

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

In the Matter of:

The Application of Duke Energy Kentucky, )  
Inc., for (1) a Certificate of Public )  
Convenience and Necessity Authorizing )  
the Construction of an Advanced Metering ) Case No. 2016-00152  
Infrastructure; (2) Request for Accounting )  
Treatment; and (3) All Other Necessary )  
Waivers, Approvals, and Relief. )

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**APPLICATION**

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Now comes Duke Energy Kentucky, Inc. (Duke Energy Kentucky or the Company), pursuant to KRS 278.020, 807 KAR 5:001, Sections 14 and 15, and other applicable law, and hereby respectfully requests from the Kentucky Public Service Commission (Commission) an Order granting a Certificate of Public Convenience and Necessity (CPCN) for approval to replace and upgrade its existing metering infrastructure by constructing and installing a more advanced system of digital technologies including Advanced Metering Infrastructure (AMI) for its electric and combination electric and natural gas operations and an Automated Meter Reading (AMR) infrastructure for its gas only operations (Metering Upgrade). The Company also requests establishment of equipment depreciation rates for the new metering equipment and approval of the creation of a regulatory asset related to the retirement of existing electric metering equipment, associated inventory and inventory of existing gas modules.

Finally, the Company also requests any other waivers, approvals, and relief deemed necessary to implement the Metering Upgrade and to achieve the anticipated

functionality for remote meter reading and service orders. These waivers, to the extent applicable, could include, but are not limited to the following:

- 807 KAR 5:006(b)(5), which would otherwise require Duke Energy Kentucky to obtain a “manual meter reading” at least once during a calendar year, or otherwise receive confirmation that obtaining a monthly remote meter reading constitutes a manual reading in satisfaction of the regulation; and
- 807 KAR 5:006, Section 14, which requires a utility to inspect the condition of its meter and service connections before making service connections to a new customer so that prior or fraudulent use of the facilities shall not be attributed to the new customer.

The AMI/AMR technology to be deployed through the Metering Upgrade is consistent with and addresses the interests of billing accuracy and fraud detection referenced in those regulations, respectively.

As discussed below, and in the testimony supporting this Application, the Metering Upgrade technology selected has many positive benefits for both customers and Duke Energy Kentucky in terms of enhanced metering functionality, capabilities, operational efficiencies, revenue capture (*e.g.* theft detection capability) and cost savings. The Metering Upgrade will allow the Company to obtain regular monthly actual meter readings and on demand readings through electronic remote access.

In support of this Application, Duke Energy Kentucky respectfully states as follows:

## **Introduction**

1. Pursuant to 807 KAR 5:001, Section 14(2), Duke Energy Kentucky is a Kentucky corporation originally incorporated on March 20, 1901, in good standing, and a public utility as that term is defined in KRS 278.010(3), and, therefore, is subject to the Commission's jurisdiction. Duke Energy Kentucky is engaged in the business of furnishing natural gas and electric services to various municipalities and unincorporated areas in Boone, Bracken, Campbell, Gallatin, Grant, Kenton, and Pendleton Counties in the Commonwealth of Kentucky.

2. Duke Energy Kentucky's business address is 139 East Fourth Street, Cincinnati, Ohio 45202. The Company's local office address in Kentucky is Duke Energy Envision Center, 4580 Olympic Boulevard, Erlanger, Kentucky 41018.

3. Copies of all orders, pleadings and other communications related to this proceeding should be sent to:

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## **Background**

4. AMI is an overarching advanced digital metering architecture providing automated two-way communication between the utility meter and the utility's back-office systems for the purpose of measuring, collecting, and analyzing energy usage data. This advanced metering and communication system is capable of recording customer interval energy usage data and transmitting the data over an advanced communication network to a centralized data management system on a daily or ad hoc basis. The customer usage

data is made available to the utility as well as individual customers on a frequent and timely basis so to enable customers to proactively monitor and control their electricity usage. As part of the Metering Upgrade, Duke Energy Kentucky will install communication systems for its electric distribution systems and combination electric and natural gas systems to implement an integrated, digital network – much like a computer network – to produce operating efficiencies, enhance customer and utility information and communications, develop innovative services, and improve reliability.

5. AMR, as the name implies, consists of digital metering technology that enables some degree of remote metering capability. AMR is limited to only one-way communication between the meter and the utility's signal-receiving devices. The utility receives energy usage data when driving (or walking) close enough to the meter to receive it remotely, and then the data is downloaded from the reading device into the utility's back office systems. The utility retrieves a scalar read from the meter, which measures only the amount of energy consumed since the last time the meter information was retrieved, as opposed to interval usage data. AMR metering technology will allow Duke Energy Kentucky to obtain remote meter readings for its natural gas only customers on a monthly basis through a drive-by system, without having to enter homes to access interior meters.

