

**THE STATE CORPORATION COMMISSION  
OF THE STATE OF KANSAS**

Before Commissioners: Thomas E. Wright, Chairman  
Michael C. Moffet  
Joseph F. Harkins

In the Matter of a General ) Docket No. 08-GIMX-442-GIV  
Investigation Regarding Benefit-Cost )  
Analysis and Program Evaluation for )  
Energy Efficiency Programs )

**ORDER INITIATING INVESTIGATION AND ASSESSING COSTS**

The above captioned matter comes before the State Corporation Commission of the State of Kansas (Commission) for consideration and decision. Having examined its files and records, and being duly advised in the premises, the Commission makes the following findings:

**BACKGROUND**

1. In the Final Order closing the general investigation into energy efficiency programs in docket number 07-GIMX-247-GIV, *In the Matter of a General Investigation Regarding Energy Efficiency Programs*, the Commission cited with approval the efforts of utilities and Kansas agencies to develop energy efficiency measures and programs. The Commission noted its desire to work collaboratively with utilities and other entities to encourage, facilitate and guide current and future energy efficiency programs.

2. The Commission observed the Legislature has directed the Commission to develop a comprehensive state energy conservation plan and procedures for implementing such a plan. K.S.A. 74-616(b). In light of the various programs being initiated by utilities, state and local governments, and the private sector, such as residential, commercial, and industrial customers, the Commission decided a policy framework through which energy efficiency programs may be reviewed and evaluated on a uniform and consistent basis would be useful.

3. The Commission found that the Commission has broad authority to provide incentives to promote efficiency and conservation of energy in addition to increases in rates of return. The Commission also found it has wide discretion to consider and apply methodologies for approving energy efficiency programs, including different cost-benefit tests, and that the Commission is not limited to any particular approach. The Commission found this discretion included considering “externalities,” such as environmental benefits, in our analysis. The Commission found there is a need to develop Commission policy for key elements of a comprehensive energy efficiency/conservation program and ordered the opening of two concurrent investigations to facilitate development and subsequent action on these key elements.

4. This docket will address methods of benefit-cost analysis and program evaluation for energy efficiency programs. This docket will also address real-time pricing. A concurrent investigation will address methods of cost recovery for energy efficiency programs, including the issue of “decoupling.”

## FINDINGS AND CONCLUSIONS

5. The Commission intends to use this docket, along with the concurrent investigation addressing methods of cost recovery, to develop rules and policy and create a regulatory framework. The goal in this docket is to assure that energy efficiency programs can be economically justified and that the Commission has or can develop the capacity to appropriately monitor and evaluate approved programs. Specifically, this docket will address benefit-cost standards to be applied to Demand Side Management (DSM) and to Demand Response (DR) programs, and program evaluation standards to be applied to DSM and DR programs. Furthermore, the Commission desires to explore the evaluation of real time pricing and other rate structures that may encourage energy conservation or load shifting. Finally, the Commission wishes to address the implications of using the various benefit-cost tests for the recovery of energy efficiency program costs.

6. In order to facilitate the clarity of the discussion, the Commission set forth definitions for DSM and DR programs in the companion cost recovery investigation docket and the Commission adopts those definitions here as well. By DSM programs, the Commission refers to measures that change the amount or timing of electricity consumption in order to utilize scarce electric supply resources most efficiently.<sup>1</sup> These DSM measures, or “conservation programs,”<sup>2</sup>

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<sup>1</sup> This definition is adopted from a presentation by Tim Scanlon, Commercial & Federal Lead for Energy Efficiency, Bonneville Power Administration, on “Regulatory Treatment of Demand-Side Management & Demand Response Programs,” at NMSU Basics Conference, October 17, 2007, Albuquerque, New Mexico.

increase energy efficiency by focusing on reducing utility customers' overall energy requirements, during all or significant portions of the year, not only customers' peak demands. These programs replace non-energy efficient lighting, heating, cooling, drive power, or building equipment or materials with energy efficient substitutions, while maintaining a comparable level of service or utility, and should result in lower customer bills.<sup>3</sup>

