

## Should Utilities Be in the Energy Efficiency Business?

By Timothy Brennan\*

Energy efficiency policy is getting more attention because of the desire to reduce greenhouse gas emissions associated with energy use. For some time, its advocates have touted its virtues as a step toward reducing the amount of oil imported from unreliable or undesirable suppliers. For at least as long, numerous commentators have claimed that consumers routinely fail to invest in energy efficiency (compact fluorescent bulbs, high-efficiency heating and cooling) when the savings over time from reduced spending on energy, at any plausible discount rate, outweigh the up-front cost of the investment.

All of these justifications merit and have received close scrutiny, including the premise underlying all of them that greater energy efficiency significantly reduces energy use. If energy prices are sufficiently high, greater energy efficiency has such a large effect on making these appliances cheaper to use that it could lead to more energy use. This and other “energy efficiency policy puzzles” are the subject of a forthcoming *Energy Journal* article with that title.<sup>1</sup> Here, I want to highlight one such puzzle—the apparent desirability of handing electricity-related energy efficiency programs to distribution utilities.

Energy efficiency has already played a role in designing policy toward utilities. The widespread use of decoupling distribution revenues from use was put into place so utilities would not have an incentive to dissuade consumers from conserving electricity. My sense is that the rationale applies more to the political arena than the market, in that decoupling eliminates an incentive for utilities to oppose energy policies before legislatures and regulatory commissions.<sup>2</sup>

Even if decoupling makes sense as politics, it does not explain why utilities should be the energy efficiency providers. Many industry observers believe that utilities need to change their business model from providing electricity to providing energy services.<sup>3</sup> As an energy services provider, a utility would have the incentive to provide lighting, cooling, and heating at least cost, giving them an incentive to reduce energy costs in particular, i.e., adopt energy efficiency where it is cost-effective.<sup>4</sup> Those who regard energy efficiency as macroeconomically important as well as worthwhile on resource or environmental policy grounds regard this utility involvement as promoting economic growth and recovery overall, especially in recessionary times.<sup>5</sup>

However, these putative virtues of utility involvement in energy efficiency contradict long-standing policies to keep regulated monopolies out of competitive markets. The leading example of this was the Department of Justice’s prosecution of its antitrust case against AT&T, leading in 1984 to AT&T having to divest its then regulated local telephone monopolies, with restrictions on their ability to enter other markets that lasted until about 2000, in the wake of the Telecommunications Act of 1996. A less drastic separation—the “Independent System Operator” structured by the “Regional Transmission Organization”—has been a hallmark of national electricity policy since wholesale bulk power markets were opened to competition by Federal Energy Regulatory Commission Orders 888 and 889 in 1996, reinforced by Order 2000 in 1999.

### Why Separation?

Some may be suspicious of having utilities involved in energy efficiency deployment because doing so asks them to reject the policy-driven business model that has guided them for, in some cases, over a century—bringing power to the people, as some might say. Instead, they are being asked to provide “energy services,” not electricity itself, with the object of supplying less rather than more electricity to their customers. A more cynical way to say this would be that utilities providing energy efficiency is like the fox guarding the henhouse. Another reason might be that energy efficiency is a dynamic, entrepreneur-driven industry ill-suited to the guaranteed-return regulated culture of monopoly distribution companies.

There may be something to these observations, but evaluating them requires expertise in anthropology, not economics. From the economic standpoint, two rationales for separation have stood out.<sup>6</sup> The first has been discrimination. The justification for requiring the “independent” in “Independent System Operator” is to mitigate the incentive a regulated electricity transmission company would have to favor affiliated generators by providing lower quality or delayed access to competing merchant power providers. With regard to energy efficiency, an analogous concern would be that a distribution utility might provide data on usage patterns or technical aspects of grid connections less promptly or accurately to its energy services rivals than it provides itself. This creates a competitive advantage for the utility’s affiliated energy efficiency operations, allowing it to charge higher prices than its rivals and potentially displacing more efficient, innovative providers. The discrimina-

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tion potential is particularly for electricity distribution, when regulation holds rates far below what the market would bear and thus creates an incentive to try to get those rates up indirectly by creating artificial advantages in related competitive markets.

The second leading rationale has to do with exploiting regulatory price-setting mechanisms to misallocate costs of competitive enterprises to the regulated sector. One tactic is for a regulated firm to integrate into supply markets and then sell inputs to itself at inflated transfer prices. The classic electricity example, from the era of generation regulation, would be where a utility purchases coal from an affiliated mine at above-market prices, and regulators let electricity prices rise to reflect these artificially higher costs. On paper, the profits show up at the unregulated coal affiliate, although they depend on the regulated price of electricity having upward room to move.

