 (Apr. 25, 2016).

³⁶ Malloy Exh. JPM-1 at 8.

³⁷ Malloy Exh. JPM-1 at 8-9; *In the Matter of: Request of Louisville Gas and Electric Company to Cancel and Withdraw the Tariffs for Its Responsive Pricing and Smart Metering Pilot Program*, Case No. 2011-00440, Application (Oct. 31, 2011).

³⁸ Case No. 2016-00371, Companies’ Response to ACM 1-33 (Jan. 25, 2017).

³⁹ Case No. 2011-00440, DNV-KEMA Report (Dec. 20, 2013).

conducting an RFP process with five significant AMI vendors: Elster, Itron, Landis+Gyr, Sensus, and Silver Spring Networks.⁴⁰ The Companies also sought and received approval from the Commission in 2014 to offer the AMS Customer Offering to 10,000 customers, again conducting an RFP with major AMI providers: Elster, Itron, Landis+Gyr, and Silver Spring Networks.⁴¹ In 2016, the Companies again retained Accenture to advise them concerning a possible full deployment of AMS, which then appeared to be net beneficial, resulting in the Companies' 2016 proposal for full AMS deployment.⁴² In sum, the Companies have spent nearly two decades studying, testing, piloting, and conducting RFPs for these technologies. Indeed, the Companies' history concerning AMI demonstrates that the Companies prudently waited until AMI technology and pricing matured to the point that it is now prudent and beneficial to invest in a full AMS deployment.

2. The Companies' AMS deployment is not wastefully duplicative because it will provide customers significant benefits equivalent to, or in excess of, those demonstrated by other successful AMI applicants.

The Commission has not cited dollar-denominated benefits as the only reason a proposed AMI deployment is not wastefully duplicative; rather, increased utility capabilities and service enhancements, as well as improved customer access to usage data, are the most cited benefits. For example, the Commission stated that Grayson RECC's proposed Landis+Gyr RF-based AMI deployment (similar to what the Companies are proposing) would not be wastefully duplicative because it would "allow Grayson RECC to provide its customers with near real-time usage information; the ability to perform remote connection and reconnection; distribution automation;

⁴⁰ See Companies' Response to MHC Hearing Request No. 2 (July 31, 2018).

⁴¹ See *id.*

⁴² See, e.g., Case No. 2016-00370, KU's Response to PSC 1-50 Attachment A3 at 1 (Dec. 8, 2016) (showing multiple payments to Accenture for AMS consulting services in 2016); Case No. 2016-00371, LG&E's Response to PSC 1-50 Attachment A3 at 1 (Dec. 8, 2016) (showing multiple payments to Accenture for AMS consulting services in 2016).

integrate into Grayson RECC's meter data management system, outage management system, and customer information system; and provide RF meter communication service to the local water and gas utilities.”⁴³ Notably, though, Grayson’s application did not claim the deployment would “provide ... customers with near real-time usage information”; rather, Grayson listed the ability to provide 15-minute usage data via a web portal as a potential future benefit of its deployment.⁴⁴ Indeed, Grayson’s application did not include any cost to provide customers historical usage data through a web portal,⁴⁵ whereas the Companies have included those costs and will provide this benefit through the AMS deployment. Similarly, Grayson listed distribution automation among its “Future Benefits,” not as an immediate benefit of AMI deployment,⁴⁶ whereas the Companies have deployed distribution automation with the Commission’s approval.⁴⁷ In addition, Grayson did not claim or show that it had actual contracts or agreements with other utilities to use the RF network it proposed to build, but rather that it was possible other utilities could use the network at some point in the future.⁴⁸ Thus, of the five kinds of benefits the Commission cited as supporting Grayson’s AMI deployment, three were potential future benefits, at least two of which would require additional and unspecified investment to obtain. Notably, Grayson stated that it foresaw only “minimal cost savings associated with the proposed AMI project.”⁴⁹

Regarding Duke Kentucky’s AMI proposal, the Commission noted that AMI would result in benefits greater than its costs, citing the same kinds of benefits the Companies have identified

⁴³ Case No. 2017-00419, Order at 8-9 (July 16, 2018).

⁴⁴ Case No. 2017-00419, Application Exh. 4 at 2 (Oct. 24, 2017).

⁴⁵ See Case No. 2017-00419, Application at 1-2 (Oct. 24, 2017).

⁴⁶ Case No. 2017-00419, Application Exh. 4 at 2 (Oct. 24, 2017).

⁴⁷ Case No. 2016-00370, Order at 29 (June 22, 2017) (“KU is granted a CPCN to implement the DA project as described in the application.”); Case No. 2016-00371, Order at 35 (June 22, 2017) (“LG&E is granted a CPCN to implement the DA project as described in the application.”).

⁴⁸ Case No. 2017-00419, Application Exh. 4 at 2 (Oct. 24, 2017); Case No. 2017-00419, Grayson Response to Commission Staff DR No. 3(b)(2)-(3) (Dec. 15, 2017).

⁴⁹ Case No. 2017-00419, Grayson Response to Commission Staff DR No. 3(a) (Dec. 15, 2017).

and quantified concerning AMS: “the elimination of monthly and off-cycle manual meter reads, the elimination of truck rolls due to the ability to conduct electric disconnects and reconnects remotely, enhanced theft detection, reduction of meter installation errors, reduction of underperforming meters, and the availability of interval usage data that can empower customers to better understand their energy usage and save energy.”⁵⁰ Similarly, with regard to two water district AMI deployments approved this year, the Commission stated the deployments would not be wastefully duplicative on the basis of the utilities’ assertions regarding “operational efficiencies, as well as specific personnel cost savings”⁵¹ The Companies have shown AMS will provide all these categories of benefits and others, including improved system reliability, better-informed service restoration, and potential new rate offerings.