7. By DR programs, the Commission refers to measures that reduce or shift demand for power during system emergencies, energy or capacity shortages, and periods of high wholesale market prices so as to make the best use of generation, transmission and distribution assets.<sup>4</sup> This definition includes "load management" or "peak-load management," which involve reduction of demand during peak generation periods or shifting demand from peak to non-peak periods.<sup>5</sup>

8. DR programs may be categorized into two groups: (1) rate structures that provide a price signal to customers reflecting the marginal costs of electricity production; and (2) payments to customers for reducing their energy load when

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<sup>2</sup> *California Standard Practice Manual: Economic Analysis of Demand Side Programs and Projects*, Governor's Office of Planning and Research 2 (July 2002) (hereinafter *CA Manual*).

<sup>3</sup> *CA Manual, supra*, 2.

<sup>4</sup> Scanlon, *supra*. See *Benefits of Demand Response in Electricity Markets and Recommendations for Achieving Them: A Report to the United States Congress Pursuant to Section 1252 of the Energy Policy Act of 2005*, U.S. Department of Energy, ix-x (February 2006) (hereinafter *DOE Demand Response*).

<sup>5</sup> *CA Manual, supra*, 2.

requested.<sup>6</sup> DR programs may include interruptible load tariffs, time-of-use rates<sup>7</sup>, real-time pricing<sup>8</sup>, and direct load control.<sup>9</sup> These programs may target peak periods for load reduction or shape and control load during non-peak periods to respond to variations in power availability or cost. Other types of DR programs include interruptible and curtailable rates that provide discounts to customers willing to decrease load, and energy management computer-based systems that control a customer's lighting, heating, cooling and ventilation systems to manage peak loads. These systems may be controlled by the customer or from a central location.<sup>10</sup>

9. Recently, the Department of Energy suggested regulators should consider establishing a formal evaluation framework for utility energy efficiency programs.<sup>11</sup> The Department noted well-established and tested tools are available

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<sup>6</sup> Demand Bidding or Buyback programs are another type of DR program that involve providing consumers an opportunity to curtail their energy demand in return for a certain price. DOE *Demand Response*, *supra*, xii. These programs view reducing load as equivalent to generating more power.

<sup>7</sup> Time-of-use customer rates track the variance in rates paid by utilities during peak periods and off-peak periods, reflecting the average cost of generating and delivering power during those time periods. DOE *Demand Response*, *supra*, xii. Time-of-use rates are incorporated into a tariff and may be voluntary or mandatory.

<sup>8</sup> Real-time pricing involves hour-to-hour variation in price levels that reflect wholesale energy prices. DOE *Demand Response*, *supra*, xii. Real-time pricing for consumers may involve installation of meters that provide real-time pricing information.

<sup>9</sup> Direct load control programs focus on equipment that may be turned off remotely by the utility for short periods of time, such as central air conditioners and water heaters. DOE *Demand Response*, *supra*, xii. These programs require that communication systems be installed on the customer equipment involved so that signals may be received from the utility. Generally, participation is voluntary, and a participating customer does not pay for the equipment and receives incentives such as credits on their bill. Scanlon, *supra*.

<sup>10</sup> Scanlon, *supra*.

<sup>11</sup> *State and Regional Policies that Promote Energy Efficiency Programs Carried Out by Electric and Gas Utilities: A Report to the United States Congress Pursuant to Section 139 of the Energy Policy Act of 2005*, U.S. Department of Energy, 11 (March 2007) (hereinafter *DOE State Policies*).

to assist regulators in developing frameworks to analyze cost-effectiveness of potential programs and evaluate the performance of programs.

10. The basic benefit-cost tests useful for evaluating DR and DSM programs were discussed in a workshop prior to the opening of the docket in 07-GIMX-247-GIV, noted in the Order Initiating Investigation in that docket, and discussed generally by the parties in their comments.<sup>12</sup> These tests include the Participant<sup>13</sup>, Ratepayer Impact Measure (RIM)<sup>14</sup>, Total Resource Cost (TRC)<sup>15</sup>, and Program Administrator Cost.<sup>16</sup> The tests are not intended to be used individually or in isolation, as each provides a different perspective on the program being measured.<sup>17</sup> Selecting the tests to be employed and the manner in which the

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<sup>12</sup> The most commonly used assessment tests, and the tests noted in this Order, are taken from the *California Standard Practice Manual*. DOE *State Policies*, *supra*, 12.

