COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

CONSIDERATION OF THE NEW FEDERAL STANDARDS OF THE ENERGY INDEPENDENCE AND SECURITY ACT OF 2007	))))	CASE NO. 2008-00408

O R D E R

The Energy Independence and Security Act of 2007 ("EISA 2007") was signed into law on December 19, 2007. Part of EISA 2007 amends the Public Utility Regulatory Policies Act of 1978 ("PURPA") by adding four new PURPA standards applicable to electric utilities and two new PURPA standards applicable to natural gas utilities. EISA 2007 also includes one non-PURPA standard applicable to electric utilities. The four PURPA standards applicable to electric utilities relate to:

1. Integrated Resource Planning;
2. Rate Design Modifications to Promote Energy Efficiency Investments;
3. Consideration of Smart Grid Investments; and
4. Smart Grid Information.

The two PURPA standards applicable to natural gas utilities relate to:

1. Energy Efficiency; and
2. Rate Design Modifications to Promote Energy Efficiency Investments.

The one non-PURPA standard relates to incentives for recovery, use and prevention of industrial waste energy.

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The Commission initiated this administrative proceeding on November 13, 2008 to consider each of the new PURPA standards and the one non-PURPA standard.

PURPA requires the Commission, with respect to each electric utility and each natural gas utility for which it has ratemaking authority, to consider each standard and determine whether to implement each of the proposed standards. PURPA also specifies the procedural requirements that the Commission is to follow in its consideration of the standards. After public notice and hearing, the Commission's determination is to be in writing and made available to the public. Its findings are to be based upon the evidence gathered during discovery or presented at the hearing. This would allow for either a "paper" hearing, where the Commission makes a determination based on the written filings from interested parties, or a full evidentiary hearing.

Not all of Kentucky's jurisdictional electric utilities are subject to PURPA or to the new PURPA standards set forth in EISA 2007. The requirements of Title I (Retail Regulatory Policies for Electric Utilities) of PURPA apply to utilities with total annual retail sales greater than 500 million kilowatt hours ("kWh"), or 500,000 megawatt hours.[1] As a result, Big Rivers Electric Corporation ("Big Rivers"), East Kentucky Power Cooperative, Inc. ("EKPC"), and several of their member distribution cooperatives are not subject to these standards as set forth in EISA 2007. The electric utilities that are subject to PURPA are:

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[1] Reference Manual and Procedures for Implementation of the "PURPA Standards" in the Energy Independence and Security Act of 2007 ("EISA 2007 Reference Manual"), sponsored by the American Public Power Association, Edison Electric Institute, National Association of Regulatory Utility Commissioners, and the National Rural Electric Cooperative Association, April 11, 2008, at 3.

Investor-owned Electric Utilities ("IOUs"):

Duke Energy Kentucky, Inc. ("Duke Kentucky")
Kentucky Power Company ("Kentucky Power")
Kentucky Utilities Company ("KU")
Louisville Gas and Electric Company ("LG&E")

Rural Electric Cooperatives:

Blue Grass Energy Cooperative Corporation ("Blue Grass Energy")
Fleming-Mason Energy Cooperative ("Fleming-Mason Energy")
Jackson Energy Cooperative ("Jackson Energy")
Jackson Purchase Energy Corp. ("Jackson Purchase")
Kenergy Corp. ("Kenergy")
Nolin Rural Electric Cooperative Corporation ("Nolin RECC")
Owen Electric Cooperative ("Owen Electric")
Salt River Electric Cooperative Corporation ("Salt River Electric")
South Kentucky Rural Electric Cooperative Corporation ("South Kentucky RECC")
Taylor County Rural Electric Cooperative Corporation ("Taylor County RECC")

The electric utilities that are not subject to PURPA are:

Big Rivers Electric Corporation
East Kentucky Power Cooperative, Inc.
Big Sandy Rural Electric Cooperative Corporation ("Big Sandy Electric")
Clark Energy Cooperative, Inc. ("Clark Energy")
Cumberland Valley Electric, Inc. ("Cumberland Valley Electric")
Farmers Rural Electric Cooperative Corporation ("Farmers RECC")
Grayson Rural Electric Cooperative Corporation ("Grayson RECC")
Inter-County Energy Cooperative Corporation ("Inter-County Energy")
Licking Valley Rural Electric Cooperative Corporation ("Licking Valley RECC")
Meade County Rural Electric Cooperative Corporation ("Meade Co. RECC")
Shelby Energy Cooperative, Inc. ("Shelby Energy")

Natural gas utilities with total annual retail sales greater than 10 billion cubic feet are subject to PURPA. Four of the five major gas utilities in Kentucky are subject to PURPA. The one exception is Delta Natural Gas Company, Inc. ("Delta"). The gas utilities subject to PURPA are:

Atmos Energy Corporation ("Atmos")
Columbia Gas of Kentucky, Inc. ("Columbia")
Duke Kentucky
LG&E

Notwithstanding that some of the electric utilities are not subject to PURPA, the Order initiating this administrative case made all jurisdictional electric utilities parties to the instant proceeding. All five major gas utilities, including Delta, were also made parties.

The Commission also provided a courtesy copy of its November 13, 2008 Order to groups that were known to typically intervene or have an interest in such administrative cases in order to encourage such interested stakeholders to participate, either by intervening or filing suggested guidelines or comments.[2]

Intervention was requested by and granted to the Attorney General of the Commonwealth of Kentucky, by and through his Office of Rate Intervention ("AG"); Kentucky Industrial Utility Customers, Inc.; Trilliant, Inc., a provider of wireless communications for smart grids; and the Community Action Council for Lexington-Fayette, Bourbon, Harrison and Nicholas Counties, Inc. ("CAC").

Procedural History

The Commission required that each electric and gas utility made a party to this case ("jurisdictional parties") file testimony, individually or jointly, that, at a minimum, addressed the following issues:

[2] Appendix E of the November 13, 2008 Order includes a list of stakeholders to whom the Order was sent.

1. Identify any tariff, practice or policy of the utility that is directly responsive to the requirements of each of the applicable EISA 2007 electric or gas standards and explain why the utility believes such tariffs, practices, or policies are responsive to the standards.

2. Explain the impact on customers, in terms of consumption patterns and cost, of each applicable electric or gas standard on each customer class and whether there will be a substantially different impact on particular customers within a class resulting from adoption of the standard.

3. Explain whether each of the applicable EISA 2007 electric or gas standards should be considered for adoption.

4. Identify any alternative standard the Commission should consider in lieu of an EISA 2007 standard.

In addition to addressing the four requirements set out above, the subject utilities were allowed to address any other EISA 2007-related issues in their testimony. The jurisdictional parties were also directed to consider the congressional purposes of PURPA to encourage: 1) conservation of energy supplied by electric utilities; 2) optimal efficiency of electric facilities and resources; and 3) equitable rates for electric consumers.

As required, testimony was filed by the jurisdictional parties on January 12, 2009. On February 5, 2009, the Commission issued a procedural schedule that provided for two rounds of discovery on the jurisdictional parties, intervenor testimony, one round of

discovery on the intervenors, and rebuttal testimony.[3] None of the intervenors filed testimony or submitted data requests to the jurisdictional parties. As there was no intervenor testimony, there was no rebuttal testimony by the jurisdictional parties.

Written comments were provided by Mr. Jeff Lorch, a representative of a manufacturer of LED lighting; the Cumberland Chapter of the Sierra Club ("Sierra Club"); and an individual, Mr. Geoffrey Young.

No formal hearing was included in the original procedural schedule. To provide the parties an opportunity to request a hearing, the Commission issued an Order on March 17, 2010 giving the parties 10 days to do so. No hearing was requested and the case stands submitted for decision based on the evidentiary record.

Background of PURPA

PURPA was enacted in 1978. Its original purpose was to encourage conservation of energy supplied by electric utilities, optimal efficiency of electric utility facilities and resources, and equitable rates for electric consumers.[4] As described in more detail below, PURPA has been amended four times.

Initially, PURPA required state commissions and non-regulated electric utilities to consider six rate design standards that dealt with:

1. Cost of service;
2. Declining block rates;
3. Time-of-day rates;
4. Seasonal rates;

[3] While representatives of EKPC filed testimony on behalf of itself and its member-cooperatives, Christopher S. Perry, President and Chief Executive Officer of Fleming-Mason Energy, also filed testimony regarding the rate design modifications to promote energy efficiency improvements.

[4] PURPA, Section 101.

5. Interruptible rates; and
6. Load management techniques.[5]

PURPA was amended by the Energy Policy Act of 1992 ("EPAct 1992") which included four additional federal standards for state consideration. EPAct 1992 required state commissions to consider integrated resource planning, investments in conservation and demand management, and energy efficiency investment in power generation and supply. The fourth standard also required State commissions to give consideration to the effect of wholesale power purchases on cost of capital, the effects of leveraged capital structures on the reliability of wholesale power sellers, and assurance of an adequate fuel supply.[6]

PURPA was also amended by the Energy Policy Act of 2005 ("EPAct 2005") which added five new federal standards. The standards set forth for state consideration in EPAct 2005 dealt with:

1. Net metering;
2. Fuel diversity;
3. Fossil fuel generation efficiency;
4. Time-based metering and demand response programs; and
5. Interconnection.[7]

The third amendment was EISA 2007, which is the subject of this administrative proceeding and is described at the beginning of this Order.

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[5] Reference Manual and Procedures for Implementation of the "PURPA Standards" in the Energy Policy Act of 2005 ("EPAct 2005 Reference Manual"), sponsored by the American Public Power Association, Edison Electric Institute, National Association of Regulatory Utility Commissioners, and the National Rural Electric Cooperative Association, March 22, 2006, at 7-8.

[6] *Id.* at 9.

[7] *Id.* at 9-13.

As described below, the Commission has given consideration to each of the PURPA standards.

The Commission initiated Administrative Case No. 203[8] on March 30, 1979 to consider the six original PURPA standards. However, along with the PURPA objectives of conservation, utility efficiency and equitable rates, the Commission added the objectives of rate continuity, revenue stability and understandability.[9] Initially, the Commission made every jurisdictional electric utility a party to the proceeding; ultimately, however, all but the four IOU's were excused[10] from participation in that proceeding. After extensive discovery, the Commission issued a final Order on February 28, 1982 in which we adopted each of the original six PURPA standards. The Commission required each IOU to file an embedded cost-of-service study with its first rate case after the Order and a marginal cost-of-service study in its second rate case after the Order, and established a task force to carry out the purposes of the Order. It is also important to note that the Commission's adoption of the additional objectives of rate continuity, revenue stability and understandability resulted in our informal adherence to the principle of "gradualism" in the reallocation of revenues among customer classes and, eventually, to the shift of fixed-cost recovery from volumetric charges to the customer charge component of electric and gas utilities' rates.

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[8] Administrative Case No. 203, The Determination with Respect to the Ratemaking Standards Identified in Section 111(d)(1)-(6) of the Public Utility Regulatory Policies Act of 1978, (Ky. PSC Mar. 30, 1979).

[9] *Id.* at 7-9 (Ky. PSC Feb. 28, 1982).

[10] At the time, the four electric IOUs were KU, LG&E, The Union Light, Heat and Power Company, and Kentucky Power.

The Commission subsequently initiated Administrative Case No. 350[11] in 1993 to address the EPAct 1992 standard relating to long-term purchases of wholesale power. In its final Order issued on October 29, 1993, we fully discussed our position with regard to each aspect of this standard but declined to formally adopt any aspect of the standard.

The other three EPAct 1992 standards (integrated resource planning, investments in conservation and demand management, and energy efficiency investment in power generation and supply) are addressed by Commission regulations and statutes. The integrated resource standard and the energy efficiency standard are addressed by 807 KAR 5:058, the integrated resource planning regulation which was promulgated in 1990 and amended in 1995. The regulation, as amended, requires jurisdictional electric generating utilities to submit integrated resource plans ("IRPs") to the Commission every three years. Among the items required to be included in the IRP is a description and discussion of improvements to and more efficient utilization of existing utility generation, transmission, and distribution facilities.[12] In addition to certain specific requirements of the IRP regulation, the conservation and demand provisions are also addressed by statute, specifically KRS 278.285, which allows the Commission to determine the reasonableness of demand-side management ("DSM") plans and allows for the utilities to propose a DSM mechanism to recover certain associated costs.

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[11] Administrative Case No. 350, The Consideration and Determination of the Appropriateness of Implementing a Ratemaking Standard Pertaining to the Purchase of Long-Term Wholesale Power by Electric Utilities as Required in Section 712 of the Energy Policy Act of 1992, (Ky. PSC May 21, 1993).

[12] 807 KAR 5:058, Section 8, 2(a).

The five new federal PURPA standards set forth in the EPAct 2005 were addressed by the Commission in two recent administrative cases. None of the five standards were adopted by the Commission. In Administrative Case No. 2006-00045,[13] the Commission declined to adopt the smart metering standards[14] and the interconnection standard.[15] The Commission addressed but declined to adopt the fuel diversity and fossil fuel generation efficiency standards in Administrative Case No. 2007-00300.[16] Finally, given the requirements of 807 KAR 5:054, the small power and cogeneration regulation, the Commission determined that no action was required regarding the EPAct 2005 cogeneration and small power production standard.

In this administrative proceeding, the Commission addresses each new PURPA standard and the one non-PURPA standard. The four PURPA standards relating to Integrated Resource Planning, Rate Design Modifications to Promote Energy Efficiency Investments, Consideration of Smart Grid Investments, and Smart Grid Information, as well as the non-PURPA waste energy standard, apply to all the jurisdictional electric

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[13] Administrative Case No. 2006-00045, Consideration of the Requirements of the Federal Energy Policy Act of 2005 Regarding Time-Based Metering, Demand Response, and Interconnection Service (Ky. PSC Dec. 21, 2006).

[14] The term "smart metering standards" commonly is used to refer to the net metering, time-based metering and demand response aspects of EPAct 2005, Subtitle E, § 1252.

[15] Although not adopted, pursuant to legislative mandate, the Commission later developed statewide interconnection guidelines for small power production. Each jurisdictional utility now has an authorized tariff incorporating the guidelines.

[16] Case No. 2007-00300, Consideration of the Requirements of the Federal Energy Policy Act of 2005 Regarding Fuel Sources and Fossil Fuel Generation Efficiency (Ky. PSC Aug. 25, 2009).

utilities that were made parties to this proceeding. The two PURPA standards relating to Energy Efficiency and Rate Design Modifications to Promote Energy Efficiency Investments apply to the four largest jurisdictional gas utilities that were made parties to this proceeding.

A discussion of each standard and the Commission's determination regarding adoption of each standard follows.

Integrated Resource Planning ("EISA 2007 IRP Standard")

Section 532 of EISA 2007 amends PURPA by including a new IRP standard for electric utilities. The standard is as follows:

Integrated Resource Planning - Each electric utility shall:

- integrate energy efficiency resources into utility, state, and regional plans; and
- adopt policies establishing cost-effective energy efficiency as a priority resource.

The standard, if adopted, would require each jurisdictional electric utility to integrate energy efficiency resources into its resource planning process and adopt policies that would make cost-effective energy efficiency a priority resource.

As has been stated in most of the Staff Reports issued regarding the IRPs filed by Kentucky's jurisdictional electric generating utilities, the goal of the Commission in establishing the IRP process was to ensure that all reasonable options for the future supply of electricity were being examined and pursued, and that ratepayers were being provided a reliable supply of electricity at the lowest possible cost. The IRP regulation, 807 KAR 5:058, also requires the electric utilities to include information regarding

existing and future DSM programs, as well as conservation and load management programs, in their IRP filings.[17]

As a result, the Commission believes that, in practice, Kentucky's jurisdictional electric generating utilities have been required to consider demand-side resources, including demand response and energy efficiency initiatives, on the same basis as supply-side resources. The EISA 2007 IRP Standard only addresses the integration of energy efficiency into the planning process even though there are many factors that impact the resource planning process.

Discussion

In general, the jurisdictional electric generating utilities support the intent of the proposed federal standard but believe that Kentucky's IRP regulation is sufficient to meet it. In addition, the jurisdictional electric generating utilities also believe that the Certificate of Public Convenience and Necessity ("CPCN") and DSM statutes, KRS 278.020 and KRS 278.285 respectively, provide the Commission with the necessary authority to consider energy efficiency programs and initiatives.

Big Rivers and its Member-Cooperatives

In its Joint Testimony, Big Rivers and its member-cooperatives took the position that there was no need to adopt the EISA 2007 IRP Standard because they believe that the Commission's existing IRP process is sufficient to accomplish the goal of the standard. In addition, Big Rivers and its member-cooperatives stated that the existing statutory framework through which utilities seek CPCNs to construct generating facilities

[17] 807 KAR 5:058. Integrated resource planning by electric utilities. Section 7(2)(g), Section 7(3), Section 7(7)(e)(4), and Section 8(1), (2)(b), and (4)(a)(6).

allows the Commission to take into account a utility's energy efficiency programs in determining the need for a new facility.[18]

Duke Kentucky

Duke Kentucky believes the Commission has sufficient policies and rules already in place that promote energy efficiency and accomplish the goals of the EISA 2007 IRP Standard.[19] Duke Kentucky specifically cites requirements of the IRP Regulation that relate to the EISA 2007 IRP Standard. Duke Kentucky notes that utilities are required to submit a summary of the resource plan which includes an identification and description of existing DSM programs and an estimate of the impact on utility sales and coincident peak demand and includes, as part of their 15-year forecasts, the estimates of existing and continuing DSM programs.[20]

Duke Kentucky states that the IRP regulation requires utilities to develop a plan to provide an adequate and reliable source of electricity at the lowest possible cost and that the plan must include an assessment of cost-effective resource options including conservation and load management or other DSM programs not already in place.[21] Duke Kentucky explains that, in its own IRP process, it considers a multitude of options and combinations, including both conservation and demand response programs,

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[18] Joint Direct Testimony of David A. Spainhoward, G. Kelly Nuckols, Sanford Novick, and Burns E. Mercer at 9 (filed Jan. 12, 2009) ("Big Rivers Joint Testimony").

[19] Direct Testimony of David E. Freeman at 3 (Jan. 12, 2009) ("Freeman Testimony").

[20] *Id.* at 4-5.

[21] *Id.*

environmental compliance alternatives, and supply-side alternatives (such as peaking units, combined cycle units, coal-fired units, integrated gasification combined cycles, renewable resources, and purchases.)[22]

Duke Kentucky further explains that there are a number of constraints to be considered for a resource plan to satisfy the objective of providing a least-cost resource mix. According to Duke Kentucky, the generation resource must match the characteristics of a utility's future load requirements, whether peaking, intermediate, or base load. Any of these needs could make a particular generation source, including an energy efficiency plan, more appropriate and, consequently, more reliable than another alternative.[23]

Duke Kentucky believes that continuing to use the IRP process is the most appropriate method to integrate energy efficiency resources into utility plans to meet the goals of reliable, cost-effective supply of power to customers.[24] It believes that the current IRP regulation and DSM statute provide the Commission and utilities with all that is necessary to promote energy efficiency as an integral part of a utility's planning process.[25] Duke Kentucky, itself, considers energy efficiency as a "fifth fuel" source.[26]

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[22] *Id.* at 6.

[23] *Id.* at 9.

[24] *Id.* at 6-7.

[25] *Id.* at 10.

[26] *Id.* at 9.

EKPC and its Member-Cooperatives

EKPC and its member-cooperatives stated their belief that the IRP filing process meets or exceeds the EISA 2007 IRP Standard and that the IRP regulation is comprehensive and includes consideration of cost-effective energy efficiency measures.[27] EKPC and its member-cooperatives explained that they evaluate the integration of energy efficiency in their resource plans using DSManager which includes the tests identified in the EISA Standards Manual.[28] In its response to data requests, EKPC generally explained how each of its member-cooperatives treats energy efficiency as a priority resource.[29]

Kentucky Power

In addition to the IRP Regulation, Kentucky Power stated its belief that the Commission's general ratemaking authority, its CPCN authority over new generating resources, and its authority under the DSM statute to approve cost-effective DSM programs also ensure that cost-effective energy efficiency will be established as a priority resource.[30]

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[27] Direct Testimony of Julia J. Tucker at 2-3 (Jan. 12, 2009) ("Tucker Testimony").

[28] Tucker Testimony at 3. These tests, commonly referred to as the California Tests, are the: Participant Test; Ratepayer Impact Measure Test; Total Resource Cost Test; and Program Administrator Cost Test.

[29] EKPC's Response to Staff's Data Request of March 16, 2009, Item 40 (filed Mar. 30, 2009).

[30] Direct Testimony of Errol K. Wagner at 5 (Jan. 12, 2009) ("Wagner Testimony").