6. Following the Commission's order in Duke Energy Kentucky's last electric rate case, Case No. 2006-00172, Duke Energy Kentucky began deploying an early-generation AMI solution based on Power Line Carrier (PLC) technology in 2007. The Company also installed drive-by communication modules to some of its gas-only meters to gain experience with this technology. The PLC technology the Company

deployed uses the electrical distribution system as the communication medium for a Two-Way Automatic Communication System (TWACS) between the meter and the utility's back office systems, allowing the Company to read meters remotely. Rather than proceed with a full system-wide rollout, Duke Energy Kentucky decided to conduct this PLC system installation as a pilot program, limiting the installations, to gain information about the technology before proceeding with a full scale, system-wide roll out. At the same time, Duke Energy Kentucky's parent corporation, Duke Energy Corp., began analyzing other technologies that enabled greater opportunities for operational enhancements than simply remote meter reading. As part of Duke Energy Kentucky's initial PLC pilot, the Company deployed approximately 13,000 gas modules and approximately 39,000 electric advanced meters in Northern Kentucky. In addition, approximately 12,000 gas-only customers received the gas AMR modules. The technologies deployed under the PLC metering pilot are still in use today.

7. Duke Energy Kentucky's experience with the TWACS PLC AMI technology, while positive, did not afford the Company, as a combination electric and natural gas utility, or its customers the level of benefits or opportunities that are available with AMI technologies in the market today and anticipated through the Metering Upgrade. The PLC technology did not allow for remote connection and disconnection. Further, Duke Energy Kentucky learned that the PLC technology was impractical for retrieval of interval electric usage data or daily data collection, as compared to more advanced systems, due to bandwidth limitations in transmitting such data across power lines. The Company also discovered that the TWACS PLC technology significantly limited the ability to retrieve meter readings during circuit re-routing events such as

substation maintenance, outages, or seasonal switching situations. Circuit re-routing often resulted in lost data, requiring manual or estimated meter reading, and created delays due to reconnections of equipment communication paths. Further, the PLC technology presented limitations for natural gas meter reading in that the gas modules required pairing to a specific electric meter. And when natural gas meters were changed out or the modules replaced, the connection to the electric meter was often lost, thereby also requiring estimated natural gas readings or manual or drive-by data retrieval. The Metering Upgrade proposed in this filing does not have those same challenges and is similar to what is being deployed in other Duke Energy jurisdictions.

8. In order for the Company to offer its customers innovative programs and services to better control their energy consumption, Duke Energy Kentucky must upgrade its metering infrastructure through an investment in technologies that can support such development. The Metering Upgrade enables such opportunities.

#### **Metering Upgrade and Deployment**

9. To better serve its customers, Duke Energy Kentucky seeks Commission approval to implement an advanced digital Metering Upgrade across its entire utility service territory footprint. The Metering Upgrade will be accomplished through two targeted metering solutions to maximize the efficiencies that can be achieved with advanced digital metering in a combination electric and natural gas utility. With the exception of some large commercial and industrial customers that already have advanced meters, all active Duke Energy Kentucky electric customers, including both electric-only and electric and gas combination customers (Combination Customers), will receive an AMI solution that is capable of: 1) two-way communications between the meter and the

utility's back office systems; 2) more advanced data collection to enable new customer experience product and service developments; and 3) potential for additional future customer-focused enhancements.<sup>1</sup> The Metering Upgrade will consist of a new AMI electric meter for all electric customers who do not already have a similar advanced meter already, and for Combination Customers an additional AMI gas module attached to their existing natural gas meter.<sup>2</sup> Installing an AMI meter for electric customers will allow the Company to provide customers with their hourly interval usage data on a daily basis, so that customers can better manage their electric consumption. Similarly, the AMI gas module attached to their existing gas meter will enable the Company to retrieve daily gas usage data, and then share the data with the customer on a daily basis as well. The AMI electric meter technology will have remote connection and disconnection capability, enabling the Company to more quickly respond to customer service orders and disconnection or reconnection requests. It will also enable the Company to conduct off-cycle readings and verifications of readings for customers who have questions about their energy bills.

10. The second piece of the Metering Upgrade solution is intended for Duke Energy Kentucky's more than 20,000 natural gas-only customers. These customers will receive an advanced AMR gas module that will be attached to their existing natural gas meter. The AMR solution will enable one-way meter reading communication to the utility through a drive-by meter reading device. Converting to an AMR solution for its natural gas-only customers will allow the Company to maximize its ability to reduce

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<sup>1</sup> The Company's Metering Upgrade deployment does not include distribution automation or integrated volt/VAR control.

<sup>2</sup> Presently approximately 1,000 large commercial and industrial customers already have interval metering devices due to the rate structure under which they receive service. Duke Energy Kentucky is not anticipating replacing those meters at this time.

overall meter reading expenses for all customers. Because Duke Energy Kentucky does not have electric infrastructure in place to serve these gas-only customers, the communication routes necessary to effectuate AMI technologies cannot be installed. The AMR devices are a better and more efficient alternative than manual monthly reading.

