COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

INVESTIGATION INTO THE FEASIBILITY OF IMPLEMENTING DEMAND-SIDE MANAGEMENT COST RECOVERY AND INCENTIVE MECHANISMS	))))	ADMINISTRATIVE CASE NO. 341

O R D E R

On October 9, 1986, the Commission initiated an inquiry into the options available for meeting Kentucky's present and future electricity needs.[1] The Commission believed that such an inquiry was necessary in order to assure ratepayers that all reasonable alternatives for the provision of a reliable, low-cost supply of electricity were being carefully considered.

As a result of that inquiry, the Commission promulgated an integrated resource planning ("IRP") regulation, 807 KAR 5:058, on December 18, 1990 which provides that the six major jurisdictional electric utilities serving Kentucky make biennial filings of their long-range (15 year) forecasts of energy requirements and peak demands and detailed resource assessment and acquisition plans. The utilities affected by this regulation are Big Rivers Electric Corporation, East Kentucky Power Cooperative, Louisville Gas and Electric Company, Kentucky Power Company, Kentucky Utilities

---

1 Administrative Case No. 308, An Inquiry Into Kentucky's Present and Future Electric Needs and The Alternatives For Meeting Those Needs.

Company, and The Union Light, Heat and Power Company. These utilities made their first IRP filings last year.

The resource assessment and acquisition plans filed by the utilities identify and discuss the opportunities for and feasibility of various demand-side and supply-side resource options. Supply-side options include the construction of new generating facilities, bulk electricity transactions within and outside the state, and the purchase of non-utility generated electricity. Demand-side management ("DSM") options encompass any utility activity intended to influence the level and pattern of customer loads. Typical utility DSM programs are informational, rate, or promotional activities which may be designed to primarily affect energy consumption, as in strategic conservation and strategic load growth, or to influence demand levels, as in peak clipping, valley filling, and load shifting. Many utilities around the country are finding that carefully planned DSM programs are reasonable and cost-effective resource options.

Under current regulatory practices, electric rates are derived from the utility's allowed revenue requirement and expected sales. Since revenues are derived from sales, a utility's profits (and rate of return on investments) are directly linked to electricity sales revenues. A utility is able to increase its profits by increasing its sales of electricity. For this reason there may be inherent disincentives for a utility to promote electricity conservation or other DSM programs which may reduce sales. Furthermore, uncertainty regarding the regulatory

treatment of DSM program expenditures and investments could also impede the implementation of utility DSM programs.

The Commission has become increasingly aware of the need for regulatory guidance in determining the feasibility of designing and implementing mechanisms for the recovery of costs related to electric utility DSM programs, the recovery of revenue losses resulting from DSM programs, and the provision of financial incentives to electric utilities that undertake cost-effective DSM programs. The Commission believes that an investigation into these and related issues is necessary to ensure that the state's electric utilities are fully considering all reasonable and cost-effective demand-side resource options in the development of future resource plans. In order for this investigation to draw from the widest possible range of viewpoints, the Commission strongly encourages participation by rural electric cooperatives, Berea College, the Attorney General, city and county governments, consumer interest groups and other interested parties.

The Commission has identified certain issues that should be researched and analyzed in this investigation. Following is a brief discussion of these issues. This list is not meant to be all inclusive and parties to this proceeding are invited to identify and discuss other pertinent issues.

DEMAND-SIDE MANAGEMENT PROGRAM COST RECOVERY MECHANISMS

Balancing-Account Reconciliation[2]

A utility recovers expenditures for eligible resources as it incurs them, either in base rates or through a surcharge. Cost recovery is based on a projected expenditure level. Differences between actual and projected expenditures (positive or negative) accrue interest. The net difference is applied periodically to adjust the cost recovery amount.

Capitalization[3]

A utility is permitted to amortize allowed DSM expenditures over a long-term period related to the length of benefits, and to earn a return on these expenditures during the amortization period. This method puts cost recovery of demand-side and supply-side resources on an equal footing.

LOST REVENUE RECOVERY MECHANISMS

Decoupling Profits from Sales[4]

Decoupling is a procedure in which the link between a utility's sales and profits is severed. Some states have found that decoupling utility profits from sales is an important step toward correcting the current regulatory system's incentives for a

---

2 Reid, M. and Weaver, E. (1991) "The Michigan Regulatory Incentives Study for Electric Utilities: Phase I Final Report," Barakat & Chamberlin, Inc.

