State EE/RE Technical Forum

Call #8: Decoupling and Other Mechanisms to Address Utility Disincentives for Implementing Energy Efficiency

May 19, 2005, 2:00 – 3:30 PM EDT

Overview

Energy efficiency is a proven least-cost approach to meeting electricity demand in many instances. It also carries benefits for system reliability, environmental impacts and economic development, and it can reduce or delay the need for new generation and transmission. Under many rate structures, however, efficiency investments lead to a loss of profits that can be several times greater than the lost revenue. For instance, some utilities see a 5% loss in profits for every 1% loss in sales.[1] A number of states are working to address this disincentive and/or provide performance-based incentives through a variety of mechanisms, including:

1. Decoupling sales from profits.
2. Adjusting for lost revenue.
3. Incentive approaches - sharing in the savings (may include performance-based, return on equity, or other mechanisms)

Background

Why is there a disincentive for utilities to invest in efficiency?

The effect of typical ratemaking practices is that each kWh a utility sells has a built in margin that recovers fixed costs and includes profits. Regulatory practices, especially fuel and purchased power clauses, deferred accounting, and balancing accounts, mean that the sale of a kWh for 5 cents contributes to profits, even if the cost of power (fuel or purchased power) is, say, 8 cents. Under typical regulatory practices, the high cost of making the sale is deferred and will be recovered from consumers later. So, rather than seeing a 3 cent loss on the sale (5 cent revenue minus 8 cent cost), the utility sees a profit and adds a deferred cost to be recovered from consumers later. The contribution to profits included in the 5 cent sale is retained by the utility.

In general, every kWh sold adds to profits (or reduces losses) no matter what the utility charges customers for the power or what the utility has to pay to get the power. Conversely, every kWh lost to energy efficiency reduces profits, regardless how cheap the energy efficiency.

---

1 See David Moskowitz' presentation, Clean Solutions: What's in it for Utilities, RAP 1-24-05, www.raponline.org

The high cost of adding new power plants or transmission fueled by the lack of investment in cost-effective energy efficiency has no effect on utility profits so long as future regulators allow the utility to recover those costs later.

Many pricing improvements, such as time-of-use pricing (TOU), may give consumers better price signals, but when viewed from the perspective of utility accountants, the opposite is true. High on-peak prices generally have a high margin and low off-peak prices have a very low margin. To a utility, this means on-peak prices are very profitable and off-peak prices are not. As customers shift use from on-peak to off-peak, utilities lose money. Any associated cost savings due to lower fuel and purchased power costs will benefit consumers later though lower deferred cost balances, but these savings have no effect on the utilities' profits.

What are states doing to address this?

Decoupling profit and sales volume is an option for overcoming utilities' built-in incentive to increase shareholder profits by selling a greater volume of electricity (a.k.a. "throughput incentive") and disincentive to implement energy efficiency and demand management programs that reduce sales. Typically, when profits are decoupled from sales, the utility is entitled to revenues needed to cover its fixed costs, including profits. If sales exceed projected levels, the revenue in excess of the allowed revenue is returned to customers by adjustments to the next year's rates. Similarly, if sales are below anticipated levels, the customers make up for lost revenues in the next year's rates. The cost of fuel and purchased power are generally treated separately and are passed on to customers though needed increases or decreases in prices.

Lost revenue recovery is another mechanism for avoiding utility profit losses whereby utilities can recover the net revenues (kWh rate less fuel and other variable costs) lost from energy efficiency programs (in addition to the cost of the programs themselves) through a periodic adjustment to rates. Lost revenue recovery is based on estimated or verified kWh savings resulting from the utility efficiency programs. States may also choose to tie revenue recovery to energy efficiency goals. In this case, the states can track lost sales attributable to energy efficiency and adjust rates to allow utilities to recover net lost revenue if certain energy efficiency goals are met or exceeded.[2]

Incentive approaches can stand alone or be combined with either decoupling or lost revenue recovery. Shared savings approaches allow utilities to retain some fraction of societal net benefit from energy efficiency programs. Regulators measure the savings and include the utilities' share in rates. Some states allow utilities to earn a higher return (5% higher in Nevada) on investments in energy efficiency than on other energy resources.

---

2 See David Moskovitz Cheryl Harrington, and Tom Austin, Decoupling vs. Lost Revenues: Regulatory Considerations, RAP, May 1992

Either the shared savings approach or the bonus rate of return approach can be used to encourage utility investment in energy efficiency.

B. State Experience

Decoupling:

- California has required utilities to promote cost effective energy efficiency options for more than a decade. California sets electric utility rates on the basis of required revenues and utilities periodically compensate or charge ratepayers for any losses or gains relative to the pre-set rates. [3]
- Oregon has allowed a utility to implement a similar decoupling policy for natural gas.[4]
- Washington State has an active docket for a rule that would decouple utility profits from sales volume.[5]
- Montana applied decoupling at the request of a utility in the mid-1990s but discontinued the practice after the first review to reconcile revenues.

Other mechanisms:

Several other states have incentives designed to compensate utilities for lost sales revenue due to energy efficiency improvements.