11. Duke Energy Kentucky has selected Itron technology as the metering solution for AMI and AMR. The Itron OpenWay AMI technology is state-of-the-art and consists of three basic components: 1) advanced meters; 2) two-way communication network; and 3) back office systems. This new technology solution will allow the Company to develop and provide enhanced customer services by providing the infrastructure to give customers increased control over their consumption, affording greater and more contemporaneous access to energy usage information, enable the implementation of flexible payment options, and support additional communication of outages.

12. Once implemented, customers will experience advanced metering benefits in several ways, including that customers with certified AMI meters will be able to see their energy usage data online via the Duke Energy Kentucky customer portal. The new technology will allow Duke Energy Kentucky to conduct remote meter readings and, for electric service, provide more customer convenient remote connections and disconnections without the customer having to schedule an appointment and the Company having to deploy service technicians and a service truck. This will result in quicker response times for customers to establish new electric service and to discontinue service through cancellations or in non-payment situations. The near real-time access to customer energy usage information will allow Duke Energy Kentucky to perform off-



cycle meter reads for its electric only and Combination Customers, in a quick and economic fashion. This, in turn will derive operations and maintenance savings once fully implemented.

13. The capability to conduct remote meter readings and service orders will also provide a safety benefit to the Company's employees. In the utility industry, the customer premise work necessary to conduct meter reading and other meter-related service orders historically has some of the highest employee safety and injury incident rates. Manual meter reading presents an inherent safety concern for Company employees by way of risk of recordable injuries and vehicle accidents. Any time an employee steps foot on a customer's premises they are exposed to unknown and oftentimes unavoidable risks and potential hazards. Advanced remote meter reading capability mitigates those risks. Based upon experience in other jurisdictions, Duke Energy Kentucky anticipates a noticeable reduction in recordable incidents once the Metering Upgrade is fully deployed.

14. Duke Energy Kentucky will install approximately 143,000 electric AMI meters and approximately 82,500 gas AMI modules (for Combination Customers). In addition, approximately 20,500 gas-only customers will receive drive-by AMR technology. Duke Energy Kentucky has approximately 79,000 Combination Customers. Proceeding with the natural gas conversion to AMI along with the electric conversion will allow the Company to achieve additional savings by eliminating the need to send an actual meter reader to the customer premises for just natural gas meter reading.

15. The deployment for this Metering Upgrade solution across Duke Energy Kentucky's gas and electric territory will take approximately two years to complete once approved by the Commission. The Company anticipates that upon approval, planning

and procurement will take approximately three to six months with full meter deployment being achieved in approximately 18 months.

16. The AMI solution is an enabling investment for Duke Energy Kentucky to bring new programs and services to its residential electric customers, including but not limited to, an ability to choose a billing due date, more flexible payment options, and various usage alerts. Additionally, the installation of this new technology will eliminate the ongoing challenges and customer inconvenience experienced on a monthly basis in obtaining readings of interior customer meters.

17. Duke Energy Kentucky has 64,883 interior meters (33,666 electric and 31,217 natural gas) in its system. Nearly 50,000 of those interior meters are standard electro-mechanical meters that require monthly manual reading. Converting all interior meters to an AMI or AMR solution will reduce the cost, access challenges, and safety issues that the Company experiences on a monthly basis to obtain actual meter readings. Further, the interior meter conversions will greatly reduce the inconvenience to those customers who must either allow the Company to maintain its own copy of a premises key or have some other arrangement to allow Duke Energy Kentucky interior access to its metering equipment to obtain a monthly meter reading or disconnect or reconnect electric service.

18. The estimated cost for the full deployment of this solution is approximately \$49 million. The electric portion of the deployment capital and O&M costs is approximately \$38 million. The cost of the installation of the gas modules on the existing natural gas meters is approximately \$11 million.

### Depreciation Expense

19. In this application, Duke Energy Kentucky is requesting that the Commission permit the Metering Upgrade technologies to be depreciated at an accelerated rate consistent with other Commission-approved advanced metering installations and faster than the Company's existing metering infrastructure.

20. Duke Energy Kentucky's current depreciation rates for electric and gas metering equipment were determined several years ago as part of prior electric and natural gas rate cases, respectively. The Company's last electric base rate case was Case No. 2006-00172,<sup>3</sup> which established the average service life for electro-mechanical meters at 28 years.<sup>4</sup> The Company's last base natural gas rate case was Case No. 2009-00202,<sup>5</sup> which established the average service life for gas mechanical meters at 37 years, based upon a 2005 depreciation study.<sup>6</sup>

21. As digital technology improves and becomes less expensive, manufacturing of traditional electro-mechanical meters is becoming discontinued. As such, a conversion to a more advanced metering system and technology is a necessary and prudent investment for the Company on behalf of its customers. Similarly, the traditional life of metering assets is evolving as devices become more reliant upon digital electronic frameworks. Industry data show that the average service life for these more advanced devices is shorter than the older and limited mechanical technology.

22. The overall shorter useful lives for the Metering Upgrade is due to the ever-changing and rapid evolution of digital technologies and electronic nature of the

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<sup>3</sup> *In the Matter of the Application of the Union Light Heat and Power Company D/B/A Duke Energy Kentucky for an Adjustment of Electric Rates*, Case No. 2006-00172, Order December 21, 2006.