<sup>13</sup> The Participant Test measures quantifiable benefits and costs to a customer due to participation in a program. These quantifiable benefits would include reduction in utility bills, incentives, and tax credits. Costs include out-of-pocket expenses and any increases in the utility bill. *CA Manual*, *supra*, 8.

<sup>14</sup> The Ratepayer Impact Measure Test measures the affect to customer bills or rates due to changes in utility revenues and operating costs as a result of a program. The benefits measured are the savings from avoided supply costs such as reduction in transmission, distribution, generation, and capacity and the increase in revenues for periods where load has been increased. The costs measured include program costs to the utility and/or other entities from the creation or administration of the program, incentives paid, and decreased revenues for load reduction (plus increased supply costs where load has been increased. *CA Manual*, *supra*, 13.

<sup>15</sup> The Total Resource Cost Test measures net costs of a program as an energy resource option based on the total costs, including both the utility's and the customer participants' costs. Benefits measured include avoided supply costs and reductions in transmission, distribution, generation, and capacity costs. A variation of this test, called the Societal Test in the California Standard Practice Manual, adds the effects of externalities. *CA Manual*, *supra*, 18. This test may potentially also capture total benefits, such as avoided supply costs plus externalities, and, where energy supply project evaluations include total costs of generation and/or transmission, the test may provide a basis for comparing demand and supply-side options. *Id.* at 21. A disadvantage of this test, as described by the California Standard Practice Manual, is that it does not capture rate impacts of a program.

<sup>16</sup> The Program Administrator Cost Test measures net costs of a program as a resource option based on costs incurred by the program administrator, such as program costs, incentives paid, and any increased supply costs. Benefits included in this test are similar to the TRC test. *CA Manual*, *supra*, 23. Like the TRC test, this test does not capture a program's impact on customer rates. *Id.* at 24.

<sup>17</sup> *CA Manual*, *supra*, 6. These perspectives are those of the participants, utilities, ratepayers, and society, as well as overall cost-effectiveness. DOE *State Policies*, *supra*, 12.

results will be used is a matter of policy. It may be appropriate to vary input components for the tests, such as externalities, for different types of programs depending on the policy of the agency.<sup>18</sup> Finally, utilizing these tests involves decisions about how test results are to be expressed and the inputs into the tests.<sup>19</sup>

11. The Staff Report and Recommendation in Docket No. 07-GIMX-247-GIV suggested that the Commission adopt an interim approach for approval of energy efficiency programs, including both DR and DSM programs. That approach included the requirement that utilities use both the Total Resource Cost (“TRC”) and Ratepayer Impact Measure (“RIM”) tests to evaluate benefits and costs of programs. In assessing avoided costs, Staff recommended that the tests should include reasonable estimates of future environmental regulation costs, including costs associated with control of carbon dioxide. Staff suggested that if a potential program passed the TRC test but not the RIM test, it should then be evaluated with possible external cost savings and benefits. If the program still failed the RIM test, it might nevertheless be justified by a favorable benefit cost ratio under the TRC test.

12. The Commission believes the following questions are at issue with regards to both DSM and DR programs:

- Should Staff’s proposed interim approach be adopted indefinitely? If not, what approach is more reasonable?

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<sup>18</sup> *CA Manual, supra, 7.*

