Energy Efficiency Investment: Turning Utilities from Reluctant to Eager

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ABSTRACT

Energy efficiency programs often presume their cost recovery mechanisms are sufficient to motivate investor-owned utility involvement. This stance is at odds with fundamental principles of utility finance, however, which seek investments that draw in new capital to reward existing investors. Power plants have long served this function for utilities, while almost no energy efficiency programs have attempted—or been allowed by regulators—to fill that role. The creation of such programs, however, could motivate utility investment, not simply to fund modestly scaled energy efficiency programs, but to aggressively invest in the kind of large-scale investments that could close the gap between energy efficiency achievement and energy efficiency potential. What makes this a smart path for utilities? The wisdom of an investment is measured by its economic value added (EVA), an equation that considers rate of return (as set by regulators), the cost of capital (largely defined by risk) and the investment scale. Utilities can bring their technical expertise and customer base to bear, greatly reducing risk; regulators can show preference to energy efficiency investments by modulating the allowed rate of return; and program advocates can rise to the occasion by creating ambitious energy-efficiency projects of unprecedented scale that warrant utility investment. This paper presents an alternative method to incent utilities to earn a return on demand-side resources, one that creates real economic value for utility investors in a way that current mechanisms may not.

Energy Efficiency as the Undiscovered Resource

Are we spending everything that we should on energy efficiency? Are we capturing all of the cost-effectiveness that we could? It's pretty clear that we're not. The question is, why?

Indicators suggest the potential for energy efficiency exceeds current success at achieving that potential. A 2008 ACEEE report estimates than roughly a third ($300 billion) of 2004 domestic energy expenditures (all sectors, including transportation) went to "energy efficiency technologies and infrastructure" across all sectors, though most of that money would have been spent simply to achieve baseline efficiency; only $43 billion went toward efficiency premiums, with almost three-quarters, or $31 billion, spent on buildings and industry. (Ehrhardt-Martinez 2008) Also in the building sector, a 2008 report from Lawrence Berkeley National Laboratory proposes that a capital investment of $440 billion over 20 years over business-as-usual conditions could reduce domestic building energy use, residential and commercial, by one-third by 2030. (Brown 2008) A McKinsey Global Institute report, also from 2008, states that an additional $170 billion a year ($38 billion domestically) in energy efficiency investments, directed primarily at buildings and industry, could cut energy demand growth in half by 2020, with an overall internal rate of return of 17 percent (and including no investments whose return is less then 10 percent). (Farrell 2008)

Because of the differing scopes of these reports, it is difficult to convey their findings in a way that does not simply look like a number salad, but the bottom line is that experts—both from the world of energy efficiency and from the world of business consulting—have identified unclaimed, cost-effective investments in the tens of billions, every year. Existing programs can be, and are, part of that structure, but by and large the only return seen by those programs is on the customer side, when they make an energy-saving investment. Programs and their funders are cut off from the upside these opportunities present.

But what if utilities were given a compelling reason to adopt a different approach? Most policymakers' attempts to sway utility decision-making do not gain traction because they fail to comprehend the fundamental nature of the investor-owned utility. This leads to poorly designed incentive mechanisms, which doesn't help the situation. As this paper will demonstrate, if utilities can earn returns in excess of their costs of capital, attracting *new* capital is the primary way that utilities make their *present* investors wealthier—which is, of course, their reason for being. If we craft programs that live in ignorance of this reality—if we doggedly believe that utilities should be happy to simply be a pass-through where dollars are exchanged for kilowatt-hours, plus a little cost recovery should customers use less electricity, or if we believe that letting utilities simply earn the cost of capital on demand-side investments will suffice—then we will never see utilities pursue efficiency with the fervor of pursuing their next plant. They may be willing, or even pleased, to participate in programs, but they will not be institutionally eager.

What would make them eager? Few things more than those multi-billion-dollar investments. What entities could capitalize such investments in their region better than utilities? Utilities want healthy rates of returns on sizeable, low-risk investments, a hunger that has historically been satisfied by building power plants—but in many regions across the country, they find themselves increasingly stymied by regulators, with a host of interveners objecting to new fossil, nuclear, and, increasingly, renewable construction.

This paper proposes to convince both utilities and regulators that a new kind of energy efficiency program, aggressively conceived and ambitiously scaled, could step in to fill the power plant's historical role as the project that attracts investors and boosts utility stock prices in the process.

A Brief History

There was a time in the history of electricity in the United States—up until 1900—when most of the electricity generated was "distributed generation." Of course we didn't know to call it that then. Most electricity was generated on-site at industrial facilities and used for such manufacturing end uses as motors. Shortly after the turn of century, electricity became mainstream and adopted for distribution in large metropolitan areas; eventually, it was available throughout the United States. Soon after this trend started, inequities surfaced in the price customers were charged for electricity. Some of these were perceived and some were real. In any event, regulation of utilities was introduced and the utility-customer compact was developed. This compact defines the system under which we operate today with some variations.

The compact provides that any customer that wants electricity can have it at a price that is based on the "cost of service" to all the customers within a rate group. In return for this service and a reasonable confidence of availability, the utility is provided a reasonable opportunity to earn equitable rate of return on the assets it has invested on behalf of its shareholders.