3 Id.

4 Moskovitz, D. (1989) "Profits and Progress Through Least-Cost Planning," for The National Association of Regulatory Utility Commissioners (NARUC).

utility to increase sales. Under current regulations, increased sales mean increased profits. Therefore, a strong incentive exists for utilities to follow a profit maximizing strategy which leads to more sales and less DSM, even if DSM programs are profitable. There are presently two major decoupling mechanisms in practice.

Electric Revenue Adjustment Mechanism ("ERAM")[5]

Decoupling profits from sales is most often accomplished by guaranteeing a utility a level of revenue equal to its allowed revenue requirements determined in a rate case using a future test-year approach. The ERAM method uses the allowed revenue established in a rate case and, on a going-forward basis, tracks non-fuel revenue as it is received by the utility. To the extent that actual revenue deviates from allowed revenue, the company either surcharges or refunds ratepayers. In this way, disincentives for utilities pursuing DSM activities have been removed since allowed revenue requirements have been guaranteed. Note that this fixes a utility's revenues, but not profits or rate of return. A utility can still increase its profits by reducing operating expenditures. Therefore, the incentive to pursue least cost business activities remains with the utilities.

ERAM on a Per-Customer Basis[6]

A variation on the ERAM exists, which can be implemented in

---

5 Marnay, C. and Comnes, G.A. (1990) "Ratemaking for Conservation: The California ERAM Experience," Lawrence Berkeley Laboratory.

6 Moskovitz, D.

states using either historic or future test years. At the time of a rate case, revenue requirement is divided by the corresponding number of customers (by customer class). This produces a revenue-per-customer limit which would then operate like ERAM. While new rates are in effect, the utility tracks non-fuel revenues received from customers, as well as the number of customers. Rates are adjusted annually so the utility retains only the allowed non-fuel revenue per customer. This approach allows utilities to retain incremental revenues associated with higher sales due to changes in the number of customers.

Lost Revenue Adjustment[7]

This allows a utility to collect shortfalls in recovery of authorized fixed costs attributable to implementation of sales-reducing resources whose impact was not assessed fully when rates were set.

FINANCIAL INCENTIVE MECHANISMS

Rate of Return Adjustment[8]

The most common approach to providing incentives for investment in DSM programs is to adjust a utility's allowed rate of return on equity or overall rate of return in relation to a specified accomplishment, such as achieving a target level of conservation or some other DSM measure. The adjusted rate of return can be applied to total investment (ratebase) or to just that portion of ratebase which includes investments in DSM

---

7 Reid, M. and Weaver, E.

8 Moskovitz, D.

activities. Rate of return on total investment can also be adjusted according to other performance criteria, such as reducing customer bills.

Bounty

This approach provides a payment to utilities in return for specified achievements. For example, "X" cents will be paid to a utility for every actual KWH saved as a result of DSM improvements.

Shared Savings[9]

Shared savings indicate that the utility may receive a percentage of the benefits attributable to its DSM programs. While rate of return adjustments and bounties could be viewed as shared savings plans, there are other incentive plans which would specifically identify a savings and propose a sharing mechanism to compensate the utility for all or part of the direct and indirect costs incurred from an energy efficiency improvement. Variations of this approach include:

1. Estimated Resource Savings - This approach identifies a net resource savings as the difference between the avoided cost and the cost of an energy efficiency improvement, where the DSM savings are estimated.

2. Actual Resource Savings - This approach is the same as in the estimated case, except that net savings are based upon actual DSM savings measurements.

---

9 Id. and Eto J., Destribats, A., and Schultz, D. (1992) "Sharing the Savings to Promote Energy Efficiency," Lawrence Berkeley Laboratory.

3. Customer Bill Savings - This approach functions in much the same way as third-party energy service companies that identify reductions in a customer's bill after an energy improvement. These savings are then shared by the efficiency provider and the customer.

4. Unbundled Energy Services - This approach unbundles energy-supply and energy-savings services in some fashion, where cost effective energy conservation services are "bought" and "sold" from and to customers.

IT IS THEREFORE ORDERED that:

1. An investigation into the feasibility of implementing DSM cost recovery and incentive mechanisms be and it hereby is initiated.

2. Big Rivers Electric Corporation, East Kentucky Power Cooperative, Louisville Gas and Electric Company, Kentucky Power Company, Kentucky Utilities Company, and The Union Light, Heat and Power Company are hereby made parties to this investigation.

3. The above-named parties to this investigation shall file written responses, individually or jointly, on or before September 1, 1992 to the questions set forth in Appendix A, which is attached hereto and incorporated herein.