<sup>4</sup> *Id.* Stipulation, Attachment 2.

<sup>5</sup> *In the Matter of the Application of Duke Energy Kentucky, Inc. for an Adjustment of Natural Gas Rates*, Case No. 2009-00202, Order December 29, 2009.

<sup>6</sup> *See Id.* December 29, 2009 Order, Appendix A.

devices that run on battery technology. The batteries that power these devices do not have a perpetual life. And simply replacing batteries or refurbishing and reinstalling devices is not a cost-effective strategy as simply replacing the entire device.

23. Based upon current industry trends, the Company has determined that the estimated depreciable life of the electric AMI meters is approximately fifteen years. This determination is based upon the estimated useful life, including battery life of these devices. Additionally, the Company is recommending a depreciable life for the natural gas AMI and AMR device modules of approximately nine years to coincide with the Company's residential meter replacement schedule. This shorter depreciable life for the gas modules is driven by the operational efficiency created by aligning the replacement of the gas module with the nine-to-ten year replacement/testing schedule of the residential natural gas meters in accordance with Commission regulations. Duke Energy Kentucky replaces its residential natural gas meters every approximately every nine to ten years as part of its inspection and testing requirements under 807 KAR 5:022, Section 8. To perform this testing, Duke Energy Kentucky removes the gas meter from field service and replaces it with another meter in the field to maintain the customer's gas service. The removed meter is then brought back to the Company's facility for testing in a temperature controlled environment. That meter may or may not be re-deployed based upon age and cost of refurbishment versus purchase of a new meter. Going forward, all gas meters purchased and installed will come already equipped with the AMI/AMR modules making removal and redeployment of existing AMI/AMR modules inefficient and costly.

24. As such, the Company requests that upon installation, the expected useful life for depreciation of these new electric meters will be fifteen years and nine years for the AMI/AMR gas modules. Because the Metering Upgrade devices were not included in the Company's most recent depreciation study<sup>7</sup> or as part of its last base rate proceeding(s),<sup>8</sup> the Company is requesting authority to use a 6.67 percent depreciation rate for the electric meters and 11.11 percent for the natural gas module devices once installed. Duke Energy Kentucky will submit a new depreciation study as part of its next electric and natural gas base rate proceeding(s) that supports this calculation and the Commission will be able to review all of the Company's costs at that time.

25. The use of accelerated depreciable lives for the AMI/AMR devices is consistent with how the Commission has treated depreciation of these advanced metering devices for other Kentucky utilities.<sup>9</sup>

#### **Request for Certificate of Public Convenience and Necessity**

26. Duke Energy Kentucky is requesting a CPCN pursuant to KRS 278.020 and 807 KAR 5:001, Section 15, for its Metering Upgrade initiative and proposes to implement the metering infrastructure upgrade for the reasons set forth above.

27. The Metering Upgrade will not result in a wasteful duplication of facilities. Duke Energy Kentucky will be replacing existing electro-mechanical metering

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<sup>7</sup> See, *Duke Energy Kentucky, Inc. Depreciation Study and Summary in Response to PSC Order*, Case No. 2006-00172, (December 11, 2013).

<sup>8</sup> See e.g., *In the Matter of the Application of the Union Light, Heat and Power Company D/B/A Duke Energy Kentucky for an Adjustment of Electric Rates*, Case No. 2006-00172; *In the Matter of the Application of Duke Energy Kentucky, Inc. for an Adjustment of Rates*, Case No. 2009-00202.

<sup>9</sup> See e.g., *In the Matter of the Application of Kenergy Corp. for an Order Issuing a Certificate of Convenience and Necessity to Install an Automated Metering and Infrastructure System*, Case No. 2014-00376, (Order at 3) (February 24, 2015); *In the Matter of the Application of Taylor County Rural Electric Cooperative Corporation for and Adjustment of Rates*, Case No. 2012-0023, (Order at 5)(March 26, 2012); *In the Matter of the Application of South Kentucky Rural Electric Cooperative for an Adjustment of Rates*, Case No. 2011-00096, (Order at 18-19)(March 30, 2012).

equipment along with out-of-date and incompatible automated meters and natural gas modules implemented as a pilot program that have limited technological capability with new and state of the art advanced metering systems. Duke Energy Kentucky will also install gas communication modules to existing natural gas meters to enable remote communication of a customer's natural gas consumption to the Company. The AMI devices will enable Duke Energy Kentucky to better serve its customers by providing more efficient access and timely energy usage data, as well as the capability to use this information to bring robust and innovative programs and service offerings to its Kentucky residential electric customers. These new programs and services are simply not possible with the current mechanical metering technologies in place.