Similar to Duke Kentucky, Kentucky Power explains that the IRP regulation includes an assessment of potentially cost-effective resource options including improvements in operating efficiency of existing facilities and demand-side programs.[31] In describing the IRP Regulation, Kentucky Power explained that the basic steps include the identification of resource options which include consideration of demand reduction options and energy efficiency measures.[32]

Kentucky Power notes that neither EISA 2007 nor PURPA define energy efficiency, but Kentucky Power believes that it could apply to either a supply-side or demand-side measure. Kentucky Power believes that the Commission, ratepayers and utilities should be indifferent to whether an energy efficiency measure is a supply-side or a demand-side measure as long as the most cost-effective energy efficiency measures are deployed.[33] In its response to data requests, Kentucky Power further states that, while the rules of the IRP process do not explicitly require that cost-effective demand-side resources be given priority status, the IRP regulatory requirement to produce a reliable and adequate plan that has the lowest possible cost would imply that energy efficiency measures are given priority to the extent that they are cost-effective.[34]

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[31] *Id.* at 6.

[32] *Id.* at 6-7.

[33] *Id.* at 4.

[34] Kentucky Power's Response to Staff's Data Request of March 16, 2009, Item 64 (filed Mar. 30, 2009).

KU and LG&E

KU and LG&E believe the current IRP process is adequate to ensure that utilities consider all cost-effective energy efficiency and DSM strategies and that there is no need to adopt the EISA 2007 IRP Standard.[35] KU and LG&E believe that Kentucky electric utilities already have an array of successful and cost-effective energy efficiency and DSM programs, which suggests that the IRP process is adequate even in the absence of statewide mandates.[36] As KU and LG&E state, the current IRP process requires utilities to complete supply-side analyses for satisfying projected demand that already take into account cost-effective energy efficiency and DSM programs.[37]

Sierra Club and Mr. Geoffrey Young

Although the Sierra Club and Mr. Geoffrey Young neither formally intervened nor submitted testimony, each submitted comments recommending the Commission adopt all of the EISA 2007 standards. The Sierra Club believes the standards leave the Commission and utility companies with flexibility and freedom in their precise implementation,[38] while Mr. Young believes that the consideration of the standards provides Kentucky with the opportunity to address what he perceives as a multitude of barriers to the greater application of energy efficiency programs.[39]

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[35] Testimony of Lonnie E. Bellar at 2 (filed Jan. 12, 2009) ("Bellar Testimony").

[36] *Id.*

[37] *Id.* at 3.

[38] Comments of the Cumberland Chapter of the Sierra Club at 3 (filed Aug. 13, 2009) ("Sierra Club Comments").

[39] Comments of Geoffrey Young at 3-4 (filed Aug. 4, 2009) ("Young Comments").

The Sierra Club believes that the requirements of the EISA 2007 IRP Standard "are desirable, clear, and also flexible" and would "have a positive impact on consumers' pocketbooks, human health and natural resources."[40] The Sierra Club also believes that this standard is sensible because it claims energy efficiency improvements can be made at about half the total cost (or less) of new supply-side resources (a scenario supporting this claim is included in the Sierra Club Comments).[41]

According to the Sierra Club, the current IRP regulation provides for Staff review but does not call for the Commission to approve, disapprove, or modify the IRPs developed by the utilities. The Sierra Club believes that, if the utility chooses not to adopt the staff's recommendations, there are no explicit consequences. Therefore, the Sierra Club reasons that adopting the EISA 2007 IRP Standard would be a desirable improvement to the present regulation.[42]

Mr. Young states that the EISA 2007 IRP Standard is concise and clear and should be adopted and implemented as a statewide mandate.[43] Mr. Young also believes that adoption of the EISA 2007 IRP Standard makes sense in that energy efficiency improvements can be made at about half the total cost (or less) of new supply-side resources and also includes a scenario in his comments supporting this claim that is similar to that of the Sierra Club.[44]

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[40] *Id.*

[41] *Id.* at 3-4.

[42] *Id.* at 4.

[43] *Id.*

[44] *Id.*

Like the Sierra Club, Mr. Young cites the fact that the current IRP regulation does not require the Commission to approve, disapprove or modify the IRP submitted by the utility. Mr. Young believes that, if a utility chooses to treat DSM as a "token" resource or discounts the value of demand-side resources, there is little the Commission can do.[45] Finally, in support of his position, Mr. Young cites the statements made by speakers at the two statewide energy conferences organized by the Kentucky Energy Efficiency Working Group that referred to the Southeast as "the Sahara Desert of energy efficiency" and included Kentucky as a state where DSM activity is lower than it should be. Mr. Young believes that Kentucky's sub-optimal development of DSM is due in part to the lack of a standard.[46]

Commission Decision – EISA 2007 IRP Standard

As referenced by each of the electric generating utilities, the IRP Regulation includes several specific requirements regarding energy efficiency. 807 KAR 5:058, Section 5(4), of the IRP regulation requires the subject utility to include in its Plan Summary a discussion of planned resource acquisitions including the utility's consideration of demand-side programs. Section 7(2)(g) requires the subject utility to identify and describe its existing demand-side programs and provide an estimate of their impact on utility sales and coincident peak demands. Section 7(3) requires base load forecasts for each of the 15 years succeeding the base year of its IRP, including the utility's estimates of existing and continuing demand-side programs.

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[45] *Id.* at 4-5.

[46] *Id.* at 5.

Section 8(2) of the IRP regulation requires the utility to include its consideration of the potential impacts of conservation and load management or other demand-side programs not already in place in its lowest cost resource assessment and acquisition plan. In addition, Section 8(3)(e) requires the utility to provide specific information regarding each existing and new conservation and load management or other demand-side programs included in its resource acquisition plan. That information includes:

- Targeted classes and end-uses;
- Expected duration of the program;
- Projected energy changes by season, and summer and winter peak demand changes;
- Projected cost, including any incentive payments and program administrative costs; and
- Projected cost savings, including savings in the utility's generation, transmission and distribution costs.

Section 8(4)(a)(6) requires identification of reductions or increases in peak demand from new conservation and load management or other demand-side programs for the utility's total resource capacity available at winter and summer peak. Similarly, Section 8(4)(b)(5) requires identification of reductions or increases in energy from new conservation and load management or other demand-side programs. Finally, Section 8(5) requires the utility to include a description and discussion of the criteria (for example, present value of revenue requirements, capital requirements, environmental impacts, flexibility, diversity) used to screen each resource alternative including demand-side programs, and criteria used to select the final mix of resources presented in the acquisition plan.

As several utilities pointed out, although the IRP regulation may not directly identify energy efficiency as a priority resource and does not require the Commission to approve the utilities' resource acquisition plans, the Commission believes that the requirement of the IRP regulation to develop a lowest possible cost resource plan does effectively treat cost-effective energy efficiency programs as a priority resource.

In addition to the requirements of the IRP regulation, the Commission believes that the CPCN authority provided the Commission pursuant to KRS 278.020 also effectively treats cost-effective energy efficiency as a priority resource.

The Commission recognizes the importance of greater deployment of energy efficiency initiatives to Kentucky's electric generating utilities due to the reliance on low-cost coal-fired base load generation. Even though there has been no legislative mandate to adopt its goals, Kentucky's 7-Point Strategy for Energy Independence (Kentucky's Energy Plan) issued in November 2008 includes specific goals for energy efficiency as well as renewables and biofuels by 2025. The Commission also notes that Kentucky's reliance on coal-fired generation will face increasing pressure as costs are incurred to meet proposed and potential new federal environmental regulations.

In several administrative cases,[47] the Commission has noted its support for energy efficiency. In addition, in recent cases where utilities were requesting a general increase in base rates, the Commission has questioned utilities regarding their conservation and energy efficiency efforts. In those cases, the Commission has stated its belief that conservation, energy efficiency and demand-side management will become more important and cost-effective as there will likely be more constraints placed upon utilities whose main source of supply is coal-based generation. As a result, the Commission has encouraged all electric energy providers to make a greater effort to offer cost-effective demand-side management and other energy efficiency programs.[48]

In Case No. 2007-00300 in which the EPAct 2005 energy diversity standard was considered, the Commission noted that it was clear that there is a strong movement

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[47] Administrative Case No. 387, A Review of the Adequacy of Kentucky's Generation Capacity and Transmission System (Ky. PSC Dec. 20, 2001); Administrative Case No. 2005-00090, An Assessment of Kentucky's Electric Generation, Transmission, and Distribution Needs (Ky. PSC Sep. 15, 2005); Administrative Case No. 2006-00045, Consideration of the Requirements of the Federal Energy Policy Act of 2005 Regarding Time-Based Metering, Demand Response, and Interconnection Service (Ky. PSC Dec. 21, 2006); Case No. 2007-00300, Consideration of the Requirements of the Federal Energy Policy Act of 2005 Regarding Fuel Sources and Fossil Fuel Generation Efficiency (Ky. PSC Aug. 25, 2009); and Administrative Case No. 2007-00477, An Investigation of the Energy and Regulatory Issues in Section 50 of Kentucky's 2007 Energy Act (Ky. PSC Jun 30, 2008).

[48] Case No. 2008-00030, Application of Farmers Rural Electric Cooperative Corporation for an Adjustment of Rates (Ky. PSC Jun. 10, 2009); Case No. 2008-00154, Application of Owen Electric Cooperative, Inc. for Adjustment of Rates (Ky. PSC Jun. 25, 2009); Case No 2008-00254, Application of Grayson Rural Electric Cooperative Corporation for an Adjustment in Rates and an Increase in Retail Electric Rates Equal to Increase in Wholesale Power Costs (Ky. PSC Jun. 3, 2009); and Case No. 2008-00401, Application of Big Sandy Rural Electric Cooperative Corporation for an Adjustment in Rates (Ky. PSC Jun. 3, 2009).

both at the federal and Kentucky level toward greater use of energy efficiency, renewables, and biofuels, as well as the consideration of nuclear power to meet the demand for electricity now supplied by generation from coal and natural gas. We also stated that, coupled with anticipated carbon legislation, it appears to be in the interest of both the electric utilities and ratepayers that greater consideration of energy efficiency be encouraged.

As noted above, the actions of the Commission clearly indicate its support for the intent of the EISA 2007 IRP Standard. The Commission notes that the electric generating utilities have also indicated their support for the intent of the proposed standard. The Commission agrees with the electric generating utilities that the requirements of the IRP regulation, our authority under the DSM statute, our ability to review resource options pursuant to the CPCN statute, and the Commission's broad investigative authority effectively meet the intent of the EISA 2007 IRP Standard. However, as we have previously stated, the Commission is aware that the electric utilities must comply with current statutes and regulations, which require the provision of a reliable supply of electricity at the lowest possible cost for all customers and that those alternative solutions be cost-effective.[49] That requirement led the Commission to recently deny Kentucky Power's proposal to enter into a wind power contract because that purchase power agreement was not deemed to be cost-effective.[50] Even though

[49] Case No. 2007-00300, Consideration of the Requirements of the Federal Energy Policy Act of 2005 Regarding Fuel Sources and Fossil Fuel Generation Efficiency (Ky. PSC Aug. 25, 2009).

[50] Case No. 2009-00545, Application of Kentucky Power Company for Approval of Renewable Energy Purchase Agreement for Wind Energy Resources Between Kentucky Power Company and FPL Illinois Wind, LLC. (Ky. PSC Jun. 28, 2010).

wind power is a renewable and not an energy efficiency resource, this example illustrates the limitations with which the Commission and the electric generating utilities must comply.

EISA 2007 provides the Commission with several options regarding the EISA 2007 IRP Standard. We may adopt the EISA 2007 IRP Standard, adopt a different IRP standard, or not adopt any IRP standard.

Absent the establishment of a mandated federal or Kentucky energy efficiency standard, the Commission finds it impractical to adopt the proposed EISA 2007 IRP Standard. The Commission recognizes that the electric generating utilities believe that the existing statutory CPCN framework allows the Commission to take into account a utility's energy efficiency programs in determining the need for a new facility. However, in recognition of the increasing importance of energy efficiency and in recognition of the authority granted by the applicable statutes and regulations, the Commission has developed a Kentucky IRP Standard which shall be adopted by all jurisdictional utilities. That standard is as follows:

> Each electric utility shall integrate energy efficiency resources into its plans and shall adopt policies establishing cost-effective energy efficiency resources with equal priority as other resource options.
>
> In each integrated resource plan, the subject electric utility shall fully explain its consideration of cost-effective energy efficiency resources as a priority resource as required by regulation. In each certificate case, the subject electric utility shall fully explain its consideration of cost-effective energy efficiency resources as a priority resource.
>
> In each rate case, the subject electric utility shall fully explain its consideration of cost-effective energy efficiency resources and the impact of such resources on its test year.

While similar to the federal standard, the Kentucky IRP Standard recognizes the limitations of our current statutes and regulations. Simply put, the Kentucky IRP Standard requires the electric utilities to make energy efficiency resources a priority to the extent that those resources are in compliance with the current statutes and regulations. The Commission believes that the Kentucky IRP Standard preserves the current flexibility available through 807 KAR 5:058 to the electric utilities in their consideration of energy resources, yet encourages them to make greater efforts to consider and offer cost-effective energy efficiency programs.

Rate Design Modifications to Promote Energy Efficiency Investments ("EISA 2007 Rate Design Standard")

Section 532(a)(17) of EISA 2007 amends PURPA by including a new Rate Design standard for electric utilities. The standard, if adopted, would require each jurisdictional electric utility to develop and implement rates that would promote energy efficiency investments. The standard is as follows:

The rates allowed to be charged by any electric utility shall:

- align utility incentives with the delivery of cost-effective energy efficiency; and
- promote energy efficiency investments.

In complying with these two items, each state regulatory authority shall consider the six following policy options:

- removing the throughput incentive and other regulatory and management disincentives to energy efficiency;
- providing utility incentives for the successful management of energy efficiency programs;
- including the impact on adoption of energy efficiency as one of the goals of retail rate design;

- adopting rate designs that encourage energy efficiency for each customer class;

- allowing timely recovery of energy efficiency-related costs; and

- offering home energy audits, demand response programs, publicizing the financial and environmental benefits associated with making home energy efficiency improvements, and educating homeowners about all existing federal and state incentives that make energy efficiency improvements more affordable, including the availability of low-cost loans.

In recent years, many publications have stated the concern that standard ratemaking practices may not encourage utilities to adopt energy conservation measures. One such publication is the National Action Plan for Energy Efficiency ("National Action Plan").[51] The National Action Plan included specific recommendations to support a national commitment to energy efficiency by gas and electric utilities. Utility regulators and other organizations had noted that U.S. energy demand was continuing to grow, energy prices were continuing to rise, and concern over energy security, air pollution and global climate change was increasing.[52] Many of the concerns and issues discussed in the National Action Plan are reflected in the EISA 2007 Rate Design Standard and the six policy options set forth therein.

Three of the options are closely related. The first option, removing the throughput incentive, refers to the link between a utility's sales and its revenue or

[51] National Action Plan, July 2006. The National Action Plan was a private-public initiative to create a sustainable, aggressive national commitment to energy efficiency through the collaborative efforts of gas and electric utilities, utility regulators, and other partner organizations.

[52] *Id.* at ES-1.

earnings. Generally, an increase in sales results in an increase in earnings, and a decrease in sales leads to a decrease in earnings. Therefore, a decrease in sales due to greater energy efficiency could lead to a decrease in earnings and perhaps the inability of utilities to recover some of their fixed costs. The second option relates to providing incentives for energy efficiency programs. Providing incentives can help offset the negative effect on earnings from successful energy efficiency programs. The fifth option allows timely recovery of energy efficiency program costs. Prompt recovery of costs and the removal of the uncertainty related to such recovery can help eliminate utility concerns associated with adopting energy efficiency.[53]

The third and fourth policy options are also related. The third option is to include the impact of energy efficiency as a goal of rate design and the fourth option is the actual adoption of rate designs that encourage energy efficiency for each customer class. Utilities and regulators consider a number of goals in the ratemaking process and the third policy option would include encouraging utilities to adopt energy efficiency as a ratemaking goal. The closely related fourth option is to address the response of each customer class to energy efficiency programs. Utilities and regulators may be required to develop and offer different energy efficiency programs for different customer classes since each class may not respond in the same manner to the same program.[54]

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[53] EISA Standards Manual at 47-49.

[54] *Id.* at 48-49.

The last policy option lists some of the specific types of programs utilities and regulators may consider, such as home energy audits and providing information and education regarding the benefits of energy efficiency.[55]

Discussion

In considering the EISA 2007 Rate Design Standard and its options, the Commission's focus has been on the throughput incentive and consideration of rate design structures to remove the throughput incentive and encourage energy efficiency investment. Concern over the throughput incentive has led some states to consider decoupling earnings from sales to remove the link between the two. In this proceeding, the Commission asked the electric utilities to discuss decoupling and related rate design modifications.

Kentucky's jurisdictional electric utilities support the intent of the EISA 2007 Rate Design Standard but do not support its adoption.

Big Rivers and its Member-Cooperatives

Big Rivers and its member-cooperatives do not believe the Commission should adopt the EISA 2007 Rate Design Standard. According to Big Rivers and its member-cooperatives, Kentucky's utilities historically have recovered only a portion of their fixed costs through customer charges. The balance of fixed costs plus a margin are recovered through the energy charges. As a result, there exists an incentive to increase sales. However, Big Rivers and its member-cooperatives do not believe there are any regulatory barriers and that no legislative changes are required for the Commission to

[55] *Id.* at 49.

consider rate design options that would encourage energy efficiency.[56] They testified that there is adequate statutory and regulatory authority provided by KRS 278.285, the DSM statute, and through general rate case proceedings to address the policy options cited in the EISA 2007 Rate Design Standard.[57]

Big Rivers and its member-cooperatives explained that their rate structures were not designed with the goal of promoting energy efficiency.[58] They stated their belief that their rates for residential and small commercial service are not supportive of energy efficiency to the extent that the throughput incentive has not been removed.[59]

Regarding energy efficiency, Big Rivers noted that it was currently engaged with its member-cooperatives in a process to develop a comprehensive energy efficiency plan. It explained that its 2005 IRP outlined an $8 million annual investment in energy efficiency projects and programs to achieve a $39 million dollar net present value savings.[60] However, Big Rivers pointed out that its current DSM programs are designed to encourage energy efficiency rather than discourage energy use through rate design.[61]

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[56] Big Rivers Joint Testimony at 11.

[57] *Id.* at 13.

[58] Big Rivers' Response to Staff's Data Request of March 16, 2009, Item 6 (filed Mar. 30, 2009).

[59] *Id.*, Item 7, Item 8, and Item 9.

[60] *Id.*, Item 2.

[61] *Id.*, Item 5.

Big Rivers and its member-cooperatives believe that, when energy charges are higher due to the inclusion of fixed costs, there may be an unintended consequence in that there is an incentive for the customer to use energy more efficiently. However, until the throughput incentive has been removed, there is no incentive for the utility to promote energy efficiency.[62] In addition, they point out that, since Big Rivers' wholesale energy rates are not time-differentiated, there is little reason for the member-cooperatives to implement time-based energy rates.[63]

Big Rivers and its member-cooperatives suggest that any retail pricing strategy designed to affect customer demand must be evaluated in the context of potential revenue and cost effects. Even though their rates are not cost-based, they believe that there are practical limitations to achieving cost-based rates, including consideration of the impact on customers of changes in pricing, sophisticated rate structures and meter technology.[64] Big Rivers observed that, over time, the Commission has allowed the Big Rivers member-cooperatives to gradually shift recovery of some fixed costs from their energy charges to their customer charges, which has aligned rates more closely with the cost of service.[65]

With respect to inclining block rates, Big Rivers and its member-cooperatives do not support such a rate design. They believe that inclining block rates will impact lower

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[62] *Id.*, Item 6.

[63] *Id.*, Item 7, Item 8, and Item 9.

[64] *Id.*

[65] *Id.*

income and rural households without access to natural gas more severely than those with higher incomes or those living in metropolitan areas.[66]

Big Rivers and its member-cooperatives are also opposed to decoupling as a rate structure to achieve energy efficiency; however, they do not oppose decoupling to remove potential revenue shortfalls resulting from moderate weather and economic contraction and to more closely align rates with costs. They believe that decoupling, by its very definition, allows a utility to generate revenues sufficient to maintain financial health independent of customers' energy usage.[67] However, they believe that decoupling to support energy efficiency is unnecessary because the existing DSM mechanism allows the utilities and the Commission to achieve this objective. Big Rivers and its member-cooperatives support the alignment of rates with the cost-of-service, which they also believe will remove the throughput incentive.[68]

With regard to removing the throughput incentive, Big Rivers and its member-cooperatives identified two main categories of rate design options. The first category, with two alternatives, involves removing all fixed-cost recovery from volumetric charges such that the recovery of fixed costs is assured regardless of consumption decisions. One option under this category would be to include all fixed costs in the customer charge; however, this would not be truly based on the cost of service since it does not recognize that some costs are a function of demand and system utilization. A second

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[66] *Id.*, Item 10.