Moreover, the Companies have demonstrated that the proposed AMS deployment will provide significant net benefits. The Companies’ evidence shows that full AMS deployment will provide quantifiable present-value net benefits ranging from almost \$25 million using highly conservative operational savings assumptions to almost \$105 million using operational savings assumptions based on the Companies’ recent request for information (“RFI”) responses regarding future meter-reading and field-services costs.⁵² Indeed, using a range of different assumptions, the AMS deployment remains net beneficial, even without considering the unquantified and unquantifiable benefits AMS will provide.

⁵⁰ Case No. 2016-00152, Order at 11 (May 25, 2017).

⁵¹ Case No. 2017-00459, Order at 2 (Feb. 27, 2018); Case No. 2017-00458, Order at 2 (Feb. 27, 2018).

⁵² Companies’ Response to MHC Hearing Request No. 2 Attachment 1.

- a. The Companies use of a cost-benefit study period from 2018-2040 is valid, but net benefits still result when using shorter cost-benefit study periods.

To understand why the Companies' 2018-2040 cost-benefit study period was appropriate, it is important to note that the Companies' AMS Business Case assumed AMS meters would not begin to be deployed until the second quarter of 2019; including AMS-related costs and avoided-capital benefits in 2018 was necessary for completeness, but it was not related to AMS meter service life.⁵³ AMS meter deployment was projected to occur through the first quarter of 2021 in Kentucky.⁵⁴ Therefore, assuming an average service life of 20 years, the Companies' approach did not take into account the full benefits of the meters deployed in the first quarter of 2021, which would be assumed to continue providing benefits into the first quarter of 2041. Indeed, performing a weighted average service life calculation for AMS meters based on the Companies' proposed deployment schedule and a 2018-2040 cost-benefit period results in a weighted average service life of about 20.7 years, not 23 years. Moreover, the Companies included replacement costs for AMS meters beginning in the sixth year (i.e., 2025) even though a majority of the AMS meters would still have been covered under their five-year warranty at the beginning of that year, and even though strictly assuming an average service life of 20 years for all AMS meters arguably could have justified not including any replacement cost throughout the study period. Because the Companies made these assumptions, a cost-benefit period of 2018-2040 was and is reasonable.

But it is noteworthy that the proposed AMS deployment is net beneficial even assuming a shorter cost-benefit period. For example, using a cost-benefit period of 2018-2038, which

⁵³ Malloy Exh. JPM-1 at 55.

⁵⁴ *Id.*

necessarily assumes an AMS meter service life of less than 20 years,⁵⁵ still results in present-value net benefits ranging from \$0.3 million using conservative operational saving assumptions to more than \$75 million using operational savings assumptions updated for recent RFI results.⁵⁶ Those results indicate the Companies' customers will pay significantly higher meter-reading and field-services costs beginning in 2019, well in excess of what the Companies had reasonably assumed in 2017 when building the AMS Business Case filed in this proceeding. Moreover, using conservative operational savings assumptions and tying benefits to each tranche of meters as deployed, e.g., meters deployed in the second quarter of 2019 produce benefits only through the end of the first quarter of 2039, produces present-value net benefits of \$11.6 million.⁵⁷ Therefore, there is evidence in the record to support quantifiable net benefits—to say nothing of the unquantified and unquantifiable benefits—of AMS deployment when assuming a 20-year average service life.

Contrary to the AG's assertions, assuming a 20-year service life for AMS meters is well supported. Landis+Gyr represented directly to the Companies that the AMS meters the Companies propose to deploy will have a service life of 20 years,⁵⁸ and Landis+Gyr's publicly available marketing materials and specification sheets for AMS meters shows a service life of "20+ years."⁵⁹ Notably, a service life of "20+ years" is what digital meter vendors, including Landis+Gyr, are stating for their non-AMR, non-AMS meters, as well.⁶⁰ Therefore, there are

⁵⁵ Recall that the AMS Business Case assumed the first meters would be deployed in the second quarter of 2019, meaning that a 20-year service life for those meters would extend at least to the end of the first quarter of 2039.

⁵⁶ See Companies' Response to MHC Hearing Request No. 2 (July 31, 2018).

⁵⁷ See July 3 Verified Informational Update at 2. See also Malloy Rebuttal at 23.

⁵⁸ See attachment to Companies' Response to PSC 1-9(a).

⁵⁹ Companies' Response to MHC Hearing Request No. 2, Attachment 2 (July 31, 2018). Available online at https://www.landisgyr.com/webfoo/wp-content/uploads/2014/08/PS_FocusMeterE331AXe_E351AXeSD.pdf (accessed Aug. 6, 2018).

⁶⁰ See Companies' Response to MHC PHDR No. 2, Attachment 1 (July 31, 2018).

clear representations from the manufacturer that the expected service life of AMS meters is 20 years or more.

This 20-year service life assertion is also consistent with assumptions made in other utilities' cost-benefit analyses, including Ameren Illinois,⁶¹ Xcel,⁶² and Duke Energy Ohio.⁶³ The Ameren Illinois example is particularly illustrative because Ameren explicitly used a 20-year service life for its proposed AMI meters.⁶⁴ Even though Ameren used a cost-benefit period of only 20 years, Ameren ensured it fully accounted for the value of a 20-year service life by including a \$154 million terminal value to account for the net benefits AMI produced beyond the end of the 20-year study period.⁶⁵ In addition, the AG's own witness assumed a 20-year service life for AMI meters when conducting independent analyses of Xcel's and Duke Ohio's AMI deployments.⁶⁶ All of this is in addition to numerous other examples of utilities' assumptions and product testing to support a 20-year service life.⁶⁷

⁶¹ Malloy Direct at 22 (citing Case No. 2016-00371, Attachment to AG's Response to LG&E DR 1, "Ameren Illinois Benefit-Cost Analysis.pdf" at pdf page 11 (Ameren Exhibit 2.4RO Page 7 of 52)).