28. In accordance with 807 KAR 5:001 Section 12(2)(a)-(i). Duke Energy Kentucky is filing the following information in Exhibit 1, which is incorporated herein and made a part of this Application filed in this proceeding:

<b><u>Exhibit 1</u></b> <b><u>Page</u></b>	<b><u>Description</u></b>	<b><u>807 KAR 5:001</u></b> <b><u>Section Reference</u></b>
	Financial Exhibit	12(2)
1	Amount and kinds of stock authorized	12(2)(a)
1	Amount and kinds of stock issued and outstanding	12(2)(b)
1	Terms of preference or preferred stock	12(2)(c)
1	Brief description of each mortgage on property of Duke Energy Kentucky	12(2)(d)
1-2	Amount of bonds authorized and issued and related information	12(2)(e)
2	Notes outstanding and related information	12(2)(f)

2-3	Other indebtedness and related information	12(2)(g)
3-4	Dividend information	12(2)(h)
5-6	Detailed Income Statement and Balance Sheet	12(2)(i)

29. In accordance with Section 15(2)(a), the Application and supporting testimony provide the evidence to show that the Metering Upgrade is required by public convenience or necessity. The Metering Upgrade will allow Duke Energy Kentucky to continue to provide safe, reliable, and reasonable electric and natural gas service to its customers and enable operational efficiencies, greater customer convenience, greater customer control over consumption through access to information, and enhanced reliability technologies.

30. In accordance with Section 15(2)(b), regarding the filing of franchise agreements, the Company states that it has previously filed with the Commission the applicable franchises from the proper public authorities. Additionally, to the extent a local city or municipality requires the Company obtain a construction permit, the Company will follow such local regulations and obtain any necessary local permits prior to beginning any work. Duke Energy Kentucky is not aware of any additional permits that will be necessary to complete construction.

31. In accordance with Section 15(2)(c), which requires the Company to provide a full description of the proposed location, route, or routes, including a description of the manner in which the facilities will be constructed, Duke Energy Kentucky respectfully states that the Metering Upgrade will be implemented throughout the Company's five-county electric and seven-county natural gas service territory. Exhibit 2 includes a map of the Company's service territory that depicts the areas that

will receive electric metering upgrades, combination electric and gas metering upgrades, and gas-only metering upgrades. Because the Company's proposal is applicable only in the Company's service territory, the Metering Upgrade will not compete with any other public utilities, corporations, or persons.

32. In accordance with Sections 15(2)(d)(1)-(2), requiring maps showing the location of facilities and plans and specifications and drawings of the proposed plant, equipment, and facilities, Duke Energy Kentucky respectfully states that Exhibit 2 contains a map of the Company's service territory that includes the construction plan of implementation of the Metering Upgrade solution. Duke Energy Kentucky respectfully states that Exhibits 3 and 4 contain specifications of the electric meters and natural gas modules to be installed, respectively. Because the Company's proposal is applicable only in the Company's service territory, the Metering Upgrade will not compete with any public utilities, corporations, or persons. Exhibit 5 to this Application contains a diagram depicting the interaction of the devices (meters, modules, routers, back office systems, etc.) being deployed as part of the Metering Upgrade installations.

33. In accordance with Section 15(2)(e), the Company states that it proposes to finance the construction through continuing operations and debt instruments, as necessary.

34. In accordance with Section 15(2)(f), the Company states that the total estimated cost of the initial construction for the Metering Upgrade is approximately \$49 million. The estimated annual ongoing cost of operation of the Metering Upgrade once completed is expected to be approximately \$1.2 million (capital and operations and maintenance (O&M)).



35. Consistent with the Commission's Order in Case No. 2008-00408, the Company continuously evaluates opportunities for energy efficiency and demand side management (DSM) to meet its resource needs.<sup>10</sup> However, since this case is not intended to add a new source of electric supply, but rather to make certain that the Company continues to provide customers with opportunities for greater control over their electricity consumption and for the Company to continue to offer safe, reliable, and reasonable electric and natural gas service, energy efficiency and DSM consideration are not directly applicable to this proceeding. However, once the Metering Upgrade deployment is completed, the new technology will enable the development of new and innovative programs and services that allow residential electric and Combination Customers to more efficiently consume energy. The Metering Upgrade will also become a platform technology for the development of potential programs and services that could also benefit customers in the future.

36. Duke Energy Kentucky respectfully states that the Metering Upgrade is needed to respond to growing customer expectations and desires for greater control over their energy consumption and to foster customer convenience through reducing the need for Duke Energy Kentucky to enter the customer property or premises for monthly meter readings and connections and disconnections of electric service. The Metering Upgrade will allow Duke Energy Kentucky to manage its ever growing costs of obtaining monthly manual meter readings and will not result in a wasteful duplication of facilities. The Metering Upgrade is intended to replace meters that are not capable of remote meter reading and implement enabling technologies to offer Duke Energy Kentucky customers

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<sup>10</sup> *In the Matter of the Consideration of the New Federal Standards of the Energy Independence and Security Act*, Case No. 2008-00408, (Order at p.18) (July 24, 2012).

new and innovative programs and services and potential future pricing opportunities to better manage their electric consumption.