<sup>19</sup> *CA Manual, supra, 4, 7, 26.*

- What are reasonable estimates for the avoided costs associated with carbon dioxide regulation?
- What are reasonable costs to include in benefit cost tests for “external” costs, which presumably would include the societal costs associated with climate change and certain emissions such as carbon dioxide? In addition, should known external costs associated with a number of pollutants including SO<sub>x</sub>, NO<sub>x</sub>, particulate material and mercury be included?
- How should these costs be measured? Can certain costs be adequately quantified by assuming future cap and trade emission regulation or taxation of emissions such as carbon dioxide?
- What specific benefit cost ratios, if any, should be adopted as guidelines either under the various scenarios proposed by Staff or otherwise, e.g. if a program failed the RIM test, even including external cost savings, what ratio under the TRC test would still justify proceeding?
- With regard to the various benefit-cost tests, what are the implications for how various energy efficiency “costs,” i.e. program costs, lost revenues, and incentives, should be recovered in rates? For example, if a program does not pass the RIM test but is implemented based on the TRC test, should there be some attempt through rate design or otherwise to compensate non-participants in the energy efficiency programs for the lack of benefits accruing to them? Should there be an attempt to recover costs from non-participants who may benefit from such programs – such as a universal system benefits charge?

13. Furthermore, the Commission believes that it will be important to monitor and evaluate the results of energy efficiency programs in order to compare the actual performance with the estimates used in applying the benefit-cost tests. The means to effectively monitor these programs will need to be addressed in this docket. Effective monitoring should result in better initial evaluations of potential energy efficiency programs and more accurate application of the benefit-cost tests as time goes on. The actual performance results of programs may, of course, also be necessary to implement any incentive or decoupling mechanisms approved by the Commission, depending on how such mechanisms are designed.



14. In order to achieve effective monitoring, Commission staff may need reorganization and specialized training. The extent of Staff resources needed for this effort may depend somewhat upon the evaluation standards and practices of the utility companies. Therefore, information from the utilities on their current and expected practices would be helpful to the Commission. In particular, the Commission seeks information as to whether utilities have adopted any standard protocols such as the “International Performance Measurement and Verification Protocol” (IPMVP)<sup>20</sup> and whether there would be benefits to adoption of common standards and protocols.

15. The Commission believes that real time pricing and rate structures that may encourage load-shifting or energy conservation should be explored. The Commission seeks information on how such rate design programs should fit into the overall picture of energy efficiency and what kind of benefit cost tests or other evaluation would be appropriate. In addition, the Commission is interested in information and comments on the current status of “smart metering” technology and its costs and benefits.

16. Specifically, the Commission solicits comments and, if possible, clear proposals, as follows:

A. Benefit-Cost Standards

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<sup>20</sup> Published by the Efficiency Valuation Organization. Available at: <http://www.evo-world.org/>. These are standard guidelines for measurement and verification. DOE *State Policies, supra*, 12. The Department of Energy cites as examples of standardized savings estimates for energy efficiency the California Database for Energy Efficiency Resources at [www.energy.ca.gov/deer/](http://www.energy.ca.gov/deer/), and the NPCC Conservation Regional Technical Forum, at <http://www.nwcouncil.org/rtf/Default.htm>.

1. DSM Programs

How should the Commission evaluate DSM programs for costs and benefits? What tests should be employed and what factors considered? The Commission seeks responses addressing the issues noted above in paragraph 12. Should Staff's proposed approach be adopted by the Commission? If not, what benefit-cost test approach should the Commission employ? The Commission desires respondents to set forth clear proposals embodying a framework for benefit-cost analysis and approval of these programs.

2. DR Programs

What benefit-cost standards should be applied to DR programs? Again, the Commission seeks responses addressing the questions and issues set forth in paragraph 12, above, and whether Staff's suggested approach should be followed. If not, the Commission seeks clear alternative proposals that set out the tests to be employed, the factors to be considered, and the basis and rationale supporting adoption of the suggested approach by this Commission.

- B. Program Evaluation

1. DSM Programs

What are the additional staffing requirements associated with these programs for the utilities and the Commission? What protocols have the utilities or other parties used themselves in evaluating DSM programs? What has been the experience with standard protocols such as the IPMVP? Would there be a benefit

in adopting a common, standard protocol to be used in Kansas, and if so, what should that protocol be?

## 2. DR Programs

Again, what are the additional staffing requirements associated with these programs for the utilities and the Commission? What program evaluation methods have been employed by utilities and other parties? If standard protocols have been used, what has been learned? Should a common evaluation protocol be adopted by the Commission? The Commission seeks clear proposals it may utilize in adopting a regulatory framework.