[67] *Id.*, Item 12.

[68] *Id.*, Item 13.

option that better reflects cost of service would be to have cost-based customer charges and demand charges that fully recover fixed costs. Big Rivers notes that this second alternative would be difficult to implement because it has historically been impractical to incorporate demand charges in residential rates.[69] The member-cooperatives oppose the first option because it includes all fixed distribution costs, both customer-related and demand-related, in the customer charge portion of the rates. They state that demand-related costs are incurred as a function of load and that demand charges should be used to recover demand-related costs.[70] A second category of rate design options for removing the throughput incentive is a more indirect approach that would allow the cooperative to recapture, through a surcharge, the net revenue erosion occurring due to sales reductions from conservation measures.[71]

The member-cooperatives state that it is imperative that the costs of energy efficiency be recognized in revenue requirements and, correspondingly, in rates. They state that expenses and revenue erosion, net of savings, related to energy efficiency, will increase revenue requirements on a dollar-for-dollar basis. Capitalized investments in energy efficiency would need to be funded through equity capital from margins, debt capital, or a combination thereof. Regardless of the funding mix, capitalized investments in energy efficiency would increase a cooperative's margin requirement. The member-cooperatives believe that a higher Times Interest Earned Ratio ("TIER")

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[69] *Id.*, Item 14(a).

[70] Big Rivers' Response to Staff's Data Request of April 13 2009, Item 13 (filed Apr. 27, 2009).

[71] Big Rivers' Response to Staff's Data Request of March 16, 2009, Item 14(a) (filed Mar. 30, 2009).

may be required by a cooperative to fund capitalized investments in energy efficiency initiatives. In addition, compared to a DSM adder, the Big Rivers member-cooperatives believe a charge per meter is a simpler and more certain way to recover the revenue requirement. Even though there is not a direct cost relationship, it may be more appropriate from a cost-of-service viewpoint to recover energy efficiency costs based on usage.[72]

Big Rivers and its member-cooperatives recognize that, when a distribution utility relies upon energy sales to recover fixed costs and generate margins or profit, positive results from investing in energy efficiency may potentially have negative impacts on the utility's financial performance. It is their position that moving more toward cost-based rates is the best strategy.[73]

Duke Kentucky

Duke Kentucky agrees with the standard in that incentives should be aligned with the cost-effective delivery of energy efficiency. However, it does not believe formal adoption of the standard is necessary because the DSM statute provides the Commission with sufficient flexibility to encourage energy efficiency.[74]

Duke Kentucky believes that energy efficiency needs to be placed on a level playing field with supply-side options. While moving toward providing the utility with incentives for the successful management of energy efficiency programs is a move in

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[72] Big Rivers' Response to Staff's Data Request of April 13 2009, Item 5 (filed Apr. 27, 2009).

[73] Big Rivers' Response to Staff's Data Request of March 16, 2009, Item 14(b) (filed Mar. 30, 2009).

[74] Direct Testimony of Richard G. Stevie at 6 (filed Jan. 12, 2009) ("Stevie Testimony").

the proper direction, Duke Kentucky believes there must be a mechanism in place that both creates value for customers and provides an incentive for utilities to invest in energy efficiency and promote market innovation.[75, 76] To increase energy efficiency investments, Duke Kentucky believes utilities should be permitted to receive timely recovery of energy efficiency related costs. Duke Kentucky also believes that utilities should offer a myriad of energy efficiency programs for customers, including home energy audits and demand response and conservation initiatives, as well as educational opportunities.[77]

Duke Kentucky states that DSM has been used successfully in Kentucky to help maintain the proper balance between the needs of consumers for reliable power at fair, just and reasonable rates and the ability of utilities to generate and distribute that power.[78]

Duke Kentucky believes the throughput incentive and other disincentives to energy efficiency must be removed. It testified that, because energy efficiency programs reduce sales, utilities have a natural incentive to focus more on supply-side options than demand-side options. According to Duke Kentucky, simple recovery of lost

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[75] *Id.* at 7.

[76] Duke Kentucky developed a program entitled Save-A-Watt to address this problem. The request to allow the implementation of the Save-A-Watt program was withdrawn so that Duke Kentucky can learn from the experiences of other Duke companies that have already received approval for the Save-A-Watt program in other states.

[77] Stevie Testimony at 8.

[78] *Id.* at 9.

margins and decoupling of rates are two of the methods that can be used to remove the throughput incentive.[79]

Duke Kentucky does not support inclining block rates. Its position is that there is a common misconception that "high" usage is wasteful and "low" usage is inherently efficient. Since usage can be influenced by many factors, including housing and family size, the link between usage and cost, or efficiency versus inefficiency, after some predetermined point for rate design purposes, is not at all clear.[80]

Duke Kentucky believes that there are ways to promote energy efficiency other than imposing higher rates through an inclining block rate structure. It points out that many customers, especially residential customers, may not have the time or sophistication to manage energy consumption on their own to avoid higher price blocks, and could potentially face an increase in their bill.[81]

Duke Kentucky supports the general concept that rates for all customer classes should approximate the cost of providing these customers with service. Duke Kentucky states that encouraging energy efficiency, while important, must be in alignment with the cost of service for the benefit of both the customer and the utility.[82] Base rate designs must take into account a number of factors, including cost of service, the utility's load data, peak, and customer characteristics. Duke Kentucky believes that rate design

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[79] *Id.* at 7.

[80] Duke Kentucky's Response to Staff's Data Request of March 16, 2009, Item 27 (filed Mar. 30, 2009).

[81] Stevie Testimony at 8.

[82] Direct Testimony of Jeffrey R. Bailey at 5 (filed Jan. 12, 2009) ("Bailey Testimony").

alternatives such as inclining or declining block rate structures should be justified and supportable through competent studies.[83]

Duke Kentucky contends that declining block rate structures can be used to recover fixed costs in the early rate blocks to aid the utility in revenue stability or to recover the customer component of costs not recovered in the customer charge. It believes that declining block rate structures are justified when improved load factor associated with the increase in usage warrants a lower price because higher load factor customers impose less demand as a function of usage than lower load factor customers. Higher load factor customers should have a lower per-unit cost; otherwise, they would contribute excessively to the fixed costs of the utility.[84]

An inclining block rate structure implies that increased usage is inefficient and lower usage is efficient. Duke Kentucky explained that an inclining block rate will not encourage reduced usage during particular periods such as peak periods unless it is coupled with time-of-use rates. However, such rates may serve various policy goals, including "lifeline" rates and conservation. Duke Kentucky explained that inclining block rate structures have also been used when attempting to reflect marginal costs; however, without a time-differentiated rate, there is no way to determine whether the usage at any point during the monthly billing period is truly on the margin. Without evidence of disproportionately increased on-peak usage as energy consumption rises, an inclining

[83] *Id.* at 6.

[84] *Id.*

block rate structure is not justified and Duke Kentucky's data does not suggest that such a relationship exists.[85]

Duke Kentucky reviewed the characteristics of residential customers to examine the relationship between demand and energy use, both on a coincident and non-coincident basis, and how these load characteristics might impact operating costs during seasonal and time-of-use periods.[86] Duke Kentucky found that, although residential load factor improves more significantly beyond 2,000 kWh, the number of customers that, on average, use more than 2,000 kWh per month is small. Therefore, a declining block rate structure somewhere beyond 2,000 kWh was not warranted. Duke Kentucky examined the demand imposed by these customers at the time of system peak and determined that, as consumption increases, load imposed at the time of system peak also increases proportionately. The analysis supported the position that the overall structure of residential rates should be a single (flat) energy charge for all kWh consumed.[87]

Duke Kentucky argues that the margin from implementing energy efficiency programs should be equal to or greater than that which can be earned from supply-side options. In its Save-A-Watt application, Duke Kentucky proposed that the margin be

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[85] *Id.* at 7.

[86] *Id.*

[87] *Id.* at 13-14.

capped at 15 percent of program costs to eliminate the risk that its earnings on energy efficiency might be considered unlimited.[88]

Duke Kentucky believes its current residential rate design, a flat charge for all kWh in addition to a customer charge, reasonably promotes conservation. As kWh use increases, the amount of demand contributed to the system peak increases proportionally. The analysis supports a single charge for all kWh and tends to refute the need for declining or inclining block rates. Since its residential customer charge is well below cost, the effects of declining sales are exacerbated when fixed costs that should be recovered in the customer charge must be recovered in the energy charge.[89]

Both of Duke Kentucky's rates for commercial service have a declining block energy charge and are designed to reduce per-unit costs to customers that can improve load factor. The energy charges include some fixed costs so that, as customers improve load factor (and coincidence with peak), additional demand-related costs are collected for the greater imposition of on-peak costs. Since improvements in load factor would also include additional usage in off-peak periods, this tilted design reasonably reflects cost and, therefore, does not overtly penalize or encourage additional usage.[90]

Duke Kentucky states that its tariff offerings are consistent with the EISA 2007 PURPA Amendments. Duke Kentucky's tariffs include an Electric Real Time Pricing

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[88] Duke Kentucky's Response to Staff's Data Request of March 16, 2002, Item 32 (filed Mar. 30, 2009).

[89] Duke Kentucky's Response to Staff's Data Request of March 16, 2002, Item 25 (filed Mar. 30, 2009) and Duke Kentucky's Response to Staff's Data Request of April 13, 2009, Item 18 (filed Apr. 27, 2009).

[90] Duke Kentucky's Response to Staff's Data Request of March 16, 2002, Item 26 (filed Mar. 30, 2009).

Rate which is a voluntary tariff that offers non-residential customers the opportunity to manage their electric costs based on day-ahead market price quotes by either shifting load from higher-cost to lower-cost pricing periods or adding new load during lower-cost pricing periods. This tariff is available to non-residential customers taking service under various distribution and transmission voltage rate schedules. Seven customers are currently taking advantage of this tariff offering.[91]

Duke Kentucky generally supports decoupling to fully realize the potential of energy efficiency. Because energy efficiency programs reduce sales, utilities have a natural incentive to focus more on supply-side options than demand-side options. Methods to remove the throughput incentive include revenue-per-customer models, restructuring of rates, and even the implementation of formula rates. Duke Kentucky has not determined which model it would support, and would urge caution in prescribing a single decoupling methodology for all electric utilities in Kentucky.[92]

In summary, Duke Kentucky believes that, regarding both the energy efficiency and rate design aspects of the standard, regulatory mechanisms are already in place for utilities to propose energy efficiency programs and changes to rate structures, and for the Commission to evaluate and decide whether to approve the proposals.[93]

EKPC and its Member-Cooperatives

EKPC and its member-cooperatives believe the Commission already has the authority to achieve the intent of the EISA 2007 Rate Design Standard and that it does

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[91] Bailey Testimony at 15.

[92] *Id.*, Item 28 and Item 29.

[93] Stevie Testimony at 10.

not need to adopt the standard. According to EKPC, it has established tariffs at the wholesale level promoting the national Energy Star standards for homes and manufactured homes through the Touchstone Energy Home Program and Touchstone Energy Manufactured Home Programs and offers a direct load-control program for water heaters and air conditioners. EKPC has also assisted its member-cooperatives with the development and deployment of various energy efficiency programs. At the retail level, EKPC's member-cooperatives offer and promote a variety of energy efficiency tariffs and programs to their member-consumers.[94] EKPC and its member-cooperatives believe the current energy efficiency offerings are consistent with the last policy option listed in the EISA 2007 Rate Design Standard.[95]

In its 2008 rate case,[96] EKPC proposed to implement significant rate design changes in its Phase II rate proposal. It proposed that its wholesale rates move to a cost-based structure where more fixed costs would be recovered through the demand charge component of rates with less being recovered through the energy charge. EKPC and its member-cooperatives believe that the adoption of cost-based retail rate structures is consistent with the EISA 2007 Rate Design Standard, will remove disincentives to energy efficiency, and will encourage energy efficiency by sending appropriate pricing signals to the customers. Since cost-based rate structures move the recovery of fixed costs from the energy charge to the customer charge, EKPC and its

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[94] Direct Testimony of Isaac S. Scott at 3 (filed Jan. 12, 2009) ("Scott Testimony").

[95] *Id.* at 3-4.

[96] Case No. 2008-00409, General Adjustment of Electric Rates of East Kentucky Power Cooperative, Inc. (Ky. PSC Mar. 31, 2009).

member-cooperatives will be better able to promote additional energy efficiency programs without harming the cooperatives financially.[97] EKPC's Phase II rate proposal was to have become effective one year after its Phase I rates became effective. However, the Phase II proposal was dropped as part of the settlement agreement reached in that case. The Commission accepted the settlement agreement but stated in its Order:

> While there will be no Phase II rate adjustment under the terms of the Settlement, the Commission is very much interested in cost-of-service-based rates and demand-side management programs that incentivize both the utility and customers to practice energy efficiency in a cost-effective manner. Given the expectation that it will file a new rate application within the next few years, the Commission anticipates that EKPC will address these issues at that time.[98]

Under their current rate design, EKPC and its member-cooperatives believe it will be difficult to promote energy efficiency programs that result in lower kWh sales when the cooperatives will not be able to recover their fixed costs. It is their position that the simplest and most direct solution to removing the throughput incentive is to adopt rate designs based on established cost-of-service methodologies. Making this change in rate design would encourage EKPC and its member-cooperatives to promote energy

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[97] Scott Testimony at 4.

[98] Case No. 2008-00409, General Adjustment of Electric Rates of East Kentucky Power Cooperative, Inc., at 6 (Ky. PSC Mar. 31, 2009). Since its 2008 rate case, EKPC has had another general rate case, Case No. 2010-00167. While it did not address the issues cited in our March 31, 2009 Order in that case, EKPC has engaged a consultant to perform a comprehensive rate design feasibility study for itself and its member cooperatives which will permit it to address those issues in a future proceeding.

efficiency programs without the risk of financial harm caused by the failure to recover fixed costs.[99]

EKPC and its member-cooperatives believe the adoption of energy efficiency should be a consideration, but not a goal, of retail rate design. The goal of rate design, either wholesale or retail, should be rates that are fair, just, and reasonable, as provided in KRS 278.030. The statute also provides that the classification of a utility's service, patrons, and rates may take into account the nature of the use, the quality used, the quantity used, the time when used, the purpose for which it is used, and any other reasonable consideration.[100]

In separate testimony, Fleming-Mason Energy's President and Chief Executive Officer supported the testimony filed by EKPC. Fleming-Mason Energy also stated that the Commission should follow the principle that fixed costs be recovered through fixed charges and variable costs be recovered through variable charges.[101] Mr. Perry stated that Fleming-Mason's current rate design did not align the interests of the cooperative and its customers to energy conservation and energy efficiency, in part because a significant portion of fixed costs are recovered on a per-kWh basis through its energy charge.[102] As a result, Fleming-Mason Energy has a financial incentive to increase sales between rate cases.

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[99] Scott Testimony at 5.

[100] *Id.* at 7.

[101] Direct Testimony of Christopher S. Perry at 1-2 (filed Jan. 6, 2009) ("Perry Testimony").

[102] *Id.* at 2-3.

Fleming-Mason Energy believes that a cost-of-service-based customer charge is the easiest way for the electric distribution cooperatives to mitigate the throughput incentive as this would break the link between the level of sales and recovery of fixed costs and margins.[103]

Owen Electric noted that some of its customers do not have the disposable cash necessary to invest in their homes and suggested that the Commission could allow a charge to be placed on the bill similar to a DSM surcharge. For example, a reasonable per-meter charge would allow the cooperative to fund investments. Another method to promote energy efficiency would be for the Commission to allow a higher TIER to be recovered by EKPC and its member-cooperatives.[104] In its 2008 rate case, Owen Electric requested and was granted a TIER of approximately 2.0. According to Owen's response to a Staff data request, if a TIER of 2.5 were recovered, the additional funds could be used for efficiency investments.[105]

To varying degrees, 12 of EKPC's 16 member-cooperatives do not support inclining block rates for various rate classes. Two either have no preference or have not formulated a position. Grayson RECC and Owen Electric support inclining block rates. Grayson RECC supports inclining block rates that would be beneficial for low-usage residential customers whose usage would generally fall in off-peak times. Owen Electric supports inclining block rates when included as a part of a comprehensive

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[103] *Id.* at 4.

[104] EKPC's Response to Staff's Data Request of March 16, 2009, Item 40, at 4 (filed Mar. 30, 2009).

[105] *Id.*

energy innovation strategy. From its perspective, the major barrier to inclining rates is the fact that its customer charge does not adequately cover its fixed costs. A second barrier identified by fellow EKPC member-cooperatives is that low-income members would be adversely affected by inclining rates. The remaining barrier is mobile and manufactured homes that offer few, if any, economical ways to improve their efficiency.[106]

There is no consensus among EKPC and its member-cooperatives regarding decoupling. EKPC does not support decoupling and does not believe the Commission should implement decoupling to promote energy efficiency.[107] EKPC suggests other approaches to remove the throughput incentive, including lost revenue recovery adjustments or mechanisms, as provided for in the DSM statute, and straight fixed-variable rate design ("SFV"), which is similar to EKPC's proposed cost-based rate structure. EKPC believes that decoupling unnecessarily complicates the recovery of fixed and variable costs in order to eliminate the throughput incentive when there are other more established and workable approaches available. According to EKPC, effective decoupling programs must include a periodic automatic true-up mechanism to address the over- or under-recovery of target revenues, as well as adjustments to deal with the impacts of weather and changes in the economy. There are concerns that decoupling could result in more frequent changes in rates, higher bills for customers who do not participate in energy efficiency programs, impacts on low-income users who

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[106] *Id.*

[107] *Id.*, Item 47 and Item 48.

would be least able to respond to changes in bills, and creation of unfair transfers between customer classes.

EKPC's member-cooperatives are fairly evenly split on the issue of decoupling. Two cooperatives have not developed opinions, five do not support decoupling, and the rest believe decoupling encompasses positive elements and state that they could support properly developed decoupling.

As to the SFV rate design, EKPC stated that it views such a rate design as an alternative to decoupling. The SFV rate design relies on traditional cost-of-service based rates to remove the recovery of fixed costs from the variable component of rates and break the link to the level of kWh sales.

Farmers RECC believes that the throughput incentive needs to be eliminated for distribution cooperatives to be able to recover their costs while actively assisting their members in reducing usage. The SFV rate design is the most easily understood and managed process for achieving that result. However, other solutions have been promoted such as decoupling and lost revenue recovery. Farmers RECC does not oppose studying other methodologies as long as they are fair to rate-payers, easy for rate-payers to understand, evoke the intended customer response, and allow the cooperative to fairly recover its costs to serve.

Some of the cooperatives indicated that they are not fully cognizant as to how decoupling would apply to distribution cooperatives which have two types of costs: consumer-related costs and distribution-demand-related costs. Many consider these costs to be completely fixed costs in the short term. The only variable costs that are incurred in the short run are wholesale power costs. The SFV rate design may have

some merit; however, the ideal rate design would be one that follows the traditional concept that rates should be based on the cost to serve. The best approach that could be taken in rate design at present would be to establish a customer charge that recovers the revenue requirements to connect a consumer to the distribution grid. This approach would put a smaller portion of distribution costs "at risk" for any energy efficiency applications that may be adopted. If a traditional rate design does not allow for energy efficiency, then decoupling may be a concept to consider.

EKPC and its member-cooperatives also addressed the fact that they have not sought authorization to implement a DSM surcharge. EKPC stated that it has not sought approval to implement a DSM surcharge because it believes that it is more appropriate to recover DSM-related costs through base rates rather than through a DSM surcharge.[108] This is primarily due to administrative issues related to the levels of DSM costs and what the adoption of a DSM Surcharge at the wholesale level would mean for the member-cooperatives. EKPC's DSM-related costs have annually been approximately $0.002 per kWh sales to the member-cooperatives. According to EKPC, if it sought and was granted approval for a DSM Surcharge, its member-cooperatives would either have to absorb the DSM Surcharge or be forced to establish a DSM Surcharge to pass through any DSM Surcharge established by EKPC.[109]

Generally, the member-cooperatives state that their DSM costs to date have not justified the need for a surcharge. However, some member-cooperatives noted that

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[108] *Id.*, Item 42.