⁶² AG's Response to Companies' DR No. 1 Attachment of Xcel SmartGridCity Demonstration Project Evaluation Summary at 6 (June 8, 2018).

⁶³ AG's Response to Companies' DR No. 1 Attachment of Duke Energy Ohio Smart Grid Audit and Assessment at 83 (June 8, 2018).

⁶⁴ Malloy Direct at 22 (citing Case No. 2016-00371, Attachment to AG's Response to LG&E DR 1, "Ameren Illinois Benefit-Cost Analysis.pdf" at pdf page 11 (Ameren Exhibit 2.4RO Page 7 of 52)).

⁶⁵ Case No. 2016-00371, Attachment to AG's Response to LG&E DR 1, "Ameren Illinois Benefit-Cost Analysis.pdf" at pdf page 42 (Ameren Exhibit 2.4RO Page 38 of 52)).

⁶⁶ AG's Response to Companies' DR No. 1 Attachment of Xcel SmartGridCity Demonstration Project Evaluation Summary at 6 (June 8, 2018); AG's Response to Companies' DR No. 1 Attachment of Duke Energy Ohio Smart Grid Audit and Assessment at 83 (June 8, 2018).

⁶⁷ Malloy Direct at 22 (citing Case No. 2016-00371, Attachment to AG's Response to LG&E DR 1, "Ameren Illinois Benefit-Cost Analysis.pdf" at pdf page 11 (Ameren Exhibit 2.4RO Page 7 of 52)):

With respect to meter depreciation, Ameren Illinois has reviewed some of the largest AMI deployment plans in the United States, such as those by Duke Energy, Southern California Edison, DTE, and PG&E to base its AMI deployment on a useful life of 20 years for the AMI meter. As with any complex system, individual components may fail early or last longer than the overall useful life. The AMI meter's useful life does not depend on when the first component fails or how long the last meter-module functions. Instead, its life depends on the system as a whole operating correctly and reliably. Moreover, Southern California Edison conducted product testing that concluded that the meter useful life would be 20 years or more.

At hearing, the Attorney General (“AG”) attempted to use Duke Energy Ohio’s recent application to replace its existing AMI system with a new AMI system as evidence that AMI cannot have a service life of 20 years.⁶⁸ But this ignores the AG’s own expert testimony on that issue, which cited obsolescence due to older cellular communications technology, inflexible software, and lack of support from the manufacturer due to acquisitions and bankruptcy as the reasons for Duke Energy Ohio’s recent application for new AMI metering.⁶⁹ Notably, Mr. Alvarez did not state that the deployed meters were failing. More importantly, the Companies have addressed all of these issues with their proposed AMS deployment: using an RF mesh network that the Companies, not a third party, controls to ensure communications with meters for the duration of the deployment; having the ability to update software and firmware over the air to ensure ongoing software flexibility; and using Landis+Gyr as the vendor, which is one of the largest vendors in metering and should help protect against acquisition and bankruptcy concerns. Therefore, the example of Duke Energy Ohio is not convincing evidence against a 20-year service life for the Companies’ proposed AMS meters.

Finally, as the Companies have already stated, they are willing to use a 20-year depreciation life for AMS meters if the Commission requires it.⁷⁰ Using a longer depreciation life for AMS meters will add to the net present-value benefits to customers, which gives additional reason for the Commission to approve the proposed deployment.

- b. No party to this proceeding has contested the Companies’ AMS cost projections.

As discussed at length above, the Companies have studied advanced metering for nearly two decades. They have consulted with some of the most experienced consultants in this field,

⁶⁸ See, e.g., Hearing Video at 9:45:00 – 9:47:20.

⁶⁹ Alvarez at 25.

⁷⁰ Malloy Rebuttal at 45.

and have conducted their own pilot programs and RFPs regarding AMI and AMS deployments. Therefore, the AMS deployment cost itself is not in dispute; how the Companies' existing meters are fully accounted for in the cost-benefit analysis is discussed further below.

- c. The operational savings AMS will produce are significant and unchallenged.

The Companies' AMS deployment will produce significant operational savings. Under the conservative operational cost assumptions the Companies used when developing the AMS Business Case, AMS will produce nominal operational savings of more than \$425 million through 2040.⁷¹ This equates to present-value savings of over \$203 million.⁷² When accounting for significant expected increases in operational costs, particularly meter reading and field services costs based on recent RFI results regarding such services, expected nominal operational savings climb to almost \$595 million, and present-value operational savings increase to over \$283 million.⁷³ It is important to note the magnitude of the currently anticipated increases in meter-reading and field-services costs, which are expected to increase 64% and 74% respectively beginning in 2019.⁷⁴ The Companies believe deploying AMS to avoid those costs to the greatest reasonable extent is both prudent and necessary. Indeed, these updated savings are so large that even if the Commission assumes other benefits are overstated by as much as 40%, the proposed AMS deployment will still be net beneficial on a present-value basis.

Among the operational benefits the Companies have quantified are automated outage reporting and shortened service restoration times.⁷⁵ AMS can report when power outages have been detected for individual meters, allowing earlier detection of outages and aiding the

⁷¹ July 3 Verified Informational Update at 2.