17. After receiving comments, the Commission will hold an informal workshop. The Commissioners will participate in this workshop. Following the workshop, interested parties will have an opportunity to present the Commission with additional comments and testimony.

18. The Commission notes that the timelines for a decision in this docket and in the companion docket exploring cost recovery for energy efficiency programs are intended as goals. The investigations are meant to be concurrent and complementary. The respective timelines were not meant to have any effect on the parties' substantive comments or stances, but were set forth based on the considerations that the Commission wished to pursue these investigations vigorously and the belief that decisions about benefit-cost testing might be somewhat less involved and controversial as opposed to decisions about program cost recovery. Should circumstances develop through the course of these

investigations that would suggest alternative timelines or other changes would result in a more useful and productive dialogue and outcome, the Commission will consider such changes.

19. The Commission concludes that all jurisdictional electric and natural gas utilities should be made parties to this docket and will be served with a copy of this Order. In addition, a copy of this Order should be delivered to the Sierra Club due to its participation in 07-GIMX-247-GIV. This docket involves matters that may lead to issues important to residential and small commercial utility customers so the Commission invites the Citizens' Utility Ratepayer Board (CURB) to file a petition for intervention to join this docket. This Order will also be served on municipal and cooperative utilities not subject to our jurisdiction and all parties in 07-GIMX-247-GIV. A copy of this Order will also be served upon the Kansas Energy Council.

20. The Commission will accept written comments from the public while this docket is pending. Comments should reference Docket Number 08-GIMX-442-GIV, *In the Matter of a General Investigation Regarding Benefit-Cost Analysis and Program Evaluation for Energy Efficiency Programs*, and be sent to the Kansas Corporation Commission, Office of Public Affairs and Consumer Protection, 1500 SW Arrowhead Road, Topeka, Kansas 66604, or to [public.affairs@kcc.state.ks.us](mailto:public.affairs@kcc.state.ks.us). Comments may also be made by calling 1-800-662-0027.

21. Any interested person may petition the Commission to participate in this docket as a party. Petitions for intervention should be filed by November 26, 2007 but petitions filed after that date will be considered and a motion to file out of time will not be necessary. All parties that wish to participate actively in this docket and address the Commission on the issues noted above must file an entry of appearance to be included on a restricted service list, which will assure receipt of copies of comments and other pleadings. To assure being on the initial restricted service list, an entry of appearance shall be filed no later than November 26, 2007.

22. Proposals and comments should be filed no later than December 21, 2007 by 3:00 p.m. Replies shall be submitted by January 14, 2008.

23. Pursuant to K.S.A. 66-1502, the Commission finds that expenses reasonably attributable to this investigation will exceed \$100 and hereby assesses the expenses against all jurisdictional electric and natural gas utilities. These expenses shall be assessed beginning three business days after the Commission gives the utilities notice of the assessment through service of this Order by United States Mail. These public utilities are hereby notified that they have an opportunity to request a hearing on this assessment in accordance with the provisions of the Kansas Administrative Procedure Act, K.S.A. 77-501 *et. seq.*

IT IS, THEREFORE, BY THE COMMISSION ORDERED THAT:

A. All jurisdictional electric and natural gas public utilities are hereby made a party to this docket and assessed the costs of this investigation and will be served with a copy of this Order.

B. Petitions for intervention should be filed no later than November 26, 2007 but petitions filed after that date will be considered and no motion to file out of time will be necessary. Entries of appearance should be filed no later than November 26, 2007.

C. Proposals and comments to the questions set forth above shall be submitted by December 21, 2007 by 3:00 p.m. Replies shall be submitted by January 14, 2008.

D. This order will be served as described in paragraph 19, above.

E. A party may file a petition for reconsideration of this order within 15 days of the service of this order. If this order is mailed, service is complete upon mailing and 3 days may be added to the above time frame.

F. The Commission retains jurisdiction over the subject matter and parties for the purpose of entering such further orders as it may deem necessary.

**BY THE COMMISSION IT IS SO ORDERED.**

Wright, Chmn; Moffet, Com.; Harkins, Com.

Dated: NOV 06 2007

ORDER MAILED

NOV 07 2007

 Executive  
Director

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Susan K. Duffy  
Executive Director

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