[109] EKPC's Response to Staff's Data Request of April 16, 2009, Item 2 (filed Apr. 30, 2009).

they have chosen to include DSM costs in their base rates. Fleming-Mason Energy believes that, in the future, a DSM surcharge will be used as efforts to reduce energy usage are increased.[110]

Even though EKPC and its member-cooperatives believe that it will be difficult to promote an energy efficiency program that results in lower energy sales, each described how their rate design supports energy efficiency. EKPC notes that the inclusion of flat energy charges in rate design was originally developed to promote energy conservation rather than support energy efficiency. The flat rate should promote conservation and eliminate a perceived incentive for customers to use more electricity, thus promoting objectives of DSM programs.[111] The Energy Information Administration defines energy conservation as any behavior that results in the use of less energy. Energy efficiency is the use of technology that requires less energy to perform the same function. A CFL bulb that uses less energy than an incandescent bulb to produce the same amount of light is an example of energy efficiency. The decision to replace an incandescent light bulb with a CFL bulb is an example of energy conservation.[112]

Big Sandy Electric, Clark Energy, and Jackson Energy state that their respective rate designs do not promote energy efficiency.

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[110] Fleming-Mason Energy's Response to Staff's Data Request of March 16, 2009, at 4 (filed Apr. 6, 2009).

[111] EKPC's Response to Staff's Data Request of March 16, 2009, Item 44 (filed Mar. 30, 2009).

[112] *Id.* at 3.

Blue Grass Energy believes that, to fully support energy efficiency, a cost-based rate structure should be implemented with all fixed costs in the customer charge and all variable costs in the energy charge.

Cumberland Valley Electric, Farmers RECC, Nolin RECC, and South Kentucky RECC state that flat rate structures can be interpreted to encourage energy efficiency in that no reduced or discounted rate per unit of usage is given for higher usage levels.

Grayson RECC believes demand charges encourage overall efficiency while off-peak/on-peak rates encourage shifting load to off-peak usage.

Inter-County Energy notes that flat rates were recommended and encouraged by the AG in its last rate case as a price signal to promote energy conservation, not energy efficiency.

Owen Electric believes that Time-of-Day (off-peak) tariffs do not promote energy efficiency to the end consumer, rather that they are designed to shift load from peak demand times to lower demand times when more efficient and economical base-load generating resources are available to use for power production. Under its current rate design, Owen Electric collects all of its margins and a significant portion of fixed costs through its energy charge.[113] Thus, any reduction in kWh sales due to energy innovation, efficiency, conservation, and distributed energy efforts results in Owen Electric not recovering its fixed costs and margin, which is financially harmful. Owen Electric believes the easiest way for a cooperative to mitigate the throughput incentive is

[113] Since the time of its response, Owen has received a rate increase in which its rate design was revised to recover a greater portion of fixed costs via its customer charges.

to increase its customer charge to a level that is justified based on cost of service. The SFV rate design that is common in the natural gas industry takes this to the maximum level, with all of a utility's fixed cost recovered through a monthly customer charge. This completely breaks the link between the recovery of fixed cost and margins and the level of kWh sales.

Salt River Electric states that it has sales contracts that allow for increased per-kWh charges if the member exceeds contract demand. It also has a minimum load power factor for its larger customers that encourages efficiency and has interruptible riders that help defer the need for additional generation capacity.

Shelby Energy notes that its Large Power Rate 2 for Commercial and Industrial customers encourages peak-demand conservation by its price relationship between kW demand and kWh energy, with the energy price blocks tied to the peak demand.

Taylor County RECC notes that, as each kWh is priced the same, its members have an incentive for efficient usage by being able to lower their bills by reducing usage.

Licking Valley RECC has not developed a conclusion as to whether its rates support energy efficiency.[114]

With respect to the throughput incentive, EKPC and all 16 member-cooperatives are in agreement that fixed charges (demand charges at wholesale, customer charges at retail) should be increased to recover a much larger portion of fixed costs, with a

[114] EKPC's Response to Staff's Data Request of March 16, 2009, Item 44 (filed Mar. 30, 2009).

corresponding decrease in energy charges, in order to mitigate the throughput incentive and encourage the pursuit of energy efficiency programs.[115]

Kentucky Power

Kentucky Power sees no need for the Commission to adopt the EISA 2007 Rate Design Standard. Kentucky Power is not aware of any alternative standard the Commission should consider.[116]

Energy efficiency is not defined by EISA 2007 or PURPA; therefore, Kentucky Power believes that the Commission and the customers should be indifferent to whether the resource that is deployed is a supply-side measure or a demand-side measure.[117]

Collectively, the economic purpose of energy efficiency, including demand reduction programs, should be to reduce customer load. In any case, the program or measure must be cost-effective.[118]

Kentucky Power stated that its rate for residential service encourages energy efficiency by charging the same price for all kWh, causing the total bill to increase proportionately with usage. However, to the extent that the energy charge includes residual customer-related costs not recovered in the service charge, or the rate does

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[115] EKPC's Response to Staff's Data Request of April 16, 2009, Item 7 (filed Apr. 30, 2009).

[116] Wagner Testimony at 20.

[117] *Id.* at 4.

[118] *Id.* at 11.

not reflect full cost of service, the efficiency price signal may be intensified or diluted, respectively.[119]

Kentucky Power stated that Tariff S.G.S., its small general service tariff, which has no customer charge and a declining block energy rate, does not support energy efficiency in that it does not provide the proper price signal to customers concerning the cost of each kWh consumed. The elimination of declining block energy rates in this tariff must be tempered by recognition of the potential adverse impacts on individual customer bills. It is Kentucky Power's position that, to the extent that the rate does not reflect full cost of service or that customer-related costs are collected in the energy charge, the price signal is distorted.[120]

Kentucky Power currently offers a variety of tariffs and tariff provisions to its customers that promote the efficient use of electrical energy.[121] Available tariffs include energy storage/load management time-of-use tariffs which are available to most customers and interruptible/curtailable tariff offerings which are available to its larger customers. Time-of-use tariffs allow customers who are both willing and able to utilize them to reduce their own costs, but also reduces the cost of electricity for all customers. The electrical system is improved by reduction in peak usage that is shifted to off-peak time periods. Interruptible tariffs contain features that require participating customers to reduce load upon request. Kentucky Power may request load reductions when

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[119] Kentucky Power's Response to Staff's Data Request of March 16, 2009, Item 68 (filed Mar. 30, 2009).

[120] *Id.*, Item 69.

[121] Wagner Testimony at 15.

available capacity is constrained, market prices are high or an emergency condition exists.[122]

Kentucky Power has also taken steps to modify its rate design and tariff offerings to promote energy efficiency. Kentucky Power has offered net metering service to its customers since May 2005. In 2006, it removed the declining block structure from its standard residential tariff. In 2008, an Experimental Real-Time Pricing Tariff for its large commercial and industrial customers was implemented and it instituted a Green Pricing Option Rider.[123] While net metering and green pricing may not generally be thought of as "energy efficiency" programs, both programs encourage the use of renewable energy resources, which in turn may provide for more efficient use of all energy resources. At the time of its testimony, Kentucky Power had no net-metering customers and less than 15 green-pricing customers.[124]

Kentucky Power believes that continued movement toward full cost-based rates, including customer charges, demand charges, and commercial and industrial tariffs which encourage customers to improve their load factors, are further actions that can be taken to promote energy efficiency. Also, a Smart Grid system would allow Kentucky Power to offer additional programs and tariffs such as direct load control, more dynamic time-of-use tariffs, and critical peak pricing.[125] Only a small percentage of Kentucky Power's customers have elected to take service under the load management or critical

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[122] *Id.* at 15-16.

[123] *Id.*

[124] *Id.* at 16.

[125] *Id.* at 17.

peak pricing tariffs (less than one-half of one percent).[126] Kentucky Power believes that most customers have decided that the economic rewards associated with participating in the various energy efficiency programs do not outweigh the inconvenience or other costs associated with changing their usage characteristics.[127]

Kentucky Power stated that it intends to continue its efforts to move its customer charges toward full cost of service, but it believes that increased customer charges reflecting full cost of service neither promote nor inhibit energy efficiency.[128] In addition, when asked why so few customers are participating in its energy efficiency and load management programs, Kentucky Power stated that there are many potential reasons that energy efficiency and load management programs may not achieve higher participation levels; among those are the historically low cost of electricity in the Commonwealth, along with the customers' perceived inconvenience of participating in these programs.[129]

As stated earlier, Kentucky Power takes the position that rate payers and utilities should be indifferent to whether energy efficiency is achieved through supply-side or demand-side initiatives and that supply-side initiatives should be eligible for the same treatment accorded demand-side initiatives under KRS 278.285.[130] Kentucky Power

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[126] *Id.* at 18-19.

[127] *Id.* at 19.

[128] Kentucky Power's Response to Staff's Data Request of April 16, 2009, Item 27 (filed Apr. 30, 2009).

[129] Kentucky Power's Response to Staff's Data Request of March 16, 2009, Item 74 (filed Mar. 30, 2009).

[130] Wagner Testimony at 18.

encourages the Commission to expand its use of the ratemaking mechanisms currently employed for demand-side energy efficiency projects to supply-side projects.[131]

Kentucky Power believes the Commission's authority under KRS 278.285, the DSM statute, meets the requirements of the EISA 2007 Rate Design Standard. According to Kentucky Power, some of its sister operating companies have proposed Kentucky's DSM statute as a model for other jurisdictions. In particular, the criteria for the approval of DSM programs afford utilities and the Commission flexibility in the design and approval of demand-side programs. Equally important, KRS 278.285 provides for recovery of program costs, recovery of net lost revenues, shared savings, and a return on expenditures that allows resources invested in DSM to be viewed by shareholders the same as resources invested in new generation. In addition, the statute also permits contemporaneous recovery by a utility of costs and a return on expenditures through a rider with true-ups.[132]

Kentucky Power supports cost-based ratemaking, and thus would support inclining block rates.[133] Kentucky Power states that moderate forms of decoupling can and should be entertained, provided that the Commission has the flexibility to utilize a case-by-case approach to develop an appropriate form of decoupling for a particular utility. Limited decoupling straddles the fence between traditional ratemaking and full decoupling. This approach decouples the recovery of specific costs from volumetric

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[131] *Id.* at 19-20.

[132] *Id.* at 17-18.

[133] Kentucky Power's Response to Staff's Data Request of March 16, 2009, Item 70 (filed Mar. 30, 2009).

recovery mechanisms. It is more flexible and encourages a healthy business environment for electric utilities, while also providing appropriate price signals to customers. It is Kentucky Power's opinion that limited decoupling is the most acceptable of decoupling options.

Variations of limited decoupling include: (1) net lost margin recovery rider mechanism; (2) formula rates; (3) real-time pricing; (4) riders and adjustment mechanisms; and (5) rate of return incentives.[134]

Finally, Kentucky Power noted that the Kentucky Legislature and the Commission have already implemented a form of decoupling to support energy efficiency with Section 3 of KRS 278.285, the DSM statute.[135]

KU and LG&E

KU and LG&E stated that they do not believe that the Commission should adopt the EISA 2007 Rate Design Standard. KU and LG&E believe the Commission has the authority to approve new energy efficiency and DSM programs pursuant to KRS 278.285, the DSM statute, which also allows the Commission to approve full cost-recovery, recovery of lost sales revenues, and "financial rewards" for implementing cost-effective programs. It is KU and LG&E's position that these cost recovery and financial incentive provisions serve to "align utility incentives with the delivery of cost-effective energy efficiency" and promote "energy efficiency investments."[136]

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[134] *Id.*, Item 72.

[135] *Id.*, Item 73.

[136] Bellar Testimony at 4.

In their testimony, KU and LG&E listed their current rate design offerings that promote energy efficiency:[137]

Curtailable Service Riders	Time-of-Day Rates
Net Metering Service	Load Reduction Incentive (LRI)
Residential Conservation Program	Commercial Conservation Program
Demand Conservation Program	Responsive Pricing Program – LG&E
Real-Time Pricing	Energy Star New Homes
WeCare Program	Residential and Commercial HVAC Diagnostics and Tune Up Program

KU and LG&E believe all rates should be cost-based in order to send accurate pricing signals to customers. They also believe that greater energy efficiency may be possible through the use of time-based rates and enhanced metering and display technologies. KU and LG&E believe that certain types of cost-based rate structures (responsive pricing and real-time pricing) will result in greater efficiency than inclining block rate structures, which penalize greater energy usage irrespective of the cost of producing that energy.[138]

KU and LG&E do not support inclining block rates for either residential or general service when they are simply a fixed seasonal differential to which customers cannot respond. In Case No. 2003-00433,[139] the Commission approved eliminating LG&E's

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[137] *Id.* at 5-6.

[138] KU's and LG&E's Response to Staff's Data Request of March 16, 2009, Item 87 (filed Mar. 30, 2009).

[139] 2003-00433, Adjustment of Gas and Electric Rates of Louisville Gas and Electric Company (Ky. PSC Jun. 30, 2004).

inclining block rates because they were not cost-based. The Commission expressed its concern that eliminating such rates might adversely impact energy efficiency. In 2006, LG&E reported there had been no discernable impact as a result of the elimination of the seasonal differential.[140]

KU and LG&E stated that they believe that decoupling is a ratemaking tool available to the Commission, but that legislation explicitly granting the Commission decoupling authority could add clarity to that authority and ensure its integrity. KU and LG&E further believe there are circumstances under which it may be appropriate for the Commission to employ revenue decoupling. They believe that the current DSM cost recovery statute, KRS 278.285, provides for a form of decoupling that KU and LG&E support, namely the recovery of lost revenues and financial incentives for implementing energy efficiency programs. KU and LG&E also support allowing annual reviews of utilities' financial results, with rate adjustments, to ensure utilities' revenues remain consistent with their approved rate designs.[141]

In addition to rate design modifications, KU and LG&E believe that utilities should be able to capitalize all non-expense components of energy efficiency programs, to be recovered as part of energy efficiency program filings. Additional financial incentives, such as a durable incentive return on equity, will further encourage the development and implementation of energy efficiency programs. Another possible incentive structure

[140] KU's and LG&E's Response to Staff's Data Request of March 16, 2009, Item 88 (filed Mar. 30, 2009).

[141] *Id.*, Item 89.

could be fair, reasonable, and equitable distribution of energy efficiency program savings between customers and utilities.[142]

Sierra Club and Mr. Geoffrey Young

The Sierra Club and Mr. Geoffrey Young each filed comments recommending the Commission adopt the EISA 2007 Rate Design Standard.

The Sierra Club believes that the EISA 2007 Rate Design Standard's modifications to promote energy efficiency investments are desirable, clear, and also flexible. The EISA requires the rates charged by an electric utility to "align utility incentives with the delivery of cost-effective energy efficiency; and promote energy efficiency investments." Aligning utility financial incentives with the delivery of cost-effective energy efficiency and promoting energy efficiency investments is a desirable policy goal which the Commission should adopt.[143]

According to the Sierra Club, the problem this standard was designed to address is the throughput incentive. The Sierra Club believes the throughput incentive is a critical defect in the rate structures of all jurisdictional electric utilities because the utility is rewarded when it sells more electricity and punished if the customers begin to save large amounts of electricity. The Sierra Club believes each utility has a strong financial incentive to sell more electricity at all times, and has a similarly powerful incentive against helping its ultimate customers improve the efficiency with which they use electricity.[144]

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[142] *Id.*, Item 91.

[143] Sierra Club Comments at 4.

[144] *Id.* at 4.

It is the Sierra Club's position that Kentucky's electric utilities have operated much smaller DSM programs for the past 15 years than would have been economically optimal. It argues that the utilities have invested in new coal-fired power plants that have saddled customers with costs that are significantly higher than it would have cost to save the same amount of energy by improving end-use efficiency. Moreover, additional coal-fired power plants are now under construction and are certain to exert significant upward pressure on rates when they come on-line. According to the Sierra Club, these power plants may not have been needed if more energy-saving DSM programs had been instituted during the past 10 years.[145]

The Sierra Club believes that the Commission should adopt the EISA 2007 Rate Design Standard because its goals will be beneficial to Kentuckians.[146]

Mr. Young states that the absence of decoupling and the presence of the fuel adjustment clause provide a strong incentive for utilities to sell more electricity at all times and a disincentive to help their ultimate customers improve the efficiency with which they use electricity. To support his position, Mr. Young cites a 1989 report by David Moskovitz, now of the Regulatory Assistance Project, a resolution by the National Association of Regulatory Utility Commissioners related to that report, and the EPAct 1992.[147]

In response to EPAct 1992, the Commission conducted Administrative Case No. 341 which led to the enactment of KRS 278.285, the DSM statute. Mr. Young does not

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[145] *Id.* at 4-5.

[146] *Id.* at 5.

[147] Young Comments at 5-7.

believe the DSM cost-recovery mechanisms used by the utilities solve the throughput incentive issue even though they provide for the recovery of DSM program costs, lost revenue, and a shareholder incentive. Mr. Young expressed concern that the electric generation and transmission cooperatives and their member-cooperatives have never applied to the Commission for cost-recovery pursuant to KRS 278.285. Because each utility's rate structure leaves revenue coupled to the volume of electricity sales, the traditional incentive to sell more electricity at all times has been unaffected by the DSM cost recovery mechanism. As a result, Mr. Young concludes that the Commission has failed to implement the intent of the section of EPAct 1992 (removal of the throughput incentive). He believes Kentucky's utilities have operated much smaller DSM programs for the past 15 years than would have been economically optimal and have invested in new coal-fired power plants that have saddled customers with costs that are significantly higher than it would have cost to save the same amount of energy by improving end-use efficiency.[148]

Mr. Young believes the most effective way to eliminate the throughput incentive and put DSM on a more level playing field with supply-side resources is decoupling.[149]

Mr. Young cites the pilot DSM programs operated by LG&E and Duke Kentucky in the mid- to late-1990s that included a decoupling mechanism for the residential customer class. Mr. Young believes these programs sent the proper message about the relationship between energy efficiency and energy sales. However, Mr. Young

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[148] *Id.* at 8.

[149] *Id.*

believes the limited, pilot nature of the programs did little to affect the utilities' corporate culture regarding the throughput incentive.[150]

Finally, Mr. Young states that the rate structures now in effect for the IOUs allow these utilities to recover certain costs arising from their DSM activities, but simultaneously punish them severely if their customers reduce their energy consumption. In the cases of Big Rivers, EKPC, and their member-cooperatives, the existing rate structures reward the utility for selling more electricity at all times and penalize the utility severely for helping customers reduce energy use. He believes that it is essential for Kentucky to institute the EISA 2007 Rate Design Standard statewide and that the revenue and net income of utility companies must be decoupled from the amount of electricity they sell.[151]

Commission Decision – EISA 2007 Rate Design Standard

Although the EISA 2007 Rate Design Standard requires the consideration of several elements, the key elements are the promotion of energy efficiency investments and the alignment of utility incentives with the provision of cost-effective energy efficiency. In this proceeding, these elements have sometimes been further distilled into removal of the throughput incentive and consideration of decoupling.

Generally, the utilities indicate their support for the intent of the EISA 2007 Rate Design Standard but agree that the Commission does not need to adopt the standard. The utilities cite many factors but, most consistently, note the Commission's current statutory authority, most specifically KRS 278.285, the DSM statute. They support cost-

[150] *Id.* at 9-10.

[151] *Id.* at 10.

based rates or at least continued movement toward cost-based rates. Generally, the utilities do not support inclining block rates. Pursuant to the Commission's Order in Administrative Case No. 203,[152] the utilities have eliminated declining block rates for residential customers and established flat residential energy rates.[153]

There is minimal support among the utilities for decoupling and some confusion regarding the definition of decoupling by those opposing it. Many of the cooperatives support the SFV rate design, which is typically considered a modified form of decoupling. Duke Kentucky, Jackson Energy, Owen Electric, Kentucky Power, KU and LG&E would support decoupling under certain circumstances. All of the IOUs believe that the DSM statute provides for a form of decoupling.

The Commission fully agrees with and strongly supports the intent of the EISA 2007 Rate Design Standard but believes there is no need to require adoption of it or any other rate design standard. The Commission agrees with the utilities that we currently have adequate regulatory authority to meet the intent of the EISA 2007 Rate Design Standard. Further, the Commission finds that its adoption of the cost-of-service standard in its review of PURPA in Administrative Case No. 203 serves the same purpose as the proposed EISA 2007 Rate Design Standard. The Commission also

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[152] Administrative Case No. 203, The Determination with Respect to the Ratemaking Standards Identified in Section 111(d)(1)-(6) of the Public Utility Regulatory Policies Act of 1978 (Ky. PSC Feb. 28, 1982).

[153] In general, the PURPA Declining Block standard adopted by the Commission provides that the energy component of the rate may not decrease as kWh consumption increases except to the extent that the cost to serve decreases as consumption increases.

generally supports the position of the utilities that full cost-of-service rates would minimize the throughput incentive.