**Request for Accounting Authority to Defer certain costs**

37. Duke Energy Kentucky respectfully requests authority to create a regulatory asset in the amount of approximately \$9.7 million for the remaining undepreciated book value of electro-mechanical meters and the limited number of now obsolete automated metering equipment installed as part of the Company's pilot between 2007 and 2008. This includes approximately \$9 million in net book value of electric meters currently in service and approximately \$0.7 million in gas and electric inventory. In its next rate case, Duke Energy Kentucky will propose a reasonable period of time to amortize these deferred amounts and recover such costs over a reasonable period.

38. Pursuant to KRS 278.220, the system of accounts "for electric companies shall conform as nearly as practicable to the system adopted or approved by the Federal Energy Regulatory Commission (FERC)." FERC requires the use of a systematic and rational depreciation methodology by all utilities subject to its jurisdiction, including Duke Energy Kentucky.<sup>11</sup> Upon replacement, and absent an approved regulatory asset, Duke Energy Kentucky will have to write-off the cost of its existing meters and the associated accumulated depreciation. Without the proposed accounting treatment, Duke Energy Kentucky will incur a one-time negative adjustment of approximately \$10 Million to its income statement that will negatively impact the Company's financial position. Duke Energy Kentucky believes that this adjustment should not be expensed in a single year because the meters at issue were accumulated over a period of years.

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<sup>11</sup> See Federal Energy Regulatory Commission, Order 618, Docket No. RM99-7-000, Depreciation Accounting, 65 Fed. Reg. 47, 664-47, 668 (July 27, 2000).

39. A regulatory asset is created when a utility is authorized to capitalize an expenditure that under traditional accounting rules would be recorded as a current expense. The reclassification of an expense to a deferred asset allows the utility the opportunity to request recovery in future rates of the amount capitalized. The authority to establish regulatory assets arises out of the Commission's plenary authority to regulate utilities under KRS 278.040 and to "establish a system of accounts to be kept by utilities subject to its jurisdiction...and may prescribe the manner in which such accounts shall be kept."<sup>12</sup>

40. Utilities must obtain Commission approval for accounting adjustments before establishing any expense as a new regulatory asset. Specifically, the Commission stated in Case No. 2001-00092, "[t]herefore, the Commission finds that in the future, ULH&P shall formally apply for Commission approval before accruing a cost as a deferred asset, regardless of the rate-making treatment that the Commission has afforded a similar cost in previous rate case proceedings."<sup>13</sup>

41. The Commission has exercised its discretion to approve regulatory assets where a utility has incurred: (1) an extraordinary, nonrecurring expense which could not have reasonably been anticipated or included in the utility's planning; (2) an expense resulting from a statutory or administrative direction; (3) an expense in relation to an industry sponsored initiative; or (4) an extraordinary or nonrecurring expense that over

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<sup>12</sup> KRS 278.220.

<sup>13</sup> *In the Matter of Adjustment of Gas Rates of The Union Light, Heat and Power Company*, Case No. 2001-00092 (Final Order) (Ky. P.S.C., Jan. 31, 2002).

time will result in a saving that fully offsets the cost.<sup>14</sup> In exercising discretion to allow the creation of a regulatory asset, the Commission's overarching consideration has been the context in which the regulatory asset is sought to be established and not necessarily the specific nature of the costs incurred.<sup>15</sup>

42. Duke Energy Kentucky's request to create regulatory assets for the retirement of electro-mechanical meters, the obsolete automated metering solution pilot meters, and metering inventory satisfies the criteria because the requested regulatory assets would represent extraordinary or non-recurring expense that over time will result in a savings that fully offsets the costs.

43. The primary utility cost savings achieved through the Metering Upgrade is the ability to eliminate monthly meter reading expense attributed to deploying personnel on a daily basis to manually read each and every gas and electric meter during a billing cycle. Throughout each month, Company meter technicians attempt to manually read every electric and gas meter in the Company's service territories. And for Combination Customers, a single meter reader is deployed to read both customer meters. In order to

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<sup>14</sup> See *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for an Order Approving Accounting Practices to Establish a Regulatory Asset Related to Certain Replacement Power Costs Resulting from Generation Forced Outages*, Case No. 2008-00436 (Final Order) (Ky. P.S.C., Dec. 23, 2008); *In the Matter of the Application of Louisville Gas and Electric Company for an Order Approving the Establishment of a Regulatory Asset*, Case No. 2008-00456, (Final Order) (Dec. 22, 2008); *In the Matter of the Application of Kentucky Utilities Company for an Order Approving the Establishment of a Regulatory Asset*, Case No. 2008-00457, (Final Order) (Ky. P.S.C., Dec. 22, 2008); *In the matter of the Joint Application of Duke Energy Kentucky, Inc., Kentucky Power Company, Kentucky Utilities Company and Louisville Gas and Electric Company for an Order Approving Accounting Practices to Establish Regulatory Assets and Liabilities Related to Certain Payments Made to the Carbon Management Research Group and the Kentucky Consortium for Carbon Storage*, Case No. 2008-00308, (Final Order) (Oct. 30, 2008); *In the Matter of the Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for an Order Approving Proposed Deferred Debits and Declaring the Amortization of the Deferred Debits to be Included in Earnings Sharing Mechanism Calculations*, Case No. 2001-00169, (Final Order) (Dec. 3, 2001).