- Nevada allows utilities to earn a 5% higher return on utility investment in energy efficiency as opposed to other sources.[6]
- Minnesota's offers a shared savings approach.[7]
- Under certain circumstances, Colorado utilities may count documented and verified energy savings toward mandated levels of renewable electric generation. The utilities are allowed to earn a bonus, beyond their authorized rate of return, of up to 50% of the economic benefit the renewable energy provides to customers.[8]

---

3 California Public Utilities Code SEC. 9. Section 739 (3) and SEC. 10. Section 739.10 as amended by Assembly Bill X1 29 (Kehoe) [signed by Governor Davis on April 11, 2001].
4 Oregon PUC Order No. 02-634, Stipulation Adopting Northwest Natural Gas Company Application for Public Purpose Funding and Distribution Margin Normalization (Sept. 12, 2003).
[5] WUTC Docket No. UG-050369, http://www.wutc.wa.gov/rms2.nsf/0/53649F081B1F3CE788256FDD005F46EA/$file/CR101+Form.pdf
6 Nevada Docket No. 02-5030, http://www.puc.state.nv.us/R_and_I/Archives/2002/dkt_02-5030/02-5030O2.pdf
[7] Minn. Stat. 216B.16, subd. 6b and 6c. (Energy Conservation Improvement and Incentive Plan for Energy Conservation).

[8]See related bill (HB 1133), http://www.swenergy.org/legislative/colorado/HB%201133%20Bill%20Senate.pdf

- California, Texas, and Illinois have, or are developing, requirements for utilities to include energy efficiency as part of their resource portfolio, funded in some cases by a system benefits charge.[9]
- Pennsylvania is developing a trading system for renewable energy certificates that will include energy efficiency projects among eligible source categories.[10]

C. Environmental Outcomes

Energy efficiency can eliminate emissions associated with use of existing generating capacity and avoided new generation. In areas where peak levels of demand (mid-day on hot summer days with high air conditioning demand, for example) lead to increased use of certain kinds of high polluting generators (such as less efficient gas or oil peaking plants or customer-owned, small diesel generators), efficiency can be especially important for reducing emissions and protecting human health. A number of states have developed and/or implemented methods for estimating and modeling the air quality impacts of energy efficiency that can be used to measure the environmental benefits of implementing decoupling or other utility incentives.[11]

D. Discussion Questions

1. Has your state attempted to address potential changes in utility rates and profitability related to energy efficiency? Is any legislation or regulatory change anticipated?

2. What are the primary policy drivers for adopting decoupling or other incentives to encourage utility energy efficiency programs?

3. Did your state consider options other than the one you adopted? What were the deciding factors in favor of the approach you adopted?

4. What design factors do states need to consider when implementing decoupling?

---

[9] See the EERE Forum April 14, 2005 call on Energy Efficiency Resource Standards, http://keystone.org/Public_Policy/Energy_Program/State_EE_RE_Forum/EE_Resource_Standards/Summary_Apr_14_Call.doc

[10] See the EERE Forum April 14, 2005 call on Energy Efficiency Resource Standards, http://keystone.org/Public_Policy/Energy_Program/State_EE_RE_Forum/EE_Resource_Standards/Summary_Apr_14_Call.doc

[11] the EERE Forum December 16, 2004 call on Energy Efficiency Resource Standards, http://keystone.org/Public_Policy/Energy_Program/State_EE_RE_Forum/EE_M_V/ee_m_v.html

5. If your state adjusts rates to compensate for lost revenue, how do you distinguish between impacts from efficiency programs and the impacts of other factors such as local economic performance or the weather?

6. What additional resources are needed to implement these policies? What sort of implementation timeframe would be realistic?

7. How will the program be evaluated and what metric will measure success? What mechanism allows for mid-stream corrections to targets, procedures, and administrative functions if evaluations show a need for change?

8. What assistance or information do states need when considering decoupling or other incentive approaches?

9. Have you attempted to estimate the environmental benefits of the policy/program? If so, what method did you use?

E. Resources

The Regulatory Assistance Project (RAP) January 2005 Issuesletter describes the importance of viewing energy efficiency as a resource and aligning utility profit motives with investments in energy efficiency programs.
www.raponline.org

The Energy Policy Act of 1992, Subtitle B, Sections 111 and 115 direct states to encourage energy efficiency by gas and electric utilities.
http://thomas.loc.gov/cgi-bin/query/F?c102:1:./temp/~c102SE2AXq:e63009:

The DOE's Federal Energy Management Program (FEMP) website offers a color coded map with links to state by state information on available energy efficiency and demand response programs.
http://www.eere.energy.gov/femp/program/utility/utilityman_energymanage.cfm

"Decoupling vs. Lost Revenues: Regulatory Considerations," RAP, May 1992.
This paper compares decoupling with other lost revenue adjustment mechanisms. It is available on the Keystone website.
http://keystone.org/Public_Policy/Energy_Program/State_EE_RE_Forum/state_ee_re_forum.html

40-2-124. Renewable Energy Standard in Article 2 of title 40, Colorado Revised Statutes, includes language authorizing the use of energy efficiency to meet renewable energy requirements under certain circumstances and also allows utilities to receive a bonus for renewable energy.
http://www.dora.state.co.us/puc/rulemaking/Amendment37/Section40-2-124.doc