With regard to its regulatory authority, the Commission believes that it has the authority to allow the electric utilities to adopt any rate design or rate structure as long as it produces rates that are fair, just and reasonable. Specifically, the DSM statute gives the Commission authority to allow utilities to recover lost revenues due to DSM programs and to receive financial incentives for implementing cost-effective DSM programs. These two elements should minimize obstacles to investments in energy efficiency.

As to rate design and rate structure, the Commission notes its consistent position that rates should be cost-based. That position was set forth in Administrative Case No. 203 where, among other standards, the Commission adopted the PURPA cost-of-service standard which requires the rates charged to each class to be designed to reflect the cost to serve each class. Along with the PURPA objectives of conservation, utility efficiency and equitable rates, the Commission added the objectives of rate continuity, revenue stability and understandability.[154] As a result, the Commission has consistently applied the principle of "gradualism" in its deliberations relating to proposed increases to the utilities' customer charges.

[154] Administrative Case No. 203, The Determinations with Respect to the Ratemaking Standards Identified in Section 111(d)(1)-(6) of the Public Utility Regulatory Policies Act of 1978, at 7-9 (Ky. PSC Feb. 28, 1982).

After issuing its final Order in Administrative Case No. 203, the Commission affirmed this practice in Case No. 8429,[155] a Kentucky Power rate case, and Case No. 8616,[156] an LG&E rate case. In Case No. 8429, the Commission stated:

> In the Commission's final Order in Administrative Case No. 203, Ratemaking Standards Identified in the Public Utility Regulatory Policies Act of 1978, this Commission held that costs should be the basis for rates. Also, in that Order, the Commission recognized another of its objectives—rate continuity. Given the Commission's objectives of cost-based rates and rate continuity, the Commission finds the gradual approach for reallocating class revenues as proposed by Kentucky Power to be more reasonable than the proposal by Armco. Therefore, the increased revenues should be allocated in similar proportions to those proposed by Kentucky Power.[157]

Armco had proposed an increase to the residential class approximately eight to 10 percent higher than that proposed by Kentucky Power. In Case No. 8616, the Commission noted that LG&E had proposed a gradual change in revenue allocation and stated, "[i]ts approach recognizes the ratemaking objectives of revenue stability, rate continuity and understandability, as well as relative risk differentials between classes. Therefore, the increased revenues should be allocated in similar proportions to those proposed by LG&E."[158]

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[155] Case No. 8429, General Adjustments in Electric Rates of Kentucky Power Company (Ky. PSC Jun. 18, 1982).

[156] Case No. 8616, General Adjustment in Electric and Gas Rates of Louisville Gas and Electric Company (Ky. PSC Mar. 2, 1983).

[157] Case No. 8429, General Adjustments in Electric Rates of Kentucky Power Company, at 29 (Ky. PSC Jun. 18, 1982).

[158] Case No. 8616, General Adjustment in Electric and Gas Rates of Louisville Gas and Electric Company, at 36 (Ky. PSC Mar. 2, 1983).

The AG also favored the principle of gradualism. As a result, in most rate cases filed with the Commission since late 1982, the electric utilities have requested gradual increases in their customer charges even when a cost-of-service study supported significantly higher customer charges than requested.

While in the past few years many rate cases have been settled, the Commission addressed the throughput incentive to some extent in Case No. 2008-00154,[159] an Owen Electric rate case. Owen Electric had requested authority to raise its residential customer charge from $5.64 to $11.20, even though its cost-of-service study indicated that the residential customer charge should be $21.92 per month. The Commission authorized Owen Electric to increase its residential customer charge to $10.87 per month.

This is one of the more significant increases in a residential customer charge the Commission has granted outside of rate cases that have been settled. Owen Electric's President and CEO stated that its current rates did not support energy efficiency in that a decrease in sales could cause financial harm, since the cooperative would recover less of its fixed costs and margin. While not stated directly in its Order, the Commission took notice of Owen Electric's concerns and authorized an increase in the customer charge near what was requested, in partial recognition of the need to mitigate the throughput incentive and encourage Owen Electric to follow through on its commitment to expand its energy efficiency programs.

[159] Case No. 2008-00154, Application of Owen Electric Cooperative, Inc. for Adjustment of Rates (Ky. PSC Jun. 25, 2009).

As with the EISA 2007 IRP Standard and other EISA 2007 standards, the Commission has several options regarding the EISA 2007 Rate Design Standard. We may adopt the standard, adopt a different rate design standard or not adopt any standard.

The Commission has determined that it will not require the electric utilities to adopt the EISA 2007 Rate Design Standard or any other rate design standard. We believe that the authority granted by the DSM statute, along with the ability to address rate structure and rate design issues in rate cases, provides flexibility to address the throughput incentive for the IOUs, Big Rivers, EKPC, and their member-cooperatives.

By this Order, the Commission reaffirms its prior decisions regarding the adoption of the PURPA cost-of-service standard. However, we caution the electric utilities that our review of proposed increases in residential and small commercial customer charges, as well as increases in the volumetric charges for those customer classes, will take into consideration the subject utility's menu of DSM and energy efficiency programs as well as the principal of gradualism, which the Commission also reaffirms.

The Commission also believes that it is appropriate to express its concern that Big Rivers and EKPC and their member-cooperatives have not adopted a DSM surcharge. Although the testimony in this proceeding and other documents provided by the cooperatives indicate their support of energy efficiency, the menu of DSM and energy efficiency programs they offer does not meet the diversity of programs or the level of commitment shown by the IOUs. The Commission recognizes the negative impact that reduced sales may have, especially for the distribution cooperatives. The

testimony of Fleming-Mason Energy's President and CEO clearly explains the negative financial impact of reduced sales. The Commission also recognizes that the predominantly rural service territories of the cooperatives may not lend themselves to the deployment of DSM and energy efficiency programs as well as the service territories of the IOUs.

In recent rate cases, the Commission has granted fairly significant increases in member-cooperatives' residential customer charges and, on occasion, has applied an entire revenue increase to the residential and small commercial classes. However, with the exception of Owen Electric, no cooperative has had a specific plan to increase its DSM and energy efficiency offerings.[160] The Commission is concerned that the position that DSM and energy efficiency costs should be recovered via base rates rather than a DSM surcharge may be detrimental to the cooperatives' investment in such programs. Although we provide no specific directive by this Order, the Commission will pursue its concern through its review of IRPs, rate cases and other cases as appropriate.[161]

The Commission believes that flat energy rates and a customer charge that more closely reflect the cost of service, along with the use of KRS 278.285, the DSM statute, provide the utilities with enough incentive and flexibility to make them indifferent to decreasing sales.

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[160] *Id.*

[161] The Commission recognizes that the review of IRPs is limited; however, the Commission believes that its broad investigative powers, as discussed by the electric utilities in this proceeding, give it the authority to address any concerns following the issuance of a staff report.

Energy Efficiency and Rate Design Standards for Natural Gas Utilities ("EISA 2007 Gas Energy Efficiency Standard" and "EISA 2007 Gas Rate Design Standard")

Section 532 of the EISA 2007 also includes a subsection that amends PURPA Section 303(b) for natural gas utilities and adds two standards. The two standards are as follows:

1. Energy Efficiency

   Each natural gas utility shall:

   - integrate energy efficiency resources into its plans and planning processes; and
   - adopt policies establishing energy efficiency as a priority resource.

2. Rate Design Modifications to Promote Energy Efficiency Investments

   The rates allowed to be charged by a natural gas utility shall:

   - align utility incentives with the delivery of cost-effective energy efficiency.

As set forth in the law, in complying with the EISA 2007 Gas Rate Design Standard, each state regulatory authority and each nonregulated natural gas utility shall consider:

- separating fixed-cost revenue recovery from the volume of transportation or sales service;
- providing utility incentives for the successful management of energy efficiency programs, such as allowing utilities to retain a portion of cost-reducing benefits accruing from the programs;
- promoting the impact of adoption of energy efficiency as one of the goals of retail rate design; and
- adopting rate designs that encourage energy efficiency for each customer.

The first standard, the EISA 2007 Gas Energy Efficiency Standard, relates to the integration of energy efficiency into the planning process and the adoption of policies establishing energy efficiency as a priority resource and is similar to the EISA 2007 IRP Standard for electric utilities. The second standard, the EISA 2007 Gas Rate Design Standard, relates to modifications to rate design to promote energy efficiency investments and is similar to the rate design standard proposed for electric utilities. Each standard is discussed separately.

The EISA 2007 Gas Energy Efficiency Standard

As with the EISA 2007 IRP Standard proposed for electric utilities, if adopted, the Gas Energy Efficiency Standard would require each jurisdictional utility to integrate energy efficiency resources into its resource planning process and adopt policies that would make cost-effective energy efficiency a priority resource. Kentucky's jurisdictional electric generating utilities are subject to 807 KAR 5:058, the IRP regulation, which requires the utilities to explain their consideration of demand-side management, conservation, and load management programs to the Commission. Unlike the electric utilities, Kentucky's jurisdictional gas utilities are not subject to the IRP requirement.

As noted earlier, Delta filed joint testimony on behalf of itself, Atmos and Columbia (collectively "Joint LDCs"). Duke Kentucky and LG&E also submitted testimony. In general, the jurisdictional gas utilities support the intent of the standard but do not recommend that the Commission adopt the standard.

Discussion

Joint LDCs

According to their testimony, the Joint LDCs have developed or are in the process of developing various DSM programs in accordance with KRS 278.285 which they believe integrate energy efficiency resources into their planning processes. To varying degrees, the DSM programs currently authorized or proposed for Delta and Atmos allow them to promote energy efficiency measures, which encourage customers to use less natural gas by purchasing more energy efficient appliances or by replacing their old, inefficient appliances with more energy efficient models. The programs also offer customers incentives to encourage energy efficiency practices. The Joint LDCs state that being allowed to recover the costs of the DSM programs, including incentives, promotional costs, administrative costs, and revenues lost as a result of customer efficiency and conservation, encourages them to participate in DSM programs. In addition, the Joint LDCs' currently authorized DSM programs allow them to retain a portion of the benefits accruing from these programs in order to provide the utilities with incentives for the successful management of energy efficiency DSM programs.[162]

With regard to the manner in which it treated energy efficiency as a priority resource, Atmos indicated that, if customers could conserve, it would need to acquire less gas to meet customers' needs, which would provide a savings to its customers. Atmos stated that it had not developed any goals for volume displacement due to conservation. However, it had estimated an annual volume savings of 24,000 Mcf in its

[162] Joint Direct Testimony of Delta, Atmos and Columbia at 1-2 (filed Dec. 12, 2008) ("Joint LDC Testimony").

pending DSM proposal which could result in a savings of about $120,000.[163] Atmos further stated that it was not aware of any additional incentives needed beyond those authorized by KRS 278.285. At the time of its response, Atmos had a DSM proposal pending before the Commission. Because the proposed program had not yet received Commission approval and because Atmos had not been able to implement and evaluate the proposed program, it was unable to suggest any further incentives.[164]

Columbia's position is that it encourages conservation as a means for customers to manage their winter heating bills and has provided limited residential weatherization assistance.[165]

Concerning how it treats energy efficiency as a priority resource, Delta referenced the alternate rate-setting procedures it has requested but which the Commission has not authorized. According to Delta, such proposals include an annual rate-adjustment mechanism similar to that in use in Alabama and an annual rate-review tariff similar to that in use in South Carolina, as well as Delta's own DSM tariff proposal.[166]

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[163] Atmos' Response to Staff's Data Request of March 16, 2009, Item 101 (filed Mar. 30, 2009).

[164] *Id.*, Item 100.

[165] Columbia's Response to Staff's Data Request of March 16, 2009, Item 104 (filed Mar. 30, 2009). Since filing this response, Columbia has implemented DSM programs and established a DSM collaborative in accordance with the terms of the settlement approved by the Commission in its 2009 rate case, Case No. 2009-00141.

[166] Delta's Response to Staff's Data Request of March 16, 2009, Item 101 (filed Mar. 30, 2009).

Delta also stated that it encourages its customers to conserve through DSM but that its current priority in this regard is to have available an annual rate-review mechanism that will allow it to further encourage customer conservation and efficiency. Since gas costs are a significant portion of the total rate, customers can benefit significantly from using less gas.[167]

Duke Kentucky

In its testimony, Duke Kentucky stated that it agrees with the EISA 2007 Energy Efficiency Standard applicable to natural gas utilities, but it does not believe that the standard needs to be formally adopted. Duke Kentucky believes that the existing DSM statute provides the Commission and utilities enough flexibility to encourage energy efficiency.[168] Duke Kentucky did not provide any testimony regarding the EISA 2007 Energy Efficiency Standard for natural gas companies.

Duke Kentucky stated that it does not conduct an IRP analysis for its gas operations, but it treats energy efficiency as a priority resource for residential customers by offering programs that enable customers to reduce their gas usage and better manage their utility bills. Duke Kentucky stated that natural gas energy efficiency does not function as a supply-side resource in the same fashion as energy efficiency does for a vertically integrated electric utility. This is due in part to the fact that a gas utility has minimal investment in capacity that can be avoided through the implementation of gas

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[167] *Id.*

[168] Stevie Testimony at 15.

energy efficiency programs.[169] Duke Kentucky provided a list of the gas energy efficiency programs it offered at the time of its response. These programs include: Gas Weatherization, Home Energy House Call and Online Home Energy Calculator. Duke Kentucky also responded that these programs would result in reductions in gas consumption.[170]

LG&E

In its testimony, LG&E stated that it believes this standard is unnecessary and need not be adopted by the Commission.[171] LG&E believes that the Commission already has the authority to approve energy efficiency programs under the DSM statute. LG&E stated that it already has DSM programs in place, such as energy efficiency audits and weatherization, which promote energy efficiency and integrate energy efficiency resources into the planning processes.[172]

In explaining how it treats gas energy efficiency as a priority resource, LG&E referenced its commitment to DSM and the DSM programs it had recently implemented

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[169] Duke Kentucky's Response to Staff's Data Request of March 16, 2009, Item 105 (filed Mar. 30, 2009).

[170] *Id.*, Item 106.

[171] Bellar Testimony at 11.

[172] *Id.*

following the Commission's approval of its expanded DSM programs in Case No. 2007-00319.[173] According to LG&E's estimate, these programs would result in savings of about 13,322 Mcf from 2008 through 2014.[174]

Sierra Club and Mr. Geoffrey Young

While the Sierra Club did not specifically address the EISA 2007 Gas Energy Efficiency Standard, its position is that the Commission should adopt all of the proposed EISA 2007 standards.

Although he provided no detailed discussion of the EISA 2007 Gas Energy Efficiency Standard, Mr. Young commented that he sees no valid reason not to adopt the standard.[175]

Commission Decision – EISA 2007 Gas Energy Efficiency Standard

All five of the major LDCs in Kentucky have approved DSM tariffs. At the time of the discovery in this case, Atmos, Delta, Duke Kentucky and LG&E were offering active DSM programs. Columbia was authorized to establish three programs as part of the settlement of its 2009 rate case and it agreed to establish a DSM Collaborative to develop additional programs.[176] Pursuant to the DSM statute, the tariffs of all five LDCs

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[173] Case No. 2007-00319, Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company Demand-Side Management for the Review, Modification, and Continuation Of Energy Efficiency Programs and DSM Cost Recovery Mechanisms (Ky. PSC Mar. 31, 2008).

[174] KU's and LG&E's Response to Staff's Data Request of March 16, 2009, Item 84 and Item 114 (filed Mar. 30, 2009).

[175] Young Comments at 10.

[176] Case No. 2009-00141, Application of Columbia Gas of Kentucky, Inc. for an Adjustment in Rates (Ky. PSC Oct. 26, 2009).

include provisions for recovery of DSM-related costs, recovery of lost revenues from DSM-related activities, and an incentive amount.

Besides the cost recovery and incentive components of the DSM statute cited above, the Commission believes that the finite nature of natural gas as a commodity should also act as an incentive for LDCs to promote energy efficiency. Natural gas is in demand not only as a residential heating and cooking source; it is also used in industrial applications and for electric generation. While the supply of gas is currently thought to be more plentiful than in times past, it is still a non-renewable resource. As Duke Kentucky points out, energy efficiency is not a supply-side resource for a natural gas utility;[177] however, the Commission believes that some reduction in the use of natural gas through energy conservation will ensure the availability of this relatively environmentally-friendly fuel farther into the future. Kentucky LDCs have long been sensitive to the need for conservation, with Western Kentucky Gas (the predecessor to Atmos) implementing a weatherization and customer education program as early as the 1980s, even to the point of advising customers to turn down their thermostats instead of opening the windows when their houses grew too warm.

Unlike the jurisdictional electric generating utilities, the Kentucky LDCs are not required to develop and submit integrated resource plans. As a result, they are not required to address DSM or energy efficiency in their planning processes in the same fashion as the electric utilities. Because the LDC earns no return on the cost of gas and the cost of gas accounts for roughly 70 percent of a customer's gas bill, the throughput

[177] Duke Kentucky's Response to Staff's Data Request of March 16, 2009, Item 105 (filed Mar. 30, 2009).

incentive should be less significant for LDCs than for electric utilities. However, the fact that the LDCs have experienced a reduction in sales volumes from conservation due to higher gas prices and more efficient appliances, among other things, seems to have offset factors that may formerly have acted to minimize the throughput incentive.

In addition, because of the nature of the infrastructure required to provide gas service, there is little opportunity to avoid capital costs through the implementation of energy efficiency. Furthermore, compared to the electric industry, gas usage has been declining in recent years due to better-insulated new construction, improved efficiency in new appliances, and general conservation in response to higher gas commodity costs experienced by customers.

As previously noted with regard to the adoption of other standards, the Commission has several options regarding the EISA 2007 Gas Energy Efficiency Standard. We may adopt the EISA 2007 Gas Energy Efficiency Standard, adopt a different gas energy efficiency standard, or not adopt any gas energy efficiency standard.

The Commission has determined that it will not require the jurisdictional gas utilities to adopt the EISA 2007 Gas Energy Efficiency Standard. Nonetheless, the Commission strongly encourages the LDCs to make greater efforts to consider and offer cost-effective energy efficiency programs. For all the reasons stated above, the Commission believes that not only the conservation of natural gas but conservation of energy in general is a worthwhile endeavor that should be encouraged. As such, the Commission will require the five major LDCs to develop policies and procedures that ensure that cost-effective energy efficiency is considered as a priority resource.

For information purposes, within 90 days of the date of this order, the pertinent policies and procedures should be submitted to the Commission. At each of the LDCs' rate cases subsequent to the date of this order, the subject LDC will be required to provide its most current energy efficiency policy and respond to appropriate interrogatories related to the policy.

The EISA 2007 Gas Rate Design Standard

As we stated in the discussion of the EISA 2007 Rate Design Standard that applies to electric utilities, many publications have stated the concern that standard ratemaking practices may not encourage utilities to adopt energy conservation measures. One such publication, the National Action Plan cited earlier in this Order, included specific recommendations to support a national commitment to energy efficiency by gas and electric utilities. Many of the concerns and issues discussed in the National Action Plan are reflected not only in the EISA 2007 Rate Design Standard for electric utilities but also in the EISA 2007 Gas Rate Design Standard and the four policy options to be considered.

While the first two policy options are clear and fairly straightforward, the third and fourth policy options are less clear. The first option, separating fixed cost revenue recovery from the volume of transportation or sales service, essentially addresses the removal of the throughput incentive, which may have some impact on a gas utility's ability to fully recover costs. The second option, providing incentives for successful management of energy programs, may offset the cost of energy efficiency programs. The third and fourth policy options for the EISA 2007 Gas Rate Design Standard are closely related. The third option, promoting the impact of energy efficiency as one of

the goals of rate design, would include the encouragement of energy efficiency among the goals utilities and regulators consider in the rate-setting process. The fourth policy option refers to the actual adoption of rate designs that encourage energy efficiency.