Another cost-misallocation tactic, known as cross-subsidization, is to allocate costs of a competitive unregulated service to the regulated side of the business. An example applicable to the present setting would be if a utility in the competitive energy services or energy efficiency market was able to charge the costs of financing, installing, or maintaining high-efficiency appliances to the books of the regulated distribution sector. This would result in distribution rates going up, with the profits from the ratepayer-funded cross-subsidy showing up on the books of the energy services affiliate. In some cases, the ability to cover costs through cross-subsidy could provide a credible threat of a below-cost “predatory” price that would dissuade more innovative, lower cost energy service providers from entering the business.

However, the cross-subsidy problem of raising distribution and thus electricity rates could turn out to be a virtue, at least in part. To see this, we need to look at why utility involvement in energy efficiency remains popular despite these economic concerns as well as potential conflicts with established business models and cultures.

#### **Why Turn to Utilities?**

A variety of programs are available to promote energy efficiency. Some involve providing information, such as Energy Star labeling or websites informing consumers of the savings they might achieve from using more efficient appliances and equipment. Others programs entail equipment subsidies or free or reduced-cost energy audits. These programs all have something in common—they cost money. That does not make them undesirable; the environmental benefits from reduced energy use and the reduced need for added generation and transmission capacity to meet peak demands can outweigh these costs. But they do not make those costs go away.

The policy problem becomes how to cover those costs. Since many of these programs are local, the cost problem sits before local governments. Basic economics suggests that the best way to cover these costs is through general taxes, where the tax code is (ideally) designed to raise revenues to best reflect economic efficiency and society’s distributional goals. Implementing this principle, however, means that to undertake economic efficiency programs, a government has to raise taxes. This will be especially unpalatable for state legislatures, which generally lack the option to kick the tax can down the road by running deficits.

But legislatures have another option. If a legislature wants to support energy efficiency but not raise taxes to pay for its programs, they can require the state public service commission to have the utilities it regulates undertake them. Energy efficiency program costs do not disappear, of course, but now instead of raising taxes, they become part of the costs to be covered through regulated rates.<sup>7</sup> Consequently, energy efficiency programs may have fallen into the hands of utilities not because they are the most efficient or desirable entities to carry them out, but because giving it to them allows legislatures to enjoy the political benefits of enacting these programs without bearing the political costs of raising taxes to pay for them. Instead, the costs are covered by increases in electricity distribution charges set in less visible regulatory proceedings.

Although hiding the cost ball in this way may conflict with both efficient coverage of energy efficiency program costs and political transparency in ensuring that the public see the costs, it has a potential countervailing benefit. The justifications for energy efficiency policies rest on the premise that people use too much energy. Absent national carbon tax or cap-and-trade policies, electricity may be too cheap because it does not include costs associated with the prospect of climate change. Until real time pricing is effectively implemented, consumers may use too much electricity at peak periods because its price at those times does not reflect the cost of the added generation and transmission capacity required to meet demand. Finally, as noted above, people may consume too much energy because they fail to invest in more efficient appliances that would, over time, save them more than their up-front costs.

If the underlying premise is that people use too much energy, electricity in particular, the obvious policy response is to raise its price. The effect of having energy efficiency programs borne by distribu-

tion utilities is to do just that—raise electricity prices to cover the costs of those programs. The inflation of regulated prices that normally makes cross-subsidization a problem here becomes a positive. To some degree, the benefits of these programs may not be in their direct results, but that their implementation moves electricity prices closer to where they should be to get people to take its true costs into account.

### Having and Eating the Cake?

There may be a way to take advantage of the political forces driving leading governments to involve utilities in energy efficiency programs, yet reap the advantages of a competitive energy efficiency sector. This would be to limit the utility to being the fundraiser, but keep it out of active participation. For example, regulators could have utilities collect the money and deposit it into a fund. This fund could be used to support entrepreneurs who would submit bids based on how much of a subsidy they would need per megawatt of energy use reductions, and the funds could be awarded to the low bidders. This would be akin to “mobility fund” auctions recently launched by the Federal Communications Commission to foster rural broadband deployment.<sup>8</sup> The funds could also be used to support a less formalized grant program. A third alternative could be to award prizes to the first to meet a specified efficiency target or the one who can achieve the most by a particular deadline.<sup>9</sup>

For those who support policies to promote energy efficiency, these alternatives have the advantage of greater political feasibility relative to raising taxes to support efficiency programs, along with the indirect advantages from raising electricity prices to cover their costs. They also avoid the potential harms from having regulated distribution companies active in the highly entrepreneurial and potentially competitive markets for supplying energy efficiency and energy services. But in considering all of this, it’s important to keep in mind that the need for any of this would decline precipitously were electricity rates better tied to costs, through a combination of carbon taxes and real-time pricing.