<sup>15</sup> *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for an Order Approving Accounting Practices to Establish a Regulatory Asset Related to Certain Replacement Power Costs Resulting from Generation Forced Outages*, Case No. 2008-00436 (Final Order) (Dec. 23, 2008).

maximize the savings available to customers through this Metering Upgrade, Duke Energy Kentucky has developed a solution that will encompass its electric, natural gas, and Combination Customers.

44. Put another way, deploying an electric-only solution would not allow Duke Energy Kentucky or its customers to obtain the maximum benefits of remote meter reading through cost reduction and operational efficiencies because the Company would still incur substantially the same meter-reading costs to manually read every gas customer meter. Therefore contemporaneously deploying a natural gas automated reading solution is prudent and reasonable.

45. The most effective solution for both electric-only customers and Combination Customers is a deployment of a new AMI metering solution that allows two-way communication with the meter and the utility's back office systems. This will allow the Company to perform remote reconnects and disconnects, perform off-cycle meter reading, and provide near real-time interval energy usage data to electric customers. This functionality will be achieved through a total meter replacement and upgrade solution. Similarly, the most effective deployment for natural gas only customers is an AMR drive-by solution. This AMR deployment will only require installation of new gas module devices on existing gas meters and not wholesale gas meter replacements. The costs for the Metering Upgrade will qualify as a capital expense for accounting purposes.

46. So not to unfairly and unnecessarily harm Duke Energy Kentucky's financial standing during the deployment phase of the Metering Upgrade, Duke Energy Kentucky is requesting authority to create the regulatory asset for the retired and replaced

electric meters and associated inventory and existing gas module inventory and to defer this expense and to amortize the asset over a reasonable period to be determined in a future base rate proceeding. This deferral is a key component of the Metering Upgrade initiative so to not unfairly harm Duke Energy Kentucky as it seeks to implement strategies to operate more efficiently and provide new programs to its customers. The achievable savings and benefits from the Metering Upgrade, as demonstrated in the testimony filed in support of this Application, exceed the expenses associated with the deployment.<sup>16</sup> Duke Energy Kentucky further states that its request in this regard is similar to others granted by the Commission for similar advanced metering deployments.<sup>17</sup>

47. Duke Energy Kentucky proposed the following entry to retire the meters replaced as part of the proposed Metering Upgrade:

Debit FERC Acct. 108 Accumulated Depreciation	\$3,570,183
Debit FERC Act 182.2 Unrecovered Plant	\$9,623,062
Credit FERC Plant Acct. 101 (FERC Plant Acct. 370 Meters)	\$12,518,600
Credit FERC Acct. 154 Inventory	\$674,645

#### **Requests for Waivers**

48. Duke Energy Kentucky respectfully requests that the Commission grant any waivers and approvals necessary to construct, install, and implement the Metering Upgrade for its gas and electric customers as described herein. Such waivers may include, but are not limited to, and to the extent determined by this Commission as

<sup>16</sup> Exhibit 8.

<sup>17</sup> *In the Matter of the 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. 2015-0014,1 (Order at 3); (August 31, 2015); *In the Matter of the Request of Shelby Energy Cooperative for Approval to Establish a Regulatory Asset in the Amount of \$443,562.75 and Amortize the Amount Over a Period of Five (5) Years*, Case No. 2012-00102, (Order at 3); (April 16 2012).

necessary, waiver of 807 KAR 5:006 Section 7(b)(5) regarding frequency of meter reading.

49. Duke Energy Kentucky respectfully submits that the Metering Upgrade, once implemented throughout the Company's entire electric and natural gas service territories, will allow the Company to obtain actual readings of customer meters each and every month and thereby reduce the number of estimated readings and customer-derived meter readings. To the extent this regulation could be interpreted as requiring Duke Energy Kentucky to manually read a meter at least once a year, the Company respectfully requests a waiver of such a requirement. One of the primary benefits of this AMI technology is the ability to obtain remote meter readings on a monthly and, when necessary, more frequent basis, thus eliminating the cost of monthly manual meter reads. If the Company were required to continue a manual reading schedule, even if annually, the costs would reduce the economics of the Metering Upgrade.

50. Duke Energy Kentucky is also seeking any waivers the Commission may deem necessary so to enable the functionality of remote connection and disconnection of electric service once the Metering Upgrade is completed. This would include, but is not limited to 807 KAR 5:006, Section 14, requiring a utility to inspect the condition of its meter and service connections before making service connections to a new customer so that prior or fraudulent use of the facilities shall not be attributed to the new customer.

51. Remote disconnection and advanced theft detection provided by AMI meters allows Duke Energy Kentucky to timely read customer meters and to control and know if energy continues to flow through the meter after a customer has requested to be disconnected. This capability will allow the Company to fully investigate possible theft

situations and address them prior to a new customer taking service at that location. The remote connection and disconnection and advanced theft capabilities ensure that one customer will not be adversely affected by the consumption or potential bad acts of a prior customer. Duke Energy Kentucky will continue its required periodic inspections of its systems under 807 KAR 5:006, Section 26.