Discussion

Joint LDCs

The Joint LDCs' testimony states that their rates have been gradually moving toward decoupling revenues from volumes by increasing the revenues received from customer charges. In their most recent rate cases, the Joint LDCs received most or all of their revenue increases in the form of increased customer charges, moving rates further toward separating fixed-cost recovery from volumetric charges. According to the Joint LDCs, their base rates still contain per-unit volumetric rates as well as monthly customer charges. However, since gas commodity costs represent roughly three-fourths of a customer's bill and are solely volumetric charges, the Joint LDCs believe that their current rate designs help promote energy efficiency.[178]

The Joint LDCs, however, are interested in having a new ratemaking alternative and have pursued legislation that would allow for an annual review and possible adjustment of rates without the time and expense of a general rate case. They believe that a rate stabilization or annual rate review mechanism would keep rates current and would possibly adjust, consistent with the utility's last general rate case, for changes in investments and expenses. According to the Joint LDCs, such an approach would allow for the consideration of the impacts of conservation and energy efficiency to be

[178] Joint LDC Testimony at 2-3.

integrated in the utility's planning process, with rates being adjusted annually to reflect the impacts. As a result, the utility would keep its rates current at minimum expense and the customers would benefit from savings related to reduced usage.[179] Another alternative would be for further movement toward decoupling base rate revenues from sales and transportation volumes. This could be accomplished by allowing for the recovery of fixed costs entirely in the customer charge rather than in per-Mcf volumetric rates for delivery charges (i.e., the SFV rate design).[180]

It is the opinion of the Joint LDCs that the two alternatives discussed above, along with DSM programs, other existing rate initiatives and weather normalization, will allow and encourage LDCs to promote conservation and energy efficiency by their customers.[181]

Atmos

Atmos did not provide any testimony other than that of the Joint LDCs. However, it did provide responses to Staff data requests relating to gas rate design issues.

In its 2006 rate case, Atmos requested a $5.50 increase in the customer charge, representing a 73.3 percent increase from the $7.50 customer charge then in effect. The request also included a decrease in the volumetric rate from $1.19 per Mcf to $0.91

[179] *Id.* at 3-4.

[180] *Id.* at 4.

[181] *Id.*

per Mcf, a 23.5 percent decrease. Atmos was granted a $1.85 (to $9.35) increase in its customer charge. The volumetric rate remained $1.19 per Mcf.[182]

This does reflect the movement toward separating the recovery of fixed-costs from volumetric charges; however, according to Atmos, this rate design gives an implied incentive to promote greater gas consumption. Atmos, itself, notes that, as a result of its current rate design, its financial well-being is tied to the amount of gas sold. Customers, on the other hand, have the incentive to reduce consumption through various conservation measures since the cost of gas is such a large percentage of the customers' bills. Therefore, unless a new paradigm is found, there will remain some incentive to encourage consumption and not fully promote conservation. [183]

Atmos is also of the belief that rate stabilization or an annual rate review mechanism will promote energy efficiency because a utility and its customers' interests will be more closely aligned. The utility will be willing to promote conservation without being penalized because changes in consumption patterns can be more easily and inexpensively reflected in rates that are reviewed on an annual basis. Atmos identified decoupling as a discrete form of alternative ratemaking, addressing only the revenue side of ratemaking, while annual rate review is a more comprehensive review including revenue, plant investments, and costs.[184]

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[182] Atmos' Response to Staff's Data Request of March 16, 2009, Item 96(b) and (c) (filed Mar. 30, 2009).

[183] *Id.*, Item 96(e).

[184] *Id.*, Item 97(a).

According to Atmos, the Joint LDCs support some form of an annual rate review mechanism which achieves decoupling and updates rates for changes in costs.[185] Atmos also stated that the Joint LDCs believe that the DSM surcharge would benefit from a decoupling provision. It is their position that, by breaking the link between sales and margin, they would have an incentive to further promote conservation.[186]

Atmos prefers an annual rate review mechanism, but acknowledges that decoupling can provide benefits related to energy efficiency. Decoupling rates would be time-sensitive and additional rate cases would be needed to properly adjust rates for changes in a utility's revenue requirement.[187] Atmos cited a number of benefits from such a mechanism. For example, if an annual rate review mechanism had been in place for the past five calendar years, Atmos would have had a better opportunity to recover its revenue requirement because its rates would have been adjusted to do so. Another benefit would be that customers would have benefited from Atmos' focus shifting from marketing to conservation.[188]

Columbia

Columbia did not provide any testimony other than that of the Joint LDCs; however, it responded to Staff data requests regarding annual rate review mechanisms, decoupling and other rate design issues.

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[185] *Id.*, Item 98.

[186] *Id.*, Item 99.

[187] Atmos' Response to Staff's Data Request of April 13, 2009, Item 35 (filed Apr. 27, 2009).

[188] *Id.*, Item 36.

While it does not believe that rate stabilization or an annual rate review mechanism by itself would promote energy efficiency, Columbia believes that it is one way to better align the interests of the utility and the customer. Columbia stated that an annual rate review would allow the utility to adjust for lost revenues and not be negatively impacted by reduced consumption, thus removing the existing financial disincentive to pursue energy efficiency programs.[189]

The Joint LDCs consider an annual rate review mechanism to be one form of decoupling. However, Columbia does not believe that this is the only reasonable way to address decoupling.[190] One form of decoupling supported by the Joint LDCs is to provide for the recovery of fixed costs entirely in the monthly customer charge rather than in a per-unit rate or volumetric rate for delivery charges (the SFV rate design).[191] Columbia, itself, believes that separating fixed-cost recovery from the volume of sales is a move toward decoupling because it breaks the link between the recovery of a utility's fixed costs and its throughput. According to Columbia, the utility is not harmed by declining use, so there is no disincentive to promoting conservation.[192]

In its 2007 rate case, Columbia requested an increase in the customer charge of $5.80 (from $6.95 to $12.75), an 83.5 percent increase. Columbia was granted a $2.35 increase (from $6.95 to $9.30), a 33.8 percent increase. The increase in the customer

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[189] Columbia's Response to Staff's Data Request of March 16, 2009, Item 97(a) (filed Mar. 30, 2009).

[190] *Id.*, Item 98(a).

[191] *Id.*, Item 98.

[192] *Id.*, Item Staff 96(a).

charge indicated in the cost-of-service study was a $9.35 increase (from $6.95 to $16.30), a 234.5 percent increase. In the settlement, the parties recognized this conflict (between rate design and interest in energy efficiency) and placed the recovery of the allowed increase entirely in the fixed-charge component of Columbia's base rates. However, a part of Columbia's fixed costs are still dependent upon a variable rate for recovery.[193] A customer charge of $20.09 per month would be required to collect all fixed-delivery charges.

In summary, Columbia stated that it generally agrees with the LDCs' support for allowing annual reviews of financial results, with rate adjustments. According to Columbia, such a review or a decoupling approach to maintain a specific revenue amount, on an overall or per-customer basis, could be revenue-neutral and thus avoid the disincentive to the utility of implementing DSM plans and promoting conservation.[194]

Delta

As with Atmos and Columbia, Delta did not provide any testimony other than that of the Joint LDCs. In response to Staff data requests, Delta addressed issues relating to general rate design issues and decoupling more specifically.

In its last rate case prior to this proceeding,[195] Delta requested an increase in its customer charge from $9.80 to $19.74, representing an increase of $9.94, or 101

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[193] *Id.*, Item 96(a)-(e).

[194] Columbia's Response to Staff's Data Request of April 13, 2009, Item 35 (filed Apr. 27, 2009).

[195] Case No. 2007-00089, Application of Delta Natural Gas Company, Inc. for an Adjustment of Rates, (Ky. PSC Oct. 19, 2007).

percent. Pursuant to the settlement agreement in that case, Delta was granted an increase of $5.50, or 56 percent, from $9.80 to $15.30. Fully allocating the customer-related costs would require a residential monthly customer charge of $24.16. Adopting an SFV rate design and fully allocating both customer-related and demand-related non-gas fixed costs would have required a monthly customer charge of $38.94.[196] According to Delta, since not all fixed costs are recovered through Delta's monthly customer charge and a significant portion still is recovered in the volumetric charge, there are incentives for customers to save on their bills through conservation and efficiency efforts.[197]

Delta supports the adoption of a rate stabilization or annual rate review mechanism. Delta has stated that such a mechanism will allow it to adjust rates annually to reflect changes in consumption patterns, expenses and investments. In addition, its rates will be kept current, either by increasing or decreasing them, to reflect the changing costs of service. Delta believes that it will have an incentive to promote conservation and efficiency without being penalized, since changes in consumption by customers can be more easily and inexpensively reflected in rates as rates are kept current on an annual basis.[198]

Delta described decoupling as a method to separate revenue recovery from sales volumes, so that revenues are decoupled, or severed, from dependence on

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[196] Delta's Response to Staff's Data Request of March 16, 2009, Item 96(b)-(d) (filed Mar. 30, 2009).

[197] *Id.*, Item 96(e).

[198] *Id.*, Item Staff 97(a).

volumes. The movement to a higher monthly customer charge in Delta's 2007 rate case was a move toward further decoupling of revenues from volumes than existed before that case.[199] Delta believes that the adoption of an SFV rate design is the most straight-forward way to implement decoupling. However, Delta stated that decoupling addresses recovery of costs in the monthly customer charge revenues instead of volumetric revenues. The monthly customer charge would still need to be periodically adjusted to reflect increases or decreases in costs.[200]

Delta also responded that decoupling revenues from volumes helps the utility to recover the necessary revenues regardless of usage patterns. Collecting the required revenues in a monthly customer charge is a form of decoupling, which should be periodically reviewed and kept current. Delta believes that an annual review mechanism could help accomplish this objective at a lesser cost.[201] According to Delta, combining the annual rate review mechanism with decoupling would accomplish aligning LDC and customer interests and would keep rates current at a minimum of expense.[202]

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[199] *Id.*, Item Staff 96(a).

[200] *Id.*, Item 97(e).

[201] Delta's Response to Staff's Data Request of April 16, 2009, Item 35 (filed Apr. 28, 2009).

[202] *Id.*, Item 98.

Duke Kentucky

In its testimony, Duke Kentucky stated that it agrees with the EISA 2007 Gas Rate Design Standard but believes the Commission currently has adequate ratemaking authority and, therefore, formal adoption of the standard is not necessary.[203]

It is Duke Kentucky's position that utility rate design needs to be supported by competent studies and the decision as to which structure best suits the needs of the utility and its customers should be left to the expertise of the utility, with appropriate Commission oversight. Duke Kentucky cited the following rate design criteria that it believes need to be balanced when considering rate design: the need for effectiveness in producing the revenue requirement; stability and predictability for both the utility and consumers; discourage wasteful use of energy; reflect present and future social costs; fairness; avoidance of undue discrimination; simplicity; and the promotion of innovation.[204] Duke Kentucky believes that promoting energy efficiency should not supersede other interests. If the costs imposed by a particular customer class support a particular rate design that lends itself to promoting energy efficiency, then those alternatives could be explored.[205] In short, Duke Kentucky believes that utilities should not be forced to implement rate designs that are not supported by appropriate cost-of-service studies.[206]

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[203] Bailey Testimony at 8.

[204] Bailey Testimony at 8-9.

[205] *Id.* at 11.

[206] *Id.*

Duke Kentucky also testified that, if natural gas rates are to be designed to encourage energy efficiency investment, natural gas utilities need an appropriate incentive to counteract the revenue erosion and cost-recovery issues associated with declining sales.[207] In response to Staff data requests, Duke Kentucky stated that the successful management of energy efficiency programs should be rewarded by allowing the utility to retain a portion of the benefits of the programs.[208]

Duke Kentucky also responded that it does not currently receive any benefit for the implementation of natural gas energy efficiency programs. While it believes the DSM statute provides the Commission with authority to provide such incentives, it believes Commission clarification of this would be useful. Finally, Duke Kentucky stated that an incentive structure similar to that proposed in its electric Save-A-Watt initiative[209] should provide a reasonable incentive for implementation of natural gas energy efficiency programs.[210]

In terms of its current rate design, Duke Kentucky stated that the amount of conservation is dependent upon the change in natural gas price since most of the rate is for the cost of natural gas. Therefore, Duke Kentucky is sending customers a price

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[207] *Id.* at 9.

[208] Duke Kentucky Response to Staff's Data Request of March 16, 2009, Item 108(a) (filed Mar. 30, 2009).

[209] As stated in an earlier section of this report, Duke Kentucky's Save-A-Watt proposal was withdrawn during the pendency of this Administrative case.

[210] Duke Kentucky Response to Staff's Data Request of March 16, 2009, Item 111 (filed Mar. 30, 2009).

signal that encourages conservation, primarily based on the cost of gas.[211] Duke Kentucky stated that its gas rates reflect the cost to serve the customers within its various classes and reasonably encourage conservation even though each design is volumetric in nature.[212]

Duke Kentucky testified that it is generally supportive of rate decoupling for natural gas utilities. According to Duke Kentucky, declining throughput creates a dilemma for utilities between advocating for further conservation measures and attaining an adequate return by selling more gas. A decoupling mechanism would sever the relationship between throughput and cost recovery and would allow a utility to recover the appropriate level of costs from its customers by breaking the link between customer usage and cost recovery.[213]

At the time of its testimony, Duke Kentucky explained that its parent, Duke Energy Ohio, Inc., recently implemented an SFV form of decoupling. According to Duke Kentucky, the Ohio SFV rate design does not allow for the recovery of all fixed costs in a fixed fee. It does, however, place a great portion of the utility's fixed costs in the fixed customer charge portion of the customer's bill. In Ohio, the larger customer charge provides greater revenue predictability for the utility, mitigates the erosion of recovery of fixed costs due to energy efficiency, and will likely extend the time between rate cases.[214]

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[211] *Id.*, Item 107.

[212] Bailey Testimony at 16.

[213] *Id.* at 9-10.

[214] *Id.* at 10.

While Duke Kentucky generally supports decoupling, it has not identified a specific model which it supports;[215] and it does not believe that specific methods of decoupling or rate design should be mandated.[216]

LG&E

LG&E does not believe that it is necessary for the Commission to adopt the EISA 2007 Gas Rate Design Standard. According to LG&E, the DSM statute provides for the recovery of DSM program costs, including incentives, promotional and administrative costs, and lost revenues resulting from customer efficiency and conservation.[217] LG&E also testified that the Commission has the ability to encourage energy efficiency investment under its general ratemaking authority.[218]

According to LG&E, the EISA 2007 Gas Rate Design Standard is more rigid than the Commission's current ability to encourage energy efficiency investments though ratemaking. LG&E believes that the Commission now has the ability to allow an infinite number of rate design alternatives and that adopting the standard would only serve to limit this flexibility.[219]

In response to Staff data requests, LG&E stated that its current rate design, including its DSM programs, promotes energy efficiency. LG&E explained that it

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[215] Duke Kentucky Response to Staff's Data Request of March 16, 2009, Item 109 (filed Mar. 30, 2009).

[216] Bailey Testimony at 16.

[217] Bellar Testimony at 11.

[218] *Id.* at 12.

[219] *Id.*

continues to use cost-based ratemaking approaches that have increased customer charges over time to reflect related customer costs, leaving the remaining costs to be recovered through volume-based distribution charges such that customers continue to have incentives to use natural gas more efficiently. LG&E cited several of its gas service rates that included provisions to promote energy efficiency.[220]

With regard to decoupling, LG&E cited its 2008 rate case in which it supported a move toward decoupling revenues from volumes by increasing the revenues received from the monthly customer charge. According to LG&E, this would separate fixed-cost recovery from the volume of transportation or sales service provided to the customer and would encourage the customer to be more efficient.[221]

In response to Staff data requests, LG&E stated that it was continuing to evaluate decoupling options and did not support a specific form of decoupling. LG&E does see the separation of a gas utility's fixed cost recovery from volumetric sales as a move toward decoupling.[222]

As stated in response to similar Staff data requests regarding the electric EISA 2007 Rate Design Standard, LG&E stated that, by allowing for the recovery of lost revenues and financial incentives, the current DSM statute provides for a form of decoupling that it supports. LG&E further stated that, under the financial incentive

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[220] KU's and LG&E's Response to Staff's Data Request of March 16, 2009, Item 116 (filed Mar. 30, 2009).

[221] Bellar Testimony at 11.

[222] KU's and LG&E's Response to Staff's Data Request of March 16, 2009, Item 117(b) and (c) (filed Mar. 30, 2009).

provision, it believes the Commission has considerable latitude to approve innovative proposals from utilities which might include additional decoupling-like alternatives.[223]

LG&E does not believe that the DSM statute needs to be supplemented by a decoupling provision; however, it does believe that legislation explicitly granting the Commission decoupling authority could add clarity to that authority and ensure its integrity.[224]

Sierra Club and Mr. Geoffrey Young

Although the Sierra Club did not specifically address the EISA 2007 Gas Rate Design Standard, its position is that the Commission should adopt all of the proposed EISA 2007 standards.

In his comments, Mr. Young did not specifically discuss the details of the individual standards for gas utilities. However, he did state that he saw no reason not to adopt the EISA 2007 Gas Rate Design Standard.[225]

Commission Decision – EISA 2007 Gas Rate Design Standard

As stated earlier, the EISA 2007 Gas Rate Design Standard requires the consideration of several policy options which are similar in nature to those set forth for the EISA 2007 Rate Design Standard proposed for electric utilities. As with the electric standard, those policy options can be distilled into issues relating to the removal of the throughput incentive and consideration of decoupling.

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[223] KU's and LG&E's Response to Staff's Data Request of March 16, 2009, Item 118 (filed Mar. 30, 2009).

[224] *Id.*

[225] Young Comments at 10.

The LDCs, which include two combination gas and electric utilities, Duke Kentucky and LG&E, have indicated their support for the intent of the EISA 2007 Gas Rate Design Standard but see no need to adopt the standard. Generally, it is their belief that the Commission's current ratemaking authority combined with that granted the Commission in the DSM statute provides the Commission with sufficient authority to meet the intent of the EISA 2007 Gas Rate Design Standard.

Since the filing of testimony and responses by the LDCs in this case, all five LDCs have been granted increases in their customer charges in a partial movement to their proposed cost-based rates. In their testimony, all five of the major LDCs have promoted the impact of adopting energy efficiency as the primary goal of a move toward cost-based rate design, with an emphasis on separating recovery of fixed costs from sales volumes through an SFV rate or similar proposals. It has also been the testimony of the LDCs that, while greater recovery of fixed costs through the customer charges will remove their disincentive to promote energy efficiency, customers will still be encouraged to use natural gas more efficiently by the relatively high gas cost component in volumetric rates.

In Case No. 2009-00354,[226] Atmos proposed an increase in its residential customer charge from $9.35 to $13.50 per month along with a slight increase to the volumetric rate. The settlement filed by the parties included a residential customer charge of $12.50, with a higher residential volumetric rate than had been proposed.

[226] Case No. 2009-00354, Application of Atmos Energy Corporation for an Adjustment of Rates (Ky. PSC May 28, 2010).

The Commission accepted the settlement, thus authorizing the increase in the customer charge from $9.35 to $12.50.

In Case No. 2009-00141,[227] Columbia proposed an increase from its $9.30 residential customer charge to a $17.92 customer charge in year one and a fully allocated $26.53 customer charge in year two. In its final Order, the Commission approved a settlement reached by all the parties. The settlement provided for the entire amount of the increase to be allocated to customer charges, with Columbia's residential customer charge increasing from $9.30 to $12.35. No increase was allocated to volumetric rates except for the two wholesale customers in the Intra-state Utility Service class.

Delta's rate case application, filed April 23, 2010 in Case No. 2010-00116,[228] proposed an increase from its current residential customer charge of $15.50 to a customer charge of $24.20, with a slight increase proposed to the volumetric rate. The Commission authorized Delta to increase its customer charge to $20.70. In addition, Delta stated that, while it was not proposing a rate stabilization mechanism in that proceeding, it firmly believes that such a mechanism would be in the customers' best interest and plans to consider filing such a mechanism in the future when appropriate.

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[227] Case No. 2009-00141, Application of Columbia Gas of Kentucky, Inc. for an Adjustment in Rates (Ky. PSC Oct. 26, 2009).

[228] 2010-00116, Application of Delta Natural Gas Company, Inc. for an Adjustment of Rates (Ky. PSC Nov. 29, 2010).

In Case No. 2009-00202,[229] Duke Kentucky proposed an increase from its $12.00 residential customer charge to a $30 residential customer charge, based on a "Modified SFV" rate design. The proposed $30 charge was calculated to recover all customer-related costs plus some of the fixed costs necessary to serve residential customers. Duke Kentucky proposed a decrease in its residential volumetric charge. The settlement reached by the parties and approved by the Commission produced a residential customer charge of $16, with some of the overall increase allocated to the volumetric charge.

In Case No. 2009-00549,[230] LG&E proposed an increase in its residential customer charge from $9.50 to $26.53. The customer charge proposed by LG&E was a fully allocated SFV customer charge containing all costs except the gas commodity cost. LG&E and the intervenors, with the exception of the AG, reached and filed a settlement that would authorize LG&E to raise its customer charge to $12.50. In its testimony, the AG proposed no change to the existing customer charge. After an evidentiary hearing, the Commission accepted the settlement as being reasonable.

As a result of their proposals in recent rate cases, the major LDCs in Kentucky have been granted increases in their residential customer charges and thus have made some progress in separating fixed-cost revenue recovery from the volume of transportation or sales service in the last three years.