⁷² *Id.*

⁷³ Companies' response to MHC Hearing Request 2 at Attachment 1 page 3 (July 31, 2018).

⁷⁴ Companies' response to MHC Hearing Request 2 at 3 (July 31, 2018).

⁷⁵ Malloy Exh. JPM-1 at 39.

Companies to identify the location and extent of outages. More rapid and precise outage identification supports a more rapid and effective coordination of restoration efforts. Faster and better-targeted restoration activity translates into decreased crew time, overtime savings, reduced fleet costs, and lower contractor expenditures representing total savings of \$4.6 million over 20 years based on a 10% reduction in outage duration and fleet costs. But more importantly, it results in customers being restored to service more efficiently and without requiring them to report outages; AMS does the reporting on its own. This is particularly helpful for identifying and addressing nested outages, i.e., where outages are located inside larger outages.

d. The Companies' non-technical loss benefit is reasonable.

A major benefit of the proposed AMS deployment is the ability to detect and correct non-technical losses. Notably, non-technical losses comprise not only theft and meter error, but more than 30 different kinds of losses.⁷⁶ As Mr. Malloy testified at hearing, a number of these categories of non-technical losses are known issues for the Companies, including meter-multiplier and current-transformer issues.⁷⁷ AMS will enable the Companies to detect and address them economically. That will be possible largely due to the new Meter Operations Center, which will be tasked with collecting and analyzing AMS data, including data to detect and address all kinds of non-technical losses. Therefore, the Companies included costs related to detecting and addressing non-technical losses beyond what the Companies are currently spending to detect and collect theft of service; the Meter Operations Center includes ongoing

⁷⁶ Malloy Exh. JPM-1 Appx. A-8 at 20.

⁷⁷ Hearing Video at 11:32:49 – 11:33:28.

annual operating costs of more than \$1.5 million.⁷⁸ Thus, the AG's assertion that the Companies have overlooked additional costs of addressing non-technical losses is incorrect.⁷⁹

Also incorrect is the AG's assertion that the Companies will have to detect, bill, and collect hundreds of thousands of new instances of non-technical losses to achieve the level of benefit asserted in the AMS Business Case.⁸⁰ Properly understood, the Companies' asserted non-technical losses benefit does not depend on billing and collecting past non-technical losses, but rather on detecting, correcting, and then collecting non-technical losses on a going-forward basis. Certainly collecting for previous non-technical losses detected with AMS would be a benefit of the new system, but the benefit does not depend upon it. Rather, the benefit assumes detection and correction of non-technical losses with a degree of persistence into the future.⁸¹ For example, detecting and correcting a current-transformer issue could result in increased revenues arising from more accurate usage measurement for years to come.⁸² Thus, each non-technical loss detected and corrected that persists from year to year provides a benefit for each year the correction persists. Therefore, the Companies' non-technical loss benefit does not depend upon detecting, billing, and collecting hundreds of thousands of thefts of service each year, but rather upon detecting and correcting non-technical losses of various kinds—not just theft—going forward, the ongoing benefit of which will not require collecting any amount for past usage.

It is also important to note that any increased revenues resulting from reduced non-technical losses will result in benefits to all customers between base-rate changes. The

⁷⁸ Companies' Response to AG 2-13.

⁷⁹ *See, e.g.*, Alvarez at 39-40.

⁸⁰ Alvarez at 40-41.

⁸¹ Malloy Rebuttal at 39.

⁸² Hearing Video at 11:32:49 – 11:33:28.

Companies' Fuel Adjustment Clause ("FAC") mechanisms will allow part of the fuel-related portion of reduced non-technical losses to help reduce billed fuel costs to all customers.

Overall, the Companies' non-technical loss benefit is reasonable. The Companies used the best available information about non-technical losses to begin with an assumption that 2% of revenues are currently lost to non-technical losses; certainly no other party to this proceeding has claimed to have a better supported non-technical losses assumption.⁸³ The Companies then reduced that amount to account for assumed opt-outs, detection levels, and collection levels (again, these are assumed to be total collection levels, not merely retrospective collection levels).⁸⁴ When taking into account all those factors, the total non-technical loss benefit comes to just 0.71% of revenues. As the Companies have explained in this proceeding, the total 0.71% level of non-technical loss benefit is reasonable and generally supported by other utilities' assumptions in similar analyses.⁸⁵

- e. The Companies' ePortal benefit is reasonable because it is supported by data from the Companies' own customers and does not account for possible savings from non-residential customers.

The Companies have explained at length why their proposed ePortal benefit is reasonable.⁸⁶ Most notably, though the AG sought at hearing to make much of the Smart Grid Consumer Collaborative report as somehow undermining the Companies' ePortal benefit,⁸⁷ the Companies have data that is far better than a review of literature from years ago: data from their own customers. As the Tetra Tech analysis of that data shows, the Companies' ePortal benefit based on just 0.5% bill savings on average for residential customers is less than the data-

⁸³ Malloy at 17; Malloy Exh. JPM-1 Appx. 8; Malloy Rebuttal at 33-38.

⁸⁴ Malloy at 17-18.

⁸⁵ Malloy Rebuttal at 33-38.

⁸⁶ *See, e.g.*, Malloy Rebuttal at 24-33.

⁸⁷ *See, e.g.*, Hearing Video at 10:59:42 – 11:00:28.

supported average savings level of 0.9%.⁸⁸ The Companies' customers achieved those savings without any form of in-home display or other real-time feedback other than the MyMeter portal available to AMS Customer Offering participants, negating the AG's assertions that savings can be achieved only when using in-home devices or similar tools.