This is the framework under which we have operated for the last 100 years or so. It has worked well for all players as long as demand for electricity was increasing and economies of scale worked to the benefit of everyone—incremental cost of new supply was less costly than the older, inefficient plants contained in the rate base.

Enter the 1973 energy crisis. Now energy efficiency became a banner for change and the panacea for solving all of our problems—national security, increasing energy bills, environmental mitigation, climate change, and the hole in the ozone layer. Energy efficiency has come a long way since the energy crisis and has achieved a lot, but by and large, it has not solved, or even made a dent, in those major issues. And how could it? Current electric energy efficiency programs lack scope and do not effectively address some of the key barriers to wide-scale implementation.

And now times have changed even more. We find ourselves in an environment where increased capacity is more expensive than existing capacity; customers are having difficulty paying for their basic needs, putting stress on regulators evaluating requests from utilities to increase rates; and the nation is a net importer of energy, causing potential security dilemmas. Therefore, it is time to change the utility-customer compact and break the current paradigm.

The Changing Landscape

The bitter stew for most electric utilities portends a difficult future. Regulators are constantly under pressure to deny or reduce utility rate increase requests. This pressure is due to several issues facing utilities and is substantially aggravated by the current economy and the customer’s inability to absorb increased rates, as illustrated in a January story by the Columbus (Ohio) Dispatch:

> With immediate [electric rate] increases of up to 40 percent, business owners said they are faced with cutting workers, reducing investment and making other changes as they struggle to deal with an increased expense that many of them did not see coming. (Gearino 2012)

Indeed, a Public Utilities Fortnightly survey of rate cases in 2011 revealed that of 116 rate cases, 43 percent saw their rate of return on common equity *decrease* from the previously authorized rate. Another 15.5 percent saw no change while only 10 percent saw an increase. Data wasn’t available for the remaining rate cases for comparison. (Cross 2011) We see that, far from earning the authorized rate of return, many utilities are settling for reduced earnings driven by reduced sales (revenue).

There are also substantial environmental issues facing utilities that have the potential to drive rates higher, such as those noted in this story from November 2011:

> Proposed federal environmental regulations could shut about 13,000 megawatts of coal fired generation, boost power prices, threaten electric reliability and cost billions to retrofit or replace most of the region's existing coal fleet, according to U.S. power grid operator Midwest Independent System Operator (MISO). (DiSavino 2011)

At the Energy Solutions Center’s February Technology & Market Assessment Forum in Houston, a regulatory staffer commented that if these proposed EPA rules were enacted, it could mean a 30 to 40 percent increase in electric rates in his jurisdiction. In such an environment, far from earning the authorized rate of return, many utilities are settlings for reduced earnings driven by reduced sales and therefore revenue. The bottom line result for electric utilities is a potential reduction in earnings potential and concerns about access to capital for large-scale supply-side projects. This has resulted in lower bond ratings for many utilities. For the first time in US history, the typical utility sports a BBB bond rating:

> In 1970, electric, gas, and electric and gas utilities were among the most financially strong domestic industries. Ninety percent of U.S. utilities had credit ratings of A or higher, and none were rated below BBB. In stark contrast, by 2011 only 27 percent of electric, gas, and combination utilities were rated A- or higher and 6 percent were rated BB+ or lower. The remaining 67 percent were rated between BBB+ and BBB-. (Overcast 2011)

This leads one to ask whether a well-designed demand-side investment program might be attractive to utilities and their investors.

Energy Efficiency Programs

Most customers in the United States are provided electricity by an investor-owned utility (IOU). In other words, the utility is a business that earns a profit for providing services to its customers. The executives of these companies have a fiduciary responsibility to earn a profitable return on shareholder investments. As we discussed previously, regulated utilities function under the customer-utility compact initially established 100 years ago that allows them to earn on assets—the *rate base*. Therefore, there appears to be an inherent disincentive for IOUs to provide energy efficiency programs:

These impediments to improving efficiency in the IOU sector are framed as two separate problems:

1) There is a disincentive to using energy efficiency programs to reduce customer energy consumption because utility revenues will also be reduced.
2) There is a lack of incentive to spend money on programs to improve energy efficiency as compared to making investments in new utility facilities and equipment. (Hayes 2011)

The second disincentive depends on the ability of the utility to earn not just any rate of return, but a return in excess of its cost of capital, as noted at the outset. We will discuss this issue in detail in a moment. Suffice it to say that many utilities do earn such returns, and therefore this disincentive does exist for many, though not all, investor-owned utilities. (Kihm 2011)

Over the years, a few methods have surfaced to overcome these utility barriers to energy efficiency program implementation. These “shareholder incentive mechanisms” used by states have been divided into three general categories as follows (ibid):

- Shared Benefits—incentive is based on a share of the benefits from approved efficiency programs (12 states)
- Performance Targets—incentive is based on achievement of fixed energy savings targets or performance goals (5 states)
- Rate of return—an increased rate of return is earned according to program spending or savings (2 states)

Most of these provide revenue or earnings potential based on accomplishing some energy savings goal either tied to energy savings directly or to spending on energy efficiency. As we will see, none of these mechanisms has been very successful in that they lack a sufficient incentive for the utility to invest in energy efficiency.