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[229] 2009-00202, Application of Duke Energy of Kentucky, Inc. for an Adjustment of Rates (Ky. PSC Dec. 29, 2009).

[230] 2009-00549, Application of Louisville Gas and Electric Company for an Adjustment of Electric and Gas Base Rates (Ky. PSC Oct. 21, 2010).

The following chart compares the residential customer charge in effect for each LDC four years ago with the residential customer charge currently in effect.

LDC	April 2007 Customer Charge	March 2011 Customer Charge
Atmos	$7.50	$12.50
Columbia	$6.95	$12.35
Delta	$10.00	$20.70
Duke Kentucky	$12.00	$16.00
LG&E	$8.50	$12.50

Given its consideration of the principle of gradualism, it is unlikely that the Commission would have authorized rates that were fully cost-based at the time of its decisions in the cases cited above. However, in four of the five cases, the limitations on the customer charge were, to some extent, self-imposed by the LDCs as a result of conditions included in settlement agreements. It is not the intent of the Commission to discourage settlements and the Commission recognizes that many factors impact provisions set forth in settlements. However, the Commission wants to point out, that though the LDCs may not be moving as quickly as they desire to a full cost-of-service based customer charge, this should not be a reason to not fully embrace energy efficiency.

All the LDCs support some sort of rate stabilization or annual rate review mechanism. They argue that decoupling only addresses the revenue side of

ratemaking and that an annual review would allow the LDCs to promote conservation and efficiency without being penalized by changes in consumption.

As with the adoption of other EISA 2007 standards, the Commission may choose to adopt the EISA 2007 Gas Rate Design Standard, adopt a different standard, or not adopt any gas rate design standard.

The Commission has determined that it will not require the jurisdictional gas utilities to adopt the EISA 2007 Gas Rate Design Standard or any gas rate design standard. To the extent that the EISA 2007 Gas Rate Design Standard requires that the rates charged by a natural gas utility shall align utility incentives with the delivery of cost-effective energy efficiency, the Commission believes that this is provided through the DSM statute, KRS 278.285, and the continued movement toward a cost-of-service based rate design. The Commission believes the movement toward fully cost-based rates will reduce the disincentive of the LDCs to encourage energy efficiency but it does not support an SFV rate design at this time. We believe that, if all fixed costs were placed in the customer charge under an SFV rate design, conservation would be dependent solely on the price of natural gas, as Duke Kentucky suggests. There is also the possibility that increasingly higher gas customer charges could cause fuel-switching among customers from gas to electric in order to avoid the gas customer charge. The Commission also believes that it is necessary to balance the need to provide incentives to encourage the LDCs to promote energy efficiency with the need to encourage customers to conserve through rate structures and to avoid inefficient fuel switching.

In addition, the testimony in this proceeding has not convinced the Commission that implementing a full decoupling mechanism is appropriate at this time. As we

pointed out in the discussion regarding the EISA 2007 Rate Design Standard for electric utilities, the DSM statute provides a form of decoupling already available to the LDCs. We believe that the DSM statute, combined with greater movement toward cost-based rates, should provide a reasonable balance between providing incentives to the LDCs to promote energy efficiency and encouraging customers to conserve.

With regard to rate stabilization or an annual rate review, the Commission believes that such a mechanism may prompt the LDCs to make a stronger effort to promote energy efficiency; however, we believe that such mechanisms may do little more than provide guaranteed earnings without requiring the utility to more effectively manage its expenses.

The Commission agrees with the LDCs' position that it already has the authority to provide incentives for the successful management of energy efficiency programs through KRS 278.285, which specifically allows utilities to retain a portion of cost-reducing benefits accruing from the programs, and through its general ratemaking authority. As mentioned in the discussion of the EISA 2007 Gas Energy Efficiency Standard, all five LDCs have DSM or energy efficiency tariffs that include provisions for recovery of DSM-related costs, recovery of lost revenues from DSM-related activities, and an incentive amount.

The Commission also notes that the testimony provided in all five of the major LDCs' most recent rate cases promoted the impact of adoption of energy efficiency as the primary goal of a move toward cost-based rate design, with an emphasis on separating fixed-cost revenue from sales volumes through SFV rates or similar proposals. It has also been the testimony of the LDCs that, while greater recovery of

fixed costs through customer charges will remove their disincentive to promote energy efficiency, customers will still be encouraged to use natural gas more efficiently by the relatively high gas cost component in volumetric rates.

While we will not require the adoption of a gas rate design standard, as we have consistently stated in previous sections of this Order and in other Orders, we strongly support DSM, conservation and energy efficiency. The Commission, therefore, will continue to encourage the LDCs to make greater efforts to consider and offer cost-effective energy efficiency programs.

Consideration of Smart Grid Investments ("EISA 2007 Smart Grid Investment Standard")

Section 1307 of EISA 2007 amends PURPA by including a new Smart Grid Investments standard for electric utilities. The standard is as follows:

> Each State shall consider requiring that, prior to undertaking investments in nonadvanced grid technologies, an electric utility of the State demonstrate to the State that the electric utility considered an investment in a qualified Smart Grid system based on appropriate factors, including:
>
> - total costs;
> - cost-effectiveness;
> - improved reliability;
> - security;
> - system performance; and
> - societal benefit.

The EISA 2007 Smart Grid Investment Standard also requires each state to consider rate recovery of Smart Grid capital expenditures, operating expenses, and other costs related to the deployment of smart grid technology, including a reasonable return on the capital expenditures. As part of the rate recovery consideration, each

state is to also consider recovery of the remaining book-value of obsolete equipment associated with smart grid deployment.

Although the term "Smart Grid" is not defined in the statute, the EISA Standards Manual states that Smart Grid "refers to a system that incorporates a range of technological options that provides certain enumerated functions or values."[231] The manual then cites the ten items listed in Section 1301 of EISA 2007 that characterize a Smart Grid. These items are:

1. Increased use of digital information and controls technology to improve reliability, security, and efficiency of the electric grid.

2. Dynamic optimization of grid operations and resources, with full cyber-security.

3. Deployment and integration of distributed resources and generation, including renewable resources.

4. Development and incorporation of demand response, demand-side resources, and energy-efficiency resources.

5. Deployment of "smart" technologies (real-time, automated, interactive technologies that optimize the physical operation of appliances and consumer devices) for metering, communications concerning grid operations and status, and distribution automation.

6. Integration of "smart" appliances and consumer devices.

7. Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, and thermal-storage air conditioning.

8. Provision to consumers of timely information and control options.

9. Development of standards for communication and interoperability of appliances and equipment connected to the electric grid, including the infrastructure serving the grid.

[231] EISA Standards Manual at 62.

10. Identification and lowering of unreasonable or unnecessary barriers to adoption of Smart Grid technologies, practices, and services.

In its testimony, Duke Kentucky provided the following definition of Smart Grid investment that seems to summarize the ten EISA 2007 characteristics in a different fashion. That definition is:

> Smart Grid is the industry term for new technology, systems and processes that transform gas and electric distribution systems into an integrated, digital network – much like a computer network – to produce operating efficiencies, enhanced customer and utility information and communications, innovative services, and improved reliability among other benefits. One fundamental component of the Smart Grid projects is Advanced Metering Infrastructure ("AMI"). AMI is a metering and communication system that records customer usage data over frequent intervals, and transmits the data over an advanced communication network to a centralized data management system. Smart Grid projects use the communication network to carry data from AMI and other intelligent devices on the distribution grid, creating a networked system and utilizing the AMI to its greatest extent.[232]

Regardless of the definition, the basic components of a Smart Grid include smart appliances, AMI, transmission and distribution automation equipment, and digital communications technology.[233] Perhaps one of the most basic components of a Smart Grid system is smart meters that allow for two-way communication between the utility and the customer.[234]

On the customer side, smart meters provide information regarding energy usage and energy price signals that allow for dynamic pricing such as time-of-use pricing,

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[232] Testimony of Todd W. Arnold at 3 (filed Mar. 9, 2009) ("Arnold Testimony").

[233] EISA Standards Manual at 63.

[234] *Id.*

critical-peak pricing, and real-time pricing.[235] On the utility side, smart meters allow for automated meter reading ("AMR"), remote disconnect and reconnect, and provide information regarding customer load as well as outage and service restoration information.

Discussion

As with the standards previously addressed, the electric utilities support the intent of the EISA 2007 Smart Grid Investment Standard. The electric utilities are split on their recommendation of the adoption of the EISA 2007 Smart Grid Investment Standard. Big Rivers, its member-cooperatives, Duke Kentucky, KU and LG&E do not recommend adoption of the EISA 2007 Smart Grid Investment Standard. Kentucky Power supports adoption of the standard, and EKPC and its member-cooperatives recommend that the Commission establish a collaborative process to consider Smart Grid issues.

Big Rivers and its Member-Cooperatives

As previously stated, Big Rivers and its member-cooperatives do not recommend that the Commission adopt the EISA 2007 Smart Grid Investment Standard. They believe that the existing CPCN and rate case processes ensure that utilities make prudent decisions in system planning which would include consideration of smart grid technologies.[236]

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[235] *Id.* at 63-64.

[236] Big Rivers Joint Testimony at 15.

In their testimony, Big Rivers and its member-cooperatives state that the definition of smart grid is nebulous and is not defined in EISA 2007. In their opinion, a smart grid does include such components as AMI, transmission and distribution automation equipment, and digital communication technology;[237] items which the Commission identified as components earlier in this section of this Order.

Big Rivers and its member-cooperatives state that they consider Smart Grid technology in the planning of their transmission and distribution systems.[238] Kenergy, for example, was midway through a pilot program of an AMI system at the time testimony was filed. The pilot involves the expanded use of metering data and technology to maximize Kenergy's efficiencies throughout the organization and verifying the success of the technology's use in Kenergy's applications. Preliminary results of the pilot have led to further investigation into ways to leverage the data from system planning, reliability studies, and reporting and measurement of the effects of major appliance control.[239]

In addition, Big Rivers and its member-cooperatives state that it has been their practice to use equipment that should function well in a smart grid arrangement when economically feasible.[240]

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[237] *Id.* at 14.

[238] *Id.*

[239] *Id.* at 15.

[240] *Id.*

Duke Kentucky

Duke Kentucky also supports the EISA 2007 standards related to Smart Grid, but does not believe the standards need to be formally adopted by the Commission.[241]

Duke Energy has introduced components of a smart grid system in Ohio, North Carolina and South Carolina, and completed the majority of initial deployment of AMI in Kentucky in 2008.[242] Duke Kentucky stated that its AMI initiative is providing benefits to its customers through the capability to confirm power restoration events; improved reliability; and the ability to support security best practices including firewalls, intrusion detection, isolated network segments and user access controls. According to Duke Kentucky, its AMI also supports interval data collection from electric meters and daily data collection from gas meters.[243]

Duke Kentucky believes the Commission has authority to consider residential Smart Grid deployment as an element of DSM plans submitted pursuant to KRS 278.285. According to Duke Kentucky, that statute gives the Commission authority to review utility-sponsored demand-side management and energy conservation plans and approve such plans for recovery via a discrete rider adjustment.[244] However, in

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[241] Arnold Testimony at 4.

[242] *Id.* at 8.

[243] *Id.* at 18-19.

[244] *Id.* at 17-18.

response to a data request, Duke Kentucky stated its belief that the statute limits the recovery via a discrete rider charge to residential customers only.[245]

EKPC and its Member-Cooperatives

It is the position of EKPC and its member-cooperatives that the Commission should not adopt the EISA 2007 Smart Grid Investment Standard as proposed. As an alternative, they recommend the Commission consider establishing a collaborative process with the utilities and other stakeholders to monitor Smart Grid developments, to identify promising new technologies and concepts, and to potentially engage in pilot programs on a voluntary basis that appear to offer net benefits.[246]

EKPC and its member-cooperatives believe that Smart Grid technologies may potentially offer substantial benefits in the form of lower electric bills and improved reliability for retail customers.[247]

According to EKPC and its member-cooperatives, there are several reasons for the Commission to use the collaborative alternative they propose. First, according to EKPC and its member-cooperatives, Smart Grid technologies and information systems consist of five major categories including Sensing and Measuring, Advanced Control Methods, and Improved Interfaces and Decision Support. They believe that Smart Grid technologies are complementary to, rather than a substitute for, conventional power

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[245] Duke Kentucky's Response to Staff's Data Request of March 16, 2009, Item 37 (filed Mar. 31, 2009).

[246] Testimony of Robert J. Camfield at 4 (filed Jan. 12, 2009) ("Camfield Testimony").

[247] *Id.* at 4-6.

system equipment and facilities. Since conventional power system equipment and facilities will likely remain the central expenditure of power delivery, EKPC and its member-cooperatives do not believe that a formal regulatory review involving technology selection is necessarily applicable.[248]

Second, EKPC and its member-cooperatives believe that it is unlikely that many opportunities exist where Smart Grid technologies could substitute for the deployment of a major conventional generating technology.[249] Third, EKPC and its member-cooperatives believe that the Commission's current policy of monitoring industry developments is satisfactory. They believe that, at some point, Smart Grid technologies may offer substantial benefits in the form of lower electric bills and improved reliability for retail customers and that EKPC and its member-cooperatives will incorporate such technologies as appropriate.[250]

Fourth, Smart Grid technologies geared to reliability and real-time operations will increasingly need to operate among several electric utility service providers to realize effectiveness. EKPC and its member-cooperatives believe that this interoperability will involve the various organizations that comprise the Energy Reliability Organization. Thus, the smart grid will be regional in nature and the net benefits to local smart grid investments will likely be manifested outside the host utilities' territory.[251]

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[248] *Id.* at 4.

[249] *Id.* at 4-5.

[250] *Id.* at 5.

[251] *Id.*

Fifth, EKPC and its member-cooperatives believe that the burden (i.e., cost) of demonstrating that occasional small-scale investments in Smart Grid technologies and concepts of one type or another provide net benefits in a formal process before the Commission is substantial.[252]

Sixth, high resource costs, substantial siting limitations, and an increasingly larger array of substitute possibilities available to consumers present utilities with strong incentives to minimize total costs. Due to the incentives that are inherently present within today's energy markets with rising costs and an increasing range of potential substitutes, the Commission can be assured that Smart Grid technologies which provide positive net benefits will be adopted by service providers where appropriate.[253]

Kentucky Power

Unlike the other electric utilities, Kentucky Power supports the adoption of the EISA 2007 Smart Grid Investment Standard.[254]

Kentucky Power, as an operating unit of American Electric Power Company, Inc. ("AEP"), has participated in the development of AEP's Smart Grid initiative. Known as gridSMART, the initiative began in 2007. It includes AMI, distribution grid management, and home area networks ("HAN"), along with the information technology systems that support and integrate each component.[255] According to Kentucky Power's

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[252] *Id.* at 6.

[253] *Id.* at 4-6.

[254] Wagner Testimony at 3.

[255] *Id.* at 23.

testimony, there has only been a limited deployment in Kentucky in the pilot phase.[256] Kentucky Power converted all residential meters to AMR technology in 2006 and it is not currently proposing to convert to AMI technology until 2012 or later.[257] Kentucky Power stated that it currently believes the more prudent course is to implement HAN technologies in conjunction with its AMI roll-out. Kentucky Power is investigating in-home display technologies that work with the current AMR system and provide customers information about their electrical usage.[258]

Kentucky Power has undertaken distribution automation projects demonstrating AEP's Distribution Grid Management concepts in the Cannonsburg, Buckhorn and Inez areas. Kentucky Power is also planning for the implementation of a supervisory control and data acquisition system ("SCADA") at all of its substations and is planning to automate portions of its distribution grid.[259]

Kentucky Power believes that the large investments required for ratepayers to reap the benefits of a Smart Grid system will not be made unless utilities are assured of their ability to earn a return on and to recover their investments, including any remaining investment in facilities rendered obsolete as a result of the company's Smart Grid investments. Kentucky Power supports the adoption of the standard by the Commission. It also supports the Commission's explicit recognition of the need to foster

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[256] *Id.* at 28.

[257] *Id.* at 29.

[258] *Id.*

[259] *Id.* at 28-30.

Smart Grid investments through the adoption of the first part of the federal Smart Grid standards.[260] The economic life of many Smart Grid investments will be much shorter than the equipment it is replacing or supplementing, which will mean higher depreciation rates. With respect to each Smart Grid investment, Kentucky Power believes the utility should be permitted to recover its costs, including operating costs and return on and of capital investments, net of benefits.[261]

Kentucky Power suggests that it would be appropriate for the Commission to generally recognize customer and societal benefits that are produced through the deployment and implementation of Smart Grid investments, without the need for each electric utility to demonstrate the existence or quantification of such benefits and without requiring the precise quantification of such benefits. Kentucky Power believes that, when electric utilities deploy and implement Smart Grid technology, it is appropriate to allow recovery of prudently-incurred costs that are not otherwise offset by operational cost savings. Kentucky Power also suggests that timely cost recovery is critical to enable utilities to deploy and implement Smart Grid technology.[262]

To the extent the EISA 2007 Smart Grid Investment Standard and the associated Smart Grid investments seek to modify or influence consumption patterns, Kentucky Power believes the associated costs of these Smart Grid programs would flow through the DSM surcharge. To the extent any costs associated with Smart Grid investment are

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[260] *Id.* at 33.

[261] *Id.*

[262] Kentucky Power's Response to Staff's Data Request of March 16, 2009, Item 82 (filed Mar. 31, 2009).

not designed to modify or influence customers' consumption patterns, those costs would follow the normal course of business and be recovered through Kentucky Power's base rate cases.[263]

KU and LG&E

KU and LG&E agree with the EISA 2007 Smart Grid Investment Standard in concept but believe that the standard is unnecessary, premature, and should not be adopted.[264]

With regard to a definition of Smart Grid, KU and LG&E stated that the industry has yet to reach a consensus on a common definition or description of a "Smart Grid." KU and LG&E believe that, by choosing one definition now, the Commission could effectively limit the scope and consideration of future Smart Grid technologies and investment in the Commonwealth of Kentucky.[265] KU and LG&E also cited the efforts of the National Institute of Standards and Technology, which has primary responsibility for coordinating the development of a framework that includes protocols and model standards for information management in order to achieve interoperability of Smart Grid devices and systems. They believe that, without the consensus standards recommended by this group, it is unlikely that the various Smart Grid devices and systems deployed throughout North America will interoperate.[266]

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[263] Kentucky Power's Response to Staff's Data Request of Apr. 13, 2009, Item 32 (filed Apr. 27, 2009).

[264] Bellar Testimony at 9.

[265] *Id.* at 8.

[266] *Id.* at 8-9.

KU and LG&E are testing some Smart Grid technology. They have launched a Responsive Pricing and Smart Metering Pilot Program ("Pilot") consisting of 100 customers for rate RS and 50 customers eligible for rate GS in a given year. The rate structure of the program utilizes time-of-use pricing ("TOU"), real-time pricing, and critical-peak pricing components. Customers in the Pilot receive smart thermostats, energy use display devices and water heater/pool pump controllers to automate energy use based on the price of electricity.[267]

The Pilot is aimed at evaluating the impact of various drivers on electric consumption and consumer behavior. These drivers include pricing (via time-of-use rates with critical-peak pricing component), automation (via smart thermostats), and information (via in-home energy usage displays).

KU and LG&E consider Smart Grid strategies as long-range investments that will fundamentally change the utility industry. Therefore, they believe the value proposition and long-range financial implications to their customers are of paramount concern consistent with their prudency obligations under the current regulatory framework. They note that short-term "stimulus funding" opportunities, for example, would not alter the long-term investment strategy. However, the time frame identified for stimulus funding to assist in recovering the nation's sagging economy may not be sufficient.[268]

Both KU and LG&E made a strategic decision to adopt a Smart Metering Platform by switching from electromechanical meters to solid state meters. These Smart

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[267] *Id.*

[268] KU's and LG&E's Response to Staff's Data Request of March 16, 2009, Item 120 (filed Mar. 30, 2009).

Meters will allow both utilities the ability to establish various energy rate offerings, such as TOU rates.

Both utilities are offering their large industrial and commercial customers the opportunity to participate in a three-year Real-Time Pricing program. Customers' energy pricing is based upon an hourly rate structure where hourly rates are provided to customers on the prior day. This advanced notice is provided to allow customers time to adjust their energy consumption.[269]

KU and LG&E are currently evaluating options for Smart Grid deployment. The plan will include infrastructure and technology that is scalable and provides "plug-in" capability with foreseeable applications (such as robust HAN and distribution-automation) that enable the enhancement of demand response and energy efficiency. At the meter, this means accommodating TOU rates as well as a wide range of communication protocols for demand-response and energy-management devices. From the meter to the utility offices, the focus is upon data security/integrity and scalability of bandwidth to accommodate increasing volumes of data, particularly from the use of distribution monitoring and automation.[270]

Sierra Club and Mr. Geoffrey Young

The Sierra Club believes that the EISA 2007 Smart Grid Investment Standard should be adopted statewide. It believes that Kentucky will benefit from consideration of cost-effective Smart Grid technologies. The Sierra Club cited quotes from Duke

[269] KU's and LG&E's Response to Staff's Data Request of April 13, 2009, Item 33 (filed Apr. 27, 2009).