But even if the Smart Grid Consumer Collaborative report is to be taken as authoritative, the Companies have observed in this proceeding that other literature on this topic, including literature cited by the Smart Grid Consumer Collaborative, indicates that indirect feedback of the kind ePortal will provide can result in energy savings in excess of what the Companies' ePortal benefit assumes.⁸⁹

It is also noteworthy that the Companies' ePortal benefit and the Tetra Tech analysis do not account for savings by non-residential customers. That highly conservative approach, i.e., assuming no savings at all for non-residential customers resulting from the granular usage data AMS will provide, is an assumption that necessarily understates the savings those customers will achieve.⁹⁰ The Companies have more than 140,000 non-residential customers who will receive AMS electric meters.⁹¹ Any AMS-related energy savings those more than 140,000 customers achieve will add to the ePortal benefit.

In addition, though the AG attempted to construe the customers Tetra Tech analyzed as being more energy-conscious and motivated than average customers,⁹² Tetra Tech's analysis controlled for that possible selection bias by comparing AMS Customer Offering participants to

⁸⁸ Malloy Exh. JPM-1 Appx. A-10.

⁸⁹ See Companies' Response to AG 1-13.

⁹⁰ Malloy Rebuttal at 51.

⁹¹ Companies' response to AG 1-19.

⁹² See, e.g., Alvarez at 30-31.

each other, not to the general customer population.⁹³ The AG's bias argument is therefore incorrect and unsupported.

Anecdotally, Mr. Malloy testified at hearing that he was able to achieve bill savings in excess of 10% using AMS and MyMeter, and did so without routinely checking his MyMeter page.⁹⁴ Indeed, he testified he had used MyMeter perhaps four times over the course of two years to achieve those savings.⁹⁵

Perhaps most importantly, the size of the ePortal benefit is ultimately entirely in customers' control. The Companies plan to provide customers 15-minute interval data at least once every 4 hours so customers can use that data to control their energy use as they see fit.⁹⁶ This additional data will provide an empowerment value that exceeds dollars and cents, though it certainly has that value, as well. The Companies therefore believe their ePortal savings benefit is well supported.

- f. The Companies correctly accounted for the remaining book value of retired meters in their cost-benefit analysis.

The Companies' AMS Business Case is a marginal cost-benefit analysis from the perspective of the Companies' customers; the only AMS costs and benefits shown are those that are changes relative to continuing with the Companies' existing metering system through 2040. The Companies have stated they will seek a regulatory asset for their retired meters if the Commission approves the AMS deployment, and that they will seek to recover the value of, and a return on, that asset over the same period that the Companies would have depreciated the meters. In other words, the cost of existing meters to the Companies' customers does not change

⁹³ Malloy Exh. JPM-1 Appx. A-10.

⁹⁴ Hearing Video at 10:29:55 – 10:30:45.

⁹⁵ *Id.*

⁹⁶ Companies' Response to PSC 1-18.

between the AMS and non-AMS scenarios, making it erroneous to treat any portion of that cost as a cost of the AMS deployment.

Mr. Alvarez was therefore incorrect when he testified at hearing that the Companies should have counted all of the cost of retired meters as a cost of the AMS project, and should only have excluded their cost if the Companies did not intend to collect any of the retired meters' cost from customers.⁹⁷ To do so would be inconsistent with a marginal cost-benefit analysis. Indeed, if the Companies were proposing not to collect anything further regarding retired meters in the AMS-deployment scenario, it would be a benefit of AMS to customers, not neutral.

To be clear, that is not what the Companies are proposing to do; they are proposing in both scenarios to collect the value of, and a return on, the metering investments they have already made to serve customers. That approach is fully consistent with the regulatory compact. It is also fully consistent with accounting for the retired meters as a zero-cost and zero-benefit item in the AMS Business Case.

Finally, the Companies' approach to addressing the remaining net book value of meters retired in the course of an AMI deployment appears to be consistent with the Commission's treatment of such quantities in other recent AMI proceedings and approvals. For example, Duke Kentucky's cost-benefit analysis did not include the value of retired meters as a cost of the proposed deployment.⁹⁸ Though the Commission has noted the remaining book value of retired meters in other recent AMI deployment orders, it does not appear to have considered those values as costs of the deployment.⁹⁹ Instead, the Commission has noted that utilities must seek Commission approval regarding any regulatory assets and the related amortization periods the

⁹⁷ Hearing Video at 3:15:58 – 3:16:55.

⁹⁸ Case No. 2016-00152, Application (Apr. 25, 2016).

⁹⁹ *See, e.g.*, Case No. 2017-00419, Order at 6 (July 16, 2018).

utilities desire to establish and use regarding retired meters, which is what the Companies have stated they will do. When utilities have sought to establish regulatory assets for retired meter values, the Commission has routinely approved the requests.¹⁰⁰

3. Customers will receive AMS benefits

It is important to note that the Companies' customers will indeed receive the benefits of AMS. First, customers who save energy due to ePortal will receive the benefits of those savings monthly on their bills. Second, customers will receive operational savings and non-technical loss benefits through rates. They will receive those benefits either in the context of rate cases—whether initiated by the Companies or otherwise—or through increased periods between rate cases as savings created by AMS that enable the Companies to extend periods between rate cases. In addition, customers will receive some non-technical loss benefits between rate cases through the Companies' FAC mechanisms. Therefore, the Companies' customers will indeed receive AMS benefits.