4. Any other entity that desires to participate in this investigation shall file on or before August 17, 1992 a motion to intervene pursuant to 807 KAR 5:001, Section 3(8). Any responses by intervenors to the questions set forth in Appendix A shall be filed on or before September 1, 1992.

Done at Frankfort, Kentucky, this 24th day of July, 1992.

PUBLIC SERVICE COMMISSION

Chairman

Vice Chairman

Commissioner

ATTEST:

Executive Director, Acting

APPENDIX A

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE COMMISSION IN ADMINISTRATIVE CASE NO. 341 DATED 7/24/92

AREAS OF INQUIRY

1. Should the Commission adopt some form of DSM program cost recovery mechanism?

a. If not, why not?

b. If so, would a balancing-account reconciliation or capitalization method be the most appropriate mechanism to use? Explain the reasons for the options chosen.

2. Should the Commission combine DSM program cost recovery and lost revenue recovery mechanisms?

a. If not, why not?

b. If so, what would be the best combination of programs?

3. Should the Commission adopt some form of decoupling mechanism?

a. If not, why not?

b. If so:

(1) How should the mechanism be structured?

(2) How often should the revenue review and adjustment occur and why?

(3) What is the best procedure for revenue review?

4. The ERAM decoupling model uses a future test year approach in setting the utility's non-fuel revenue requirement. Comment on the appropriateness of using this model in Kentucky.

5. The ERAM model, which eliminates the link between sales and overall revenue levels, tends to insulate the utility's profits and rate of return from the effects of conservation, economic fluctuations and weather.

a. Given this insulation, would the market perceive a change in the riskiness of the utility, resulting in a change in the utility's rate of return?

b. By what magnitude would the rate of return be expected to change?

c. Would the Commission be justified in reflecting this perceived change in riskiness in the utility's allowed rate of return.

6. Comment on the appropriateness of using a decoupling method such as an ERAM on a per-customer basis in Kentucky.

7. Most states with a reconciled fuel adjustment clause either explicitly or implicitly allocate average fuel cost to each KWH sold. For example, a $0.07 commercial rate and a $0.05 industrial rate each include $0.02 of average fuel cost. This means that the non-fuel contribution to earnings is $0.05 for the commercial rate and $0.03 for the industrial rate. Similarly, for utilities with time-of-use or seasonal rates, the higher on-peak rates make a greater contribution to profits. For example, a utility may have a $0.10 per KWH on-peak rate and a $0.05 per KWH off-peak rate, including a fuel cost of $0.02. This means that the non-fuel contribution to profits is higher with on-peak rates. As an incentive to shift consumption from on-peak to off-peak

periods, comment on the appropriateness of altering the manner in which the non-fuel component in rates is accounted for, such that:

a. A greater proportion of on-peak rates will be treated as fuel revenue and a greater proportion of off-peak rates will be treated as non-fuel revenue.

b. Creating actual or "accounting" block rates which would alter the treatment of fuel and non-fuel revenues. An accounting block rate would change the treatment of revenues, without actually changing the rates as seen by customers.

8. As an alternative to decoupling:

a. Comment on the appropriateness of using lost revenue adjustments to recover lost revenue resulting from DSM programs.

b. Explain whether this method is preferable to implementing a decoupling mechanism.

(1) From the company's point of view.

(2) From the customer's point of view.

9. Comment on the appropriateness of using rate of return adjustments as an incentive for pursuing DSM investments.

10. With respect to adjusting the rate of return on total rate base in relation to a specified accomplishment, such as achieving a target level of conservation, a reduction in customer bills or a specified level of DSM activity:

a. Explain how utility performance should be evaluated and why the chosen evaluation measures are better than other evaluation measures.

b. How would good performance be translated into higher rates of return?

c. Explain whether or not there should be a penalty for failure to achieve acceptable performance levels.

11. Comment on the appropriateness of adjusting the rate of return according to the level of DSM investment, assuming costs are capitalized.

12. With respect to adjusting the rate of return on the ratebase associated with DSM investment in relation to a specified accomplishment:

a. Explain how utility performance should be evaluated and why the specified evaluation measure(s) is better than alternative measures.

b. How would good performance be translated into higher rates of return?

c. Explain whether or not there should be a penalty for failure to achieve acceptable performance levels.

13. Explain whether the adjustment of the rate of return according to customer bill changes is an appropriate method to use in Kentucky.

14. With respect to adjusting the rate of return according to customer bill changes:

a. Explain how performance should be evaluated and why this measure(s) is better than alternatives.

b. How would good performance be translated into higher rates of return?