52. Duke Energy Kentucky is not seeking any waivers associated with notice requirements for customers who may become eligible for disconnection due to non-payment (or other reasons), once the Metering Upgrade is completed. The Company will continue to provide all necessary written customer notices in accordance with 807 KAR 5:006, Section 15.

53. In addition, Duke Energy Kentucky is not seeking any waivers so to enable remote connection or disconnection of natural gas service. Duke Energy Kentucky will continue to deploy service personnel for natural gas disconnections and reconnections, as well as any necessary inspections, including for Combination Customers. For Combination Customers, Duke Energy Kentucky will disconnect electric service remotely first with the intent that such customers will be prompted to either make payments on a delinquent account or enter into a reasonable and mutually agreed upon payment arrangement in advance of natural gas service being manually disconnected.

#### **Testimony and Exhibits**

54. Additional facts supporting this Application are set forth in the following Direct Testimony attached to this Application as Exhibits 6 through 9:

- a. James P. Henning, President of Duke Energy Kentucky, discusses the



Company's operations and the need for the project;<sup>18</sup>

- b. Peggy A. Laub, Director of Rates and Regulatory Planning Ohio/Kentucky, discusses the Company's requests for accounting treatment, proposed depreciation, and the rate impacts of the Metering Upgrade programs;<sup>19</sup>
- c. Donald L. Schneider, Jr., Director of Advanced Metering, discusses the Metering Upgrade technologies and its capabilities, the Company's deployment and construction proposals, and equipment specifications;<sup>20</sup>
- d. Alexander J. (Sasha) Weintraub, Ph.D., Senior Vice President of Customer Solutions, describes the enhanced basic services and customer experience enhancement programs that will be available and that could be developed once the Metering Upgrade is fully deployed.<sup>21</sup>

WHEREFORE, Duke Energy Kentucky respectfully requests that the Commission:

- 1) Issue a CPCN for the construction and implementation of the proposed Metering Upgrade technologies;
- 2) Authorize the depreciation and deferral accounting treatment requested; and
- 3) Grant all waivers requested and necessary and other relief to which the Company may be entitled.

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<sup>18</sup> Exhibit 6.

<sup>19</sup> Exhibit 7.

<sup>20</sup> Exhibit 8.

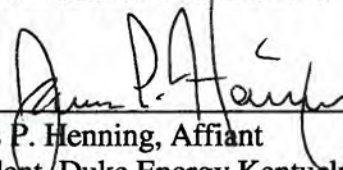
<sup>21</sup> Exhibit 9.

**VERIFICATION**

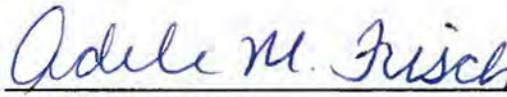
**STATE OF OHIO** )  
 ) **SS:**  
**COUNTY OF HAMILTON** )

The undersigned, James P. Henning being duly sworn, deposes and says that is the President of Duke Energy Kentucky, Inc., that he has personal knowledge of the matters set forth in the foregoing, and that the information contained therein is true and correct to be the best of his knowledge, information and belief.

**DUKE ENERGY KENTUCKY**

By:   
James P. Henning, Affiant  
President, Duke Energy Kentucky, Inc.

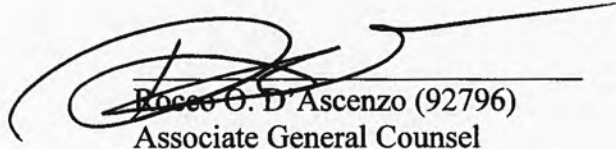
Subscribed and sworn to before me by James P. Henning, President, Duke Energy Kentucky, Inc., on this 25<sup>th</sup> day of April, 2016.

  
NOTARY PUBLIC

**ADELE M. FRISCH**  
Notary Public, State of Ohio  
My Commission Expires 01-05-2019

My Commission Expires: 1/5/2019

Its Attorneys,



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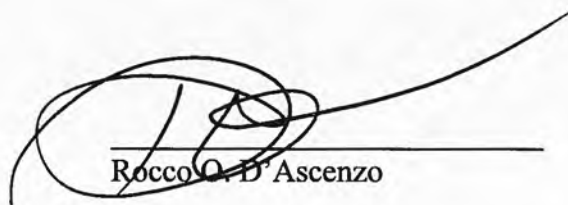
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**CERTIFICATE OF SERVICE**

This is to certify that a copy of the foregoing Application of Duke Energy Kentucky, Inc. has been served via overnight mail to the following party on this 25<sup>th</sup> day of April, 2016.

Hon. Lawrence Cook  
Office of the Attorney General  
Utility Intervention and Rate Division  
1024 Capital Center Drive  
Frankfort, Kentucky 40601



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Rocco Q. D'Ascenzo