The AG appears to believe that the Companies' AMS benefits are overstated because there is not perfect rate treatment, i.e., operational savings and non-technical loss benefits will not be instantaneously reflected in full in base rates.¹⁰¹ First, the Companies note that the Commission has not discounted benefit calculations in any other AMI application on that basis. Second, as noted above, customers will receive part of the benefit of non-technical loss reductions through the Companies' FAC mechanisms; changes in base rates are not needed for customers to receive those benefits. Third and finally, the Companies have stated with regard to

¹⁰⁰ See, e.g., *Request of Kenergy Corp. for Approval to Establish a Regulatory Asset in the Amount of \$3,884,717 Amortized Over a Ten (10) Year Period*, Case No. 2015-00141 Order (Aug. 31, 2015); *Request of Shelby Electric Cooperative for Approval to Establish a Regulatory Asset in the Amount of \$443,562.75 and Amortized the Amount Over a Period of Five (5) Years*, Case No. 2012-00102, Order (Apr. 16, 2012); *Filing of Taylor County Rural Electric Cooperative Corporation Requesting Approval of Deferred Plan for Retiring Meters*, Case No. 2008-00376, Order (Dec. 9, 2008).

¹⁰¹ Hearing Video at 10:26:04 – 10:26:22.

the base-rate applications they will file next month that they will seek regulatory-asset treatment for the AMS operating expenses in the test period, which will help ensure AMS operating costs better match AMS operational benefits in future rate cases.¹⁰²

4. Delaying AMS deployment will not improve benefits; rather, it will deprive customers of benefits for longer.

The Companies believe delaying AMS deployment would increase costs to customers and delay benefits. The Companies' meter-reading and field-services costs are going to increase beginning in 2019 when their current contracts for those services expire.¹⁰³ The Companies' current expectation is that those costs are going to increase by more than 60% over current levels, significantly more than the Companies assumed when creating their AMS Business Case in 2017.¹⁰⁴ In addition, the Companies' AMS costs consist largely of capitalized labor cost, which could also increase significantly if AMS deployment is further delayed.

Moreover, there is nothing to gain by delaying AMS deployment. In the absence of AMS, the Companies will incur between \$425 million and almost \$595 million of capital and operating cost related to continuing with non-AMS metering technology through 2040.¹⁰⁵ All of that investment and operating cost will result in no new benefits or capabilities for customers; it will merely maintain the status quo. And because the Companies will have to invest continually in replacement digital meters and IT systems to support them, delaying AMS deployment will not result in reaching a point where all the Companies' meter base is fully depreciated and can be retired with no book impact; that day is never coming. The only question is whether the Companies will have to spend between \$425 million and almost \$595 million for no incremental

¹⁰² Malloy Rebuttal at 4-5.

¹⁰³ Companies' Response to MHC Hearing Request No. 2 (July 31, 2018).

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

benefit through 2040, or whether the Companies will be permitted to invest in AMS to afford their customers real savings opportunities and empowerment through enhanced data, services, and potential tariff offerings, in addition to a more reliable distribution grid and better-informed storm restoration.

Indeed, the Commission recognized the wisdom of not delaying AMI deployment precisely to avoid needless investments in outmoded and obsolete technology in its recent order approving Cumberland Valley's AMI deployment. In that order, the Commission noted that delaying AMI deployment by just a year created more costs than benefits, in part because "Cumberland Valley would be required to place an order for replacement equipment well in advance of the October 2019 deadline for shipping new TSII equipment in order to have a sufficient inventory of necessary equipment if the deployment was delayed until July 2019."¹⁰⁶ The Commission correctly concluded, "To expend funds on spare equipment under these circumstances would not be prudent," and approved Cumberland Valley's AMI deployment without delay as reasonable.¹⁰⁷ The Companies respectfully submit the Commission should take the same approach in this proceeding.

5. Prolonging AMS deployment would create additional costs for customers with no resulting benefit.

Less than two years ago the Commission recognized the impracticability of incremental AMS deployment and the unnecessary costs it creates: "The Commission believes that the incremental deployment is impractical, because it would require Licking Valley to operate and maintain three separate metering systems for the indefinite future with existing workforce

¹⁰⁶ Case No. 2018-00056, Order at 12 (July 9, 2018).

¹⁰⁷ *Id.*

levels.”¹⁰⁸ The same is true for the Companies and their proposed AMS deployment. Consider the possibility of deploying AMS meters as existing meters come out of service. The Companies have no way to know where meters will come out of service next; rather, they are replaced as needed. To ensure AMS meters could be installed and be able to communicate anywhere across the Companies’ service territories would require making IT and communications-network investments of about \$130 million up front, which costs all customers would bear, but large-scale benefits would not arrive for years until most or all existing meters came out of service. In the interim, the Companies would continue to incur the costs of meter reading and field services on a large scale and have compromised ability to detect and address non-technical losses, and few customers would have the ability to use ePortal and create savings, all in addition to foregone reliability and system-restoration benefits.

Prolonging full deployment over a longer term of years would have largely the same effects. Particularly for customers at the end of an extended deployment, they would have been paying rates reflecting large-scale investment in AMS without the opportunity to have the enhanced data, services, and potential rate offerings other customers who had received AMS years earlier had been enjoying all the while. During that prolonged deployment, all customers would be burdened with operational costs and suboptimal non-technical loss savings that could have been avoided by a more rapid deployment.

In sum, the Companies believe the Commission was correct about the harm of incremental deployment as the Commission articulated it in the Licking Valley RECC proceeding. The Companies therefore respectfully ask the Commission to take the same position against unnecessarily prolonging AMS deployment in this proceeding.

¹⁰⁸ Case No. 2016-00077, Order at 8 (Aug. 29, 2016).