### Footnotes

<sup>1</sup> Brennan, Timothy, “Energy Efficiency Policy Puzzles,” *Energy Journal* 34 (2013, forthcoming).

<sup>2</sup> Brennan, Timothy, “Decoupling in Electric Utilities,” *Journal of Regulatory Economics* 38 (2010): 49-69.

<sup>3</sup> A strong and clear statement of this position is Fox-Penner, Peter, *Smart Power* (Washington: Island Press, 2010). Full disclosure: I am a special adviser to the Brattle Group, where Peter is principal and chairman. Readers will soon see that this does not imply agreement with Peter’s bottom line, but it really is a good book.

<sup>4</sup> That consumers do not invest in energy efficiency already when it would pay to do so is known as the “energy efficiency gap.” Jaffe, Adam and Robert Stavins, “The Energy-Efficiency Gap: What Does it Mean?” *Energy Policy* 22 (1994): 804-810. Why consumers do not make such purchases is one of the policy puzzles discussed in Brennan, n. 1 *supra*, particularly regarding its implications for policy evaluation. If people make wrong choices, then the data from supply and demand curves used to perform cost-benefit analyses are invalid. What should take their place is far from clear.

<sup>5</sup> Howland, Jamie, Derek Murrow, Lisa Petraglia and Tyler Comings, “Energy Efficiency: Engine of Economic Growth: A Macroeconomic Modeling Assessment,” (Rockport, ME: Environment Northeast, 2009), available at [http://www.env-ne.org/public/resources/pdf/ENE\\_EnergyEfficiencyEngineofEconomicGrowth\\_FINAL.pdf](http://www.env-ne.org/public/resources/pdf/ENE_EnergyEfficiencyEngineofEconomicGrowth_FINAL.pdf); President’s Economic Recovery Advisory Board, “Memorandum for the President: Energy, the Environment and Technology,” (June 17, 2009) available at [http://www.whitehouse.gov/sites/default/files/microsites/090520\\_perab\\_climateMemo.pdf](http://www.whitehouse.gov/sites/default/files/microsites/090520_perab_climateMemo.pdf).

<sup>6</sup> These are described in greater detail in Brennan, Timothy, “Why Regulated Firms Should Be Kept Out Of Unregulated Markets: Understanding the Divestiture in *U.S. v. AT&T*,” *Antitrust Bulletin* 32 (1987): 741-93.

<sup>7</sup> In my experience, this should and does entail reviews of whether the benefits exceed the costs. The standard cost-benefit measures for such programs come from California Public Utility Commission, “California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects” (October 2001), available at [http://www.energy.ca.gov/greenbuilding/documents/background/07-J\\_CPUC\\_STANDARD\\_PRACTICE\\_MANUAL.PDF](http://www.energy.ca.gov/greenbuilding/documents/background/07-J_CPUC_STANDARD_PRACTICE_MANUAL.PDF). A critique of these methods, noting the extent to which they depend upon consumer failure to make privately beneficial energy efficiency investments, is in Brennan, Timothy, “Optimal Energy Efficiency Policies and Regulatory Demand-Side Management Tests: How Well Do They Match?” *Energy Policy* 38 (2010): 3874-85.

<sup>8</sup> Federal Communications Commission, “FCC Launches First-of-its-Kind ‘Mobility Fund’ Auction to Accelerate Delivery of 3G & 4G to Close Gaps in Mobile Coverage Across the U.S” (May 2, 2012), <http://www.fcc.gov/document/fcc-launches-first-of-its-kind-mobility-fund-auction>.

<sup>9</sup> Such prizes are increasingly common, particularly in the climate area. Adler, Jonathan “Eyes on a Climate Prize: Rewarding Energy Innovation to Achieve Climate Stabilization,” *Harvard Environmental Law Review* 35 (2011): 1–45. See also Kalil, Thomas, *Prizes for Technological Innovation* (Washington: Brookings Institution Press, 2006).