[270] *Id.*, Item 41.

Energy's CEO, Jim Rogers, as support for its belief, noting that since he "is a very prominent spokesperson for the electric utility industry, this visionary view is significant and should be noted in our state."[271]

Mr. Young believes that the EISA 2007 Smart Grid Investment Standard should be adopted statewide because it would prevent utilities from ignoring or improperly discounting the potential benefits of cost-effective Smart Grid technologies.[272] Otherwise, Mr. Young's comments mirror those of the Sierra Club.

Commission Decision – EISA 2007 Smart Grid Investment Standard

Neither PURPA nor EISA 2007 defines Smart Grid; however, several of the electric utilities either attempted to provide a definition or to identify the characteristics of a Smart Grid system. These attempts to define Smart Grid, although similar in nature, are different, as are each utility's implementation plans. The testimony and responses to Staff data requests reflect the extent to which the electric utilities have implemented some aspects of Smart Grid technology and infrastructure. Most electric utilities, but not all, have installed a SCADA system. Most electric utilities, but not all, have an AMR program, and some have progressed to AMI technology. In addition, most but not all electric utilities discussed additional Smart Grid efforts they were considering in one form or another. It appears that, even if the Commission does not require adoption of this EISA 2007 Smart Grid Investment Standard, the electric utilities will likely continue to install cost-effective Smart Grid technology and infrastructure.

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[271] Sierra Club Comments at 5.

[272] Young Comments at 10-11.

At an informal conference on October 21, 2009, the Commission indicated its interest in fostering investment in Smart Grid and smart meter technology and infrastructure by initiating discussion with the parties in this administrative case regarding their willingness to participate in a collaborative effort to work toward deployment of Smart Meter technology and TOU rates. The parties agreed to discuss the issues collaboratively and requested that Staff provide guidance regarding the issues that should be addressed.

The Staff's guidance document was issued on February 19, 2010. In its cover letter, Staff stated that implementation of broader Smart Grid technology that provides for greater automation of the distribution and transmission of electricity are also goals which the parties should try to achieve.[273] The joint response of the utilities of record ("Joint Parties") to the Staff's guidance document was filed on April 29, 2010 with a plan on how to address the issues set forth in the Staff guidance document. The report of the Joint Parties titled "Consideration of the New Federal Standards of the Energy Independence and Security Act" was filed on March 25, 2011.

As previously noted with regard to the adoption of other standards, EISA 2007 provides the Commission with several options regarding the EISA 2007 Smart Grid Investment Standard. We may adopt the EISA 2007 Smart Grid Investment Standard, adopt a different Smart Grid Investment standard, or not adopt any Smart Grid Investment standard.

[273] Letter of the Executive Director, February 19, 2010.

Although adoption of the standard does not require investment in Smart Grid technology or infrastructure, the Commission believes that adoption of the EISA 2007 Smart Grid Investment Standard is appropriate in that it will require the electric utilities to investigate and consider Smart Grid technology and infrastructure as part of their investment decisions. The Commission, therefore, has determined that the jurisdictional electric utilities shall adopt the EISA 2007 Smart Grid Investment Standard.

Kentucky Power was the only electric utility that supported adoption of the EISA 2007 Smart Grid Investment Standard. However, all of the electric utilities indicated they supported either the concept or the intent of the standard. Furthermore, all electric utilities indicated their willingness to collaboratively address Smart Grid issues, which is consistent with the recommendation of EKPC and its member-cooperatives.

The Commission also believes that it is appropriate to use the March 25, 2011 report of the Joint Parties as well as the joint comments regarding the report submitted by the AG and CAC as the basis for establishing another administrative case focusing solely on Smart Grid and Smart Meter initiatives and to manage the collaborative effort. The new administrative proceeding will focus on the many issues relating to Smart Grid and Smart Meter deployment, including but not limited to the development of time-of-use or dynamic pricing and other activities that will allow customers to better manage their energy usage.

The additional issues set forth in the EISA 2007 Smart Grid Investment Standard that require each state to consider rate recovery of Smart Grid expenditures and the recovery of the book value of obsolete equipment associated with Smart Grid

deployment will be further considered as part of the administrative proceeding. Also, it is clear from the electric utilities' testimony as well as their responses to data requests that, while all are considering some sort of Smart Grid investment, the manner and focus of their consideration is very diverse. Currently, neither Big Rivers nor EKPC nor any of the IOUs have requested or been required to obtain a CPCN for the implementation of Smart Grid or smart meter technology. However, most of the member-owner distribution cooperatives that have implemented an AMR or AMI system have obtained CPCNs, either in a work plan application or in a separate application. As a result, it is likely that adoption of the EISA 2007 Smart Grid Investment Standard may raise questions by the IOUs and generation cooperatives about what specific actions they may be required to take to comply with the adoption of the standard. This issue shall also be addressed in the proposed administrative proceeding.

Therefore, coincident with the issuance of this Order, the Commission will issue an Order establishing an administrative case to investigate the broad array of Smart Grid issues. That Order will also incorporate the efforts of the collaborative to date as described above.

The Commission has entered into contracts with the University of Kentucky and the University of Louisville that provide for engineering doctoral candidates to research smart grid and develop a smart grid roadmap for Kentucky. The manner in which to coordinate the work of the collaborative team and that of the universities' doctoral candidates will also be addressed in the administrative proceeding.

Smart Grid Information Standard ("EISA 2007 Smart Grid Information Standard")

Section 1307(a)(17) of EISA 2007 amends PURPA by including a Smart Grid Information standard for electric utilities. Essentially, the standard requires that electric purchasers shall be provided direct access to the following types of information from their electricity supplier:

- Prices – Purchasers and other interested persons shall be provided with information on time-based electricity prices in the wholesale electricity market, and time-based electricity retail prices or rates that are available to the consumers.

- Usage – Purchasers shall be provided with the number of electricity units, expressed in kWh, purchased by them.

- Intervals and Projections – Updates of information on prices and usage shall be offered on a daily basis, shall include hourly price and use information, where available, and shall include a day-ahead projection of such price information to the extent available.

- Sources – Purchasers and other interested persons shall be provided annually with written information on the sources of the power provided by the utility, to the extent that it can be determined, by type of generation, including greenhouse gas emissions associated with each type of generation, for intervals during which such information is available on a cost-effective basis.

The EISA 2007 Smart Grid Information Standard also requires electric utilities to provide consumers access to their own information at any time through the internet and by other means of communication elected by the electric utility for smart grid applications. Other interested persons shall be able to access information not specific to any customer through the Internet. Customer-specific information shall be provided solely to that customer.

Discussion

As a whole, the electric utilities recommend against adopting the EISA 2007 Smart Grid Information Standard.

Big Rivers and its Member-Cooperatives

Big Rivers and its member cooperatives are of the opinion that the standard is too vague to determine the impact it would have on customers. Big Rivers stated that its member-cooperatives are well aware of Big Rivers' wholesale pricing and are provided information on projected wholesale pricing. According to Big Rivers, this information is also available to the member-owners' retail customers. Big Rivers also stated that it provides usage information to its member-cooperatives, who in turn provide usage information to their retail customers with their electric bills.[274]

Duke Kentucky

Duke Kentucky did not specifically address this standard. It did, however, describe its Real Time Pricing tariff (Rate RTP) and other tariffs that provide some of the information required by the EISA 2007 Smart Grid Information Standard.

EKPC and its Member-Cooperatives

EKPC and its member-cooperatives recommend that the Commission not adopt the proposed EISA 2007 Smart Grid Information Standard.[275] In its testimony, EKPC and its member-cooperatives stated that they believe that the EISA 2007 Smart Grid Information Standard recognizes that the economic costs of power systems in the short

[274] Big Rivers Joint Testimony at 17.

[275] Camfield Testimony at 7.

term can vary greatly according to time and location. According to EKPC and its member-cooperatives, this is due to the fact that power flows within the transmission network follow the laws of physics and electricity cannot be readily stored, which would allow inventories to be used to dampen the variation in marginal costs over time. As a result, economic costs and wholesale market prices can be highly differentiated among network locations. This means that substantial cost savings and overall gains in market efficiency can potentially be realized through marginal cost-based pricing programs, including real-time pricing and critical-peak pricing.[276]

EKPC stated that wholesale market prices are driven by variation in electricity demand in the Eastern U.S. markets and that the level and variation in these prices may differ significantly from the costs of Kentucky service providers. Due to this disconnect, the resulting wholesale market information available to Kentucky electricity consumers may be highly inaccurate, if not misleading, in comparison to the costs of their electric service providers.[277]

Kentucky Power

Kentucky Power states that the EISA 2007 Smart Grid Information Standard is unnecessary.[278] Because its wholesale sales of energy and capacity are scheduled, settled and made publicly available through PJM Interconnection, Kentucky Power notes that adoption of this standard would require it to duplicate the information already

[276] *Id.* at 6-7.

[277] *Id.* at 7.

[278] Wagner Testimony at 35.

available and could potentially result in confusion.[279] In addition, Kentucky Power points out that information concerning its on-peak, off-peak and traditional rates are available around the clock on its web site.[280]

Given that the standard only requires the provision of prices or rates that are available to consumers, Kentucky Power believes that adoption of the EISA 2007 Smart Grid Information Standard would not benefit ratepayers, but would instead require that they absorb the cost of producing and reporting information for which they have no real use.[281]

KU and LG&E

KU and LG&E assert that the information addressed in the EISA 2007 Smart Grid Information Standard will become more widely available as the requisite technology emerges.[282] According to KU and LG&E, smart grid technologies are in the early stages of development and the availability of the information required by the standard will naturally increase as these technologies mature and become industry standards. KU and LG&E believe that requiring electric utilities to provide time-of-use information prior to the emergence of corresponding in-home technologies would be both cumbersome and expensive.[283]

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[279] *Id.* at 34-35.

[280] Wagner Testimony at 35.

[281] *Id.* at 36-37.

[282] Bellar Testimony at 10.

[283] *Id.*

Sierra Club and Mr. Geoffrey Young

The Sierra Club and Mr. Young assert that the EISA 2007 Smart Grid Information Standard is reasonable and recommend that it be adopted.

The Sierra Club maintains that ratepayers would benefit from access to knowledge about their electricity prices and sources. Given access to such information, consumers could take action to reduce their usage during peak load times, which could result in reductions to their energy requirements and electric bills as well as benefit the environment.[284] Mr. Young states that implementing such a standard would promote the transition of Kentucky's electric grid from its present day configuration to an interactive system.[285]

Commission Decision – EISA 2007 Smart Grid Information Standard

As with the other EISA 2007 standards under consideration in this administrative proceeding, the Commission has the option of adopting the EISA 2007 Smart Grid Information Standard, adopting a different Smart Grid Information standard or not adopting any Smart Grid Information standard.

The Commission declines to adopt the EISA 2007 Smart Grid Information Standard at this time. As KU and LG&E note in their testimony, the Smart Grid is still in the initial stages of development. While the availability of the information required by the standard is limited, the Commission agrees with KU and LG&E that such availability will naturally increase as the Smart Grid matures.

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[284] Sierra Club Comments at 6.

[285] Young Comments at 11.

As noted in the previous section concerning the EISA 2007 Smart Grid Investment Standard, a separate administrative case will be initiated to address the many issues relating to Smart Grid and Smart Meter deployment, including but not limited to the development of time-of-use or dynamic pricing and other activities that will allow customers to better manage their energy usage. The Commission has determined that the requirements of the 2007 EISA Smart Grid Information Standard shall also be addressed in that proceeding.

Additional Incentives for Recovery, Use, and Prevention of Industrial Waste Energy ("EISA 2007 Waste Energy Standard")

Section 374 of EISA 2007 includes the Waste Energy standard, which has six subsections that set forth the technical and procedural requirements of the standard. Section 374 also includes the conditions and criteria for implementation of the standard. Although the EISA 2007 Waste Energy Standard is similar to the four new PURPA standards, it is not an amendment to PURPA.

Discussion

According to the EISA Standards Manual, the intent of the EISA 2007 Waste Energy Standard is to encourage waste energy projects that generate net excess power. Section 374(8) of EISA 2007 defines waste energy as: exhaust heat or flared gas from any industrial process; waste gas or industrial tail gas that would otherwise be flared, incinerated or vented; and, a pressure drop in any gas, excluding any pressure drop to a condenser that subsequently vents the resulting heat. EISA 2007 defines net excess power as generation of electricity in quantities exceeding total consumption of electricity at the specific time of generation on the site at which a facility is located.

There is no specified deadline to begin consideration of the EISA 2007 Waste Energy Standard until a request is filed relating to a waste energy project. At that time, the Commission has 180 days to determine whether to implement the standard. In addition, a separate determination is required for each project. As a result, none of the jurisdictional electric utilities were required or requested to address the standard; however, several of the electric utilities did discuss their positions regarding the EISA 2007 Waste Energy Standard.

Big Rivers and its Member-Cooperatives

Big Rivers and its member-cooperatives do not believe that the Commission should adopt this standard. They testified that they have worked, and will continue to work, with customers interested in the recovery of industrial waste energy. However, they do not believe that the entire rate base should be required to subsidize a customer's efforts to recover industrial waste energy.[286]

Big Rivers and its member-cooperatives explained that they have no way to measure the impacts of this standard on customers. They further stated that they should not be required to wheel power for retail customers, nor should they be required to bear any cost associated with the efforts of one customer or a small group of customers to recover industrial waste energy.[287]

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[286] Big Rivers Joint Testimony at 18-19.

[287] *Id.*

EKPC and its Member-Cooperatives

EKPC and its member-cooperatives stated that they encourage industrial waste heat recapture for electric power generation and have a cogeneration tariff in place. EKPC and its member-cooperatives believe their cogeneration tariffs are adequate and, therefore, do not recommend the adoption of the proposed industrial waste heat standard.[288]

In their testimony, EKPC and its member-cooperatives provided their perspective on industrial waste heat. According to EKPC and its member-cooperatives, industrial waste heat refers to investment actions and technologies that capture heat produced by industrial manufacturing processes to generate electricity. EKPC and its member-cooperatives explained that, generally, the industrial sectors that utilize energy most intensively are also the sectors with the greatest potential for waste heat capture. These industries include chemicals, food process, petroleum, forest products, and primary and secondary metals. According to EKPC and its member-cooperatives, because of inherent technical inefficiencies, only a modest share of the energy input is utilized within the industrial process with the remainder lost to the atmosphere. For years, industries have attempted to capture and recycle heat through a number of technologies such as mechanical and thermal compression, condensing economizers, heat pumps, and cogeneration for electricity. EKPC and its member-cooperatives stated that a longstanding successful application of industrial waste energy is the

[288] Camfield Testimony at 13.

combined heat and power facilities on university campuses and at gas pipeline pumping stations.[289]

Kentucky Power

Kentucky Power believes that adoption of the EISA 2007 Waste Energy Standard is unnecessary, except for retail sales pursuant to Section 374(c)(2), which contravenes Kentucky law, specifically KRS 278.016 and KRS 278.018(2). KRS 278.016 divides the Commonwealth into geographical service areas for retail electric service and KRS 278.018 restricts the provision of retail electric service in those areas. As Kentucky Power testified, the direct sale by the owner or operator to a third party, other than wholesale transactions to other utilities, is considered retail wheeling, which is prohibited. Thus, Kentucky Power believes that those statutes cited above, and perhaps others, would have to be amended by the Kentucky General Assembly before such transactions could be consummated.[290]

Kentucky Power also testified that the options described in the EISA 2007 Waste Energy Standard are available to its customers through two of its Commission approved tariffs. Kentucky Power's COGEN/SPP I and COGEN/SPP II tariffs permit the waste energy recovery project owner or operator to sell the net excess electricity to Kentucky Power. Presently, if the waste energy recovery project owner or operator for any reason prefers to sell the electricity into the wholesale market, then Kentucky Power will provide transmission service, through PJM Interconnection, for the sale under the terms

[289] *Id.* at 12.

[290] Wagner Testimony at 40-41.

and conditions of Kentucky Power's FERC-approved Open Access Transmission Tariff (OATT). Finally, Kentucky Power and an owner or operator may enter into a private arrangement by means of special contracts filed with and approved by the Commission.[291]

KU and LG&E

KU and LG&E, the only other entities providing comment, stated their position that the Commission should not adopt the EISA 2007 Waste Energy Standard. They testified that they have very few customers on their Small Qualifying Facilities and Large Qualifying Facilities tariffs even though these tariffs have been in effect for more than 20 years. KU and LG&E explained that their industrial customer base largely consists of manufacturers that do not produce waste energy as contemplated by the standard.[292]

In addition, KU and LG&E testified that, while they support the capture and use of waste energy in theory, they do not support the need for additional incentives over and above the available rates. Therefore, KU and LG&E find this standard to be unnecessary and believe that the Commission should not adopt it, or any variation thereof.

Commission Decision – EISA 2007 Waste Energy Standard

Pursuant to Section 374 of EISA 2007, the Commission will not be required to make a determination regarding this standard until an appropriate project is formally presented for the Commission's review. The Commission, therefore, notes the concerns expressed by several of the jurisdictional utilities but states that it will take no

[291] *Id.* at 39-40.

[292] Bellar Testimony at 10.

action until such a project has been presented for the Commission's consideration. Once a project is presented, the Commission will have the same options regarding the EISA 2007 Waste Energy Standard with respect to the project as with the other EISA 2007 standards within the time frame allowed.

SUMMARY

For the reasons set forth above, the Commission declines to adopt the EISA 2007 IRP Standard, the electric and gas rate design standards, and the gas energy efficiency standard. The Commission adopts the EISA 2007 Smart Grid Investment Standard, which requires the jurisdictional electric utilities to investigate and consider Smart Grid technology and infrastructure as part of their investment decisions. The Commission will consider the EISA 2007 Smart Grid Information Standard as part of a separate administrative case, to be initiated in the near future. Concerning the EISA 2007 Waste Energy Standard, the Commission will address this particular standard upon the filing of an appropriate application. The Commission has determined that its own Kentucky IRP Standard should be adopted by the jurisdictional electric generating utilities. The Commission's decision not to adopt each standard does not minimize the importance the Commission gives to each standard, nor does it mitigate the need for each jurisdictional electric utility and gas utility to which the standards are applicable to work toward incorporating the principles set forth in each standard.

The Commission takes this opportunity to renew its support for the PURPA objectives of conservation of energy, optimal efficiency of resources, and equitable rates for consumers. The Commission also continues to believe that its own objectives of rate continuity, revenue stability and understandability are important. As it has in

recent requests for general rate increases by jurisdictional electric utilities, the Commission will continue to investigate the application of these objectives in future rate cases and other cases as appropriate.

IT IS HEREBY ORDERED that:

1. The PURPA standards set forth in EISA 2007 relating to IRP, electric and gas rate design, and gas energy efficiency are not to be adopted.

2. The five major LDCs shall develop policies and procedures that ensure that cost-effective energy efficiency is considered as a priority resource.

3. The Smart Grid Investment standard as set forth in EISA 2007 is hereby adopted.

4. The Smart Grid Information standard as set forth in EISA 2007 shall be considered in a separate administrative matter to be initiated by the Commission.

5. A record of the efforts of the Smart Grid Collaborative, as detailed in the Commission Staff's informal conference ("IC") memo of November, 2, 2009, Staff's IC memo of February 19, 2010, and EON's Joint Response on behalf of the parties filed on April 29, 2010, shall be incorporated into the record of the separate upcoming administrative proceeding on smart grid issues.

6. The Waste Energy standard is deferred and shall be considered at the time an application to apply the standard to a customer has been filed for the Commission's review.

7. The Kentucky IRP Standard set forth herein shall be adopted by each jurisdictional electric generating utility.

8. Within 30 days of the date of this Order, each jurisdictional electric generating utility shall submit a statement to the Commission indicating its adoption of the Kentucky IRP Standard.

9. Within 90 days of the date of this Order, each of the five major LDCs shall submit the pertinent policies and procedures to ensure that cost-effective energy efficiency is considered as a priority resource.

10. Within 30 days of the date of this Order, each jurisdictional electric generating utility shall submit a statement to the Commission indicating its adoption of the Smart Grid Investment standard as set forth in EISA 2007.

11. This case is hereby closed and removed from the Commission's docket.

By the Commission

ENTERED
OCT 06 2011
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