6. Fixed- and low-income customers will receive benefits from AMS.

The Companies believe that fixed- and low-income customers will receive significant benefits from AMS deployment that justify the cost for such customers. Although access to ePortal and responding by taking appropriate energy-saving measures is one way customers will benefit from AMS, there are many others that low- and fixed-income customers will receive, including reduced operational costs and non-technical losses, improved service-restoration times, potential new rate structures that might better serve such customers, and AMS-related features like usage and bill alerts requiring only a phone capable of receiving text messages. In addition, the Companies' most recent demand-side management and energy-efficiency application proposed to have the WeCare program, which provides weatherization and other energy-efficiency assistance to low-income customers, move from being one of the largest programs in the portfolio to being the largest single program in the residential portfolio by a wide margin.¹⁰⁹ The Companies believe AMS data could help the WeCare program be even more effective by using 15-minute interval data to better target efficiency measures with the greatest impact inside a customer's home. Therefore, though the Companies can understand that any bill increase is a challenge for low- and fixed-income customers, even a temporary peak bill increase of \$2.17 (and an additional \$1.10 for gas service),¹¹⁰ the Companies believe the other benefits of AMS and the benefits of AMS to the low-income-targeted WeCare program make AMS beneficial for all customers, including low- and fixed-income customers.

¹⁰⁹ Malloy Rebuttal at 57.

¹¹⁰ Malloy Rebuttal at 49.

II. The Commission Should Approve the Companies' Proposed Opt-Out Charges as Reasonable in Structure and Amount because They Are Cost-Based.

The Companies note that their 2016 AMS deployment proposal did not include opt-outs, which was consistent with Commission's stated preference in Case No. 2012-00428 and served the interest of maximizing AMS benefits for all customers.¹¹¹ But having heard from the participants in the 2016 rate cases and the AMS Collaborative, the Companies chose in this proceeding to propose cost-based opt-out charges.¹¹² The Companies believe their proposed opt-out charges are well supported and should help insulate other customers from costs created by opt-outs, consistent with the Commission's guidance regarding such charges in Case No. 2012-00428: "The Commission finds that any opt-out provision should require those customers that opt out to bear the cost related to that decision- through a one-time fee and/or a monthly charge, as appropriate."¹¹³ The Companies believe their proposed opt-out charges follow this guidance and provide accurate signals to customers considering opting out concerning the cost impacts of their choices, and do not artificially encourage or deter customers considering opting out.

The Companies note also that these charges can be revisited and reset in subsequent rate cases as the number of opt-outs becomes known and as the costs of opt-outs change.

Ultimately, the Companies will accept whatever reasonable opt-out charges the Commission prescribes. But it is important to note that any opt-out charges that are not cost-based will send customers inaccurate signals about the costs their choices are creating, could lead to more opt-outs than would otherwise occur, and would burden all other customers with a portion of opt-out costs that the Companies would still incur but not recover from opt-out customers. In addition, as the Commission has previously recognized, opt-outs reduce AMS

¹¹¹ Case No. 2012-00428, Order at 17 (Apr. 13, 2016).

¹¹² Huff at 12.

¹¹³ Case No. 2012-00428, Order at 17 (Apr. 13, 2016).

benefits for all customers.¹¹⁴ The Companies would ask the Commission to consider such impacts as it deliberates concerning the Companies' proposed opt-out charges.

Finally, the Commission should consider that opt-out customers will receive some benefits of AMS even if they choose not to have AMS meters. For example, opt-out customers will receive the benefits of AMS on operational savings and non-technical losses through base rates. In addition, opt-out customers could benefit from AMS through possibly improved service restoration times and better distribution system design and implementation over time, e.g., improved transformer placement and sizing as the Companies use AMS customer data to have a better view of transformer loading. In other words, though a small number of customers might choose to opt out of AMS, they will still receive benefits from the deployment, and it is appropriate that they pay some amount of opt-out charge in addition to their standard base rates to account for the additional cost opt-outs create.

III. Remote Service Switching Will Create Significant Benefits While Retaining Existing Customer Protections.

The evidence in the record shows that significant operational savings, i.e., more than \$99 million nominal, are associated with remote service switching ("RSS").¹¹⁵ Particularly when assuming operational cost increases in line with the Companies' current expectations based on recent RFI results, installing and enabling RSS provides more net benefits than not having RSS.¹¹⁶ Therefore, purely as a matter of likely costs and benefits in dollar terms, having and using RSS is beneficial.

But RSS is beneficial in more than purely economic terms. Many service disconnections and reconnections are not related to non-payment, but rather are for people moving in and out of

¹¹⁴ Case No. 2012-00428, Order at 17 (Apr. 13, 2016).

¹¹⁵ Malloy Exh. JPM-1 at 36; Companies' Response to MHC Hearing Request No. 2 Attachment 1 (July 31, 2018).

¹¹⁶ *Id.*

homes and businesses. Occasionally disconnections are necessary for safety reasons. The ability to make disconnections and reconnections safely, rapidly, and remotely are all benefits of RSS that the Companies have not attempted to quantify in terms of customer experience benefits in this proceeding.

Moreover, the ability to reconnect service remotely and rapidly is a benefit for all customers, regardless of the reason for the initial disconnection. If service is disconnected for non-payment, it is a benefit not just to the customer being quickly reconnected but to all customers to have that customer back on service. Again, this is a benefit the Companies did not quantify in terms of increased revenues or customer experience benefits, but it should not be overlooked.

Another benefit the Companies did not attempt to quantify but that arose at hearing is the potential to offer a prepayment program, which requires RSS capability.¹¹⁷ It is a topic that arose during discovery, and the Companies would be willing to evaluate the potential to offer such service if the Commission approves full AMS deployment.¹¹⁸ Any benefit arising from such an offering would add to the benefits the Companies have quantified.

Finally, as the Companies have repeatedly stated in this proceeding, they are fully committed to maintaining all current customer protections regarding disconnection.¹¹⁹ Though it is sometimes necessary, the Companies have no desire to disconnect customers, which is why the Companies extended more than half a million payment plans to their customers in 2017 alone.¹²⁰ It is also why the Companies are committed to working with customer advocates to implement RSS in a reasonable way and with adequate notice. The Companies want their customers to have

¹¹⁷ Hearing Video at 2:49:05 – 2:50:42.

¹¹⁸ Companies' Response to PSC 1-43.

¹¹⁹ *See, e.g.*, Lovekamp at 3-5.

¹²⁰ Hearing Video at 1:16:55 – 1:17:59.

the best possible customer experience, which is one reason why the Companies are proposing AMS, including RSS.

IV. The Companies Will Maintain Current Customer Privacy Protections.

The Companies take customer privacy seriously. That commitment will not change when AMS is approved. Indeed, the Companies committed at hearing not to sell individual customer data to third parties,¹²¹ which is already a commitment the Companies have made to customers in the privacy policy the Companies have publicly posted on their website for years.¹²²

In addition, the Companies remain committed to data security. The AMS solution the Companies have selected provides state-of-the-art data security in the AMS network, and the Companies will remain vigilant to protect all of their data, including customer data, after AMS is deployed.

Finally, the Companies remain committed to comply with all legal duties and obligations regarding disclosure of customer information. That includes disclosing customer information when required to do so by a court order, subpoena or other compulsory process, or by operation of law. In short, AMS deployment will not change the Companies' obligations to comply with the law.

V. AMS Will Provide Benefits the Companies Have Not Quantified

Perhaps the most promising aspects and greatest benefits of AMS deployment are those the Companies have not quantified and cannot foresee. Certainly the Companies will study and analyze AMS data as it becomes available to determine if possible new rate and service offerings would benefit their customers; the Companies have not attempted to quantify any benefits

¹²¹ Hearing Video at 1:59:11 – 1:59:16.

¹²² <https://lge-ku.com/privacy>.

resulting from such possible offerings because they lack the data to do so, which is the very data AMS will provide.

In addition, the Companies will enable customers to access their own usage information through ePortal in 15-minute increments and provide rate analysis tools that could enable them to save on their bills by moving to more cost-effective rates as they become available (and are already available under the Companies' RTOD rates). Making the Zigbee capability of AMS available to customers will allow those who desire to purchase Zigbee-enabled devices to have real-time access to their usage information to better use energy according to their preferences.

Beyond having more and better data, deploying AMS will aid in integrating customer-owned generating resources. As the costs of such resources decrease, it is reasonable to assume more customers will want to acquire them and connect them to the Companies' distribution grid. Having AMS deployed will aid that integration by helping the Companies understand which, if any, distribution system changes might be needed to accommodate the additional generation.

Finally, simply having information is valuable. Customers are accustomed to having detailed and instant access to information regarding all kinds of goods and services they use today. Today, if a wireless service customer wants to know how much data is left on a data plan for that billing cycle, the customer can check using an app or website. If a bank customer wants to know a bank balance at that moment, it is simple to check quickly and accurately, again using an app or website. Anyone with a computer or mobile device can access a world of information about nearly all kinds of goods and services nearly instantaneously. The proliferation of such devices and the increasing use of them indicate that people value access to information per se, even though the data itself often is not real-time data. Providing the same access to information to the Companies' customers regarding their utility service is therefore valuable in its own right,

and a service the Companies desire to provide. AMS will make that possible in a way the Companies' current metering system never will.

CONCLUSION

The evidence of record in this proceeding shows there is a need for the proposed AMS deployment to replace the Companies' obsolete and outmoded metering system, which consists mostly of electromechanical meters that are no longer manufactured and of non-communicating digital meters that must be manually read. The evidence further shows the AMS deployment will not result in wasteful duplication because the Companies have carefully considered and studied this technology for nearly two decades, and have presented this proposal only when they were confident it would be beneficial. The evidence also shows the AMS deployment will produce substantial net benefits, and will enable the Companies to offer new services and rate options not possible with existing metering. It will empower customers with enhanced data, and will aid in system reliability and service restoration. In sum, it meets and exceeds all the CPCN standards the Commission has articulated and applied to electric, gas, and water utilities of all sizes and serving customers across the Commonwealth.

The Companies therefore respectfully ask the Commission to approve the Companies' application in this proceeding as proposed and without condition. In so doing the Commission will choose a future for the customers of Kentucky's flagship utilities that will result in customer empowerment, significant savings opportunities, better customer service, and improved service restoration, just to name a few of the categories of benefits customers will receive. The Companies look forward to joining the numerous other Kentucky electric, gas, and water utilities already using this technology for their customers' benefit.

Dated: August 10, 2018

Respectfully submitted,



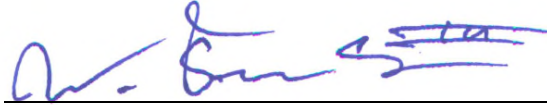
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CERTIFICATE OF COMPLIANCE

This is to certify that Louisville Gas and Electric Company and Kentucky Utilities Company's August 10, 2018 electronic filing of their Post-Hearing Brief is a true and accurate copy of the same document being filed in paper medium; that the electronic filing has been transmitted to the Commission on August 10, 2018; that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding; and that an original and six copies in paper medium of the Post-Hearing Brief are being mailed by first class U.S. Mail, postage prepaid, to the Commission on August 10, 2018.



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and Kentucky Utilities Company*