Wisconsin Power & Light Company has a unique program approved by regulators in Wisconsin. This is a shared savings program where the utility identifies energy-saving projects at commercial and industrial customer facilities, quantifies the energy and dollar savings, provides the capital for implementation, and guarantees a positive cash flow. The regulators in Wisconsin provide the utility the authorized rate of return for the capital the utility invests in customer facilities. Since its inception in 1990, the program's energy savings have been between 1.5 percent and 2.7 percent of annual sales.

This is a significant program success. Before we can explore the reasons for this program's success, we must consider a utility's financial environment. Effective incentive mechanisms can be created only if one understands this somewhat-complex financial landscape.

Creating Real Incentives for Energy Efficiency Investment

There is a major drawback associated with many demand-side incentive proposals, due to incomplete understanding on the part of many efficiency advocates as to what creates financial value: Many mechanisms actually fail to provide any impetus for utility management to take action. Let us motivate this discussion with an analogy.

Say that a firm wants to encourage its employees to travel to more conferences and professional meetings to develop relationships with potential clients. The firm's employees generally don't like to travel. The company's current policy allows employees to take two business trips per year. The company covers out-of-pocket travel expenses.

To remedy this situation the company develops a new policy under which the firm will cover out-of-pocket expenses for up to ten business trips per year. Has the company provided an economic incentive for the employees to take more business trips?

No. Covering the cost of the business trip leaves the employee with exactly the same amount of money after the fact whether the employee takes ten trips or zero trips. If the firm wants to create an incentive for the employees to take more trips, it must provide the employee with compensation in excess of the out-of-pocket costs incurred. For example, it could pay its employees a travel bonus of $1,000 for each trip, in addition to covering travel-related costs.

Many energy efficiency advocates may not be aware that this same more-than-cost principle applies not only to expenses but to the cost of capital, as well. We often hear statements such as, "If the utility can earn a return on energy efficiency investments, it will have an incentive to make such investments" and "If the utility can earn the same rate of return on demand-side investments as it can on supply-side investments, it will have the same incentive to invest in either asset." As general propositions both of those statements are false. They ignore the facts that: (1) the rate of return must exceed the cost of capital if there is to be a real incentive for the utility to invest in any asset, (2) scale differences between the asset types can tip the balance in favor of one asset or the other, and (3) risk differences between asset types can lead to differences in the costs of capital associated with financing those projects.

In exploring this concept, let's start with the rate of return and cost of capital relationship. Fundamental finance principles provide a description of an economically sterile world in which the regulator sets the rate of return at the cost of capital:

> The most serious item is that there is very little incentive for the utility to be efficient in choice of factor proportions, capacity, price and output, or technology. If the utility can expect to earn no more and no less than its cost of capital, then it has no incentive to seek efficiency along any of these dimensions. (Myers 1972)

Just as paying an employee for the costs of travel expenses does not incent the employee to travel more, allowing the utility to earn a rate of return on investments that is equal to its cost of capital provides no incentive to invest in any assets, be they supply-side or demand-side investments.

The concept of economic value added (EVA), which we will explain in detail in a moment, can illustrate this concept and ultimately guide us toward proper incentive design. The EVA equation identifies the dollar return on an investment that accrues to the present investors (who provide no new capital) by netting out from the overall dollar return that which accrues to the new investors (who provide all the incremental capital). This net dollar value is a windfall gain to the present investors, who capture it in its entirety before the project is built. They capture this return in an *ex ante* sense via a higher stock price:

> Note that an opportunity to invest in a project offering more than the cost of capital generates an immediate capital gain for investors. This is a windfall gain, since it is realized ex ante. (Myers 1972)

New investors cannot act fast enough to claim any of the EVA. In fact, by bidding up the stock price in a rush to capture some of the return in excess of the cost of capital, the new investors end up instead driving their market return down to the cost of capital while the present investors capture the resulting windfall gain in the form of a higher stock price. While this process is far from obvious, understanding it is critically important if one is to design effective incentive mechanisms.

Why, though, should managers worry about the present investors if those investors are not providing new capital? The answer is simple and absolute—the present investors are the *only* investors managers care about because those are the investors the managers work for:

> The objective of a utility management in its investment and other decisions is to serve the company's owners—its present stockholders. (Higgins 1988)

To create incentives for utility managers to act, and if the managers work for the present investors, not the new capital providers, we must create the possibilities for such windfall gains to the present investors. That is what EVA is all about.

In simplest terms, the basic notion of the EVA concept can be expressed as follows:

EVA = (rate of return – cost of capital) x investment scale

Let us use some examples to demonstrate how the three key variables in the EVA equation—rate of return, cost of capital and investment scale—interact to create value.

Say that a utility earns a rate of return of 10 percent on its capital investments. The market prices its securities so as to produce a cost of capital of 10 percent, as well. (This discussion reinforces the fact that the *regulator* sets the rate of return, but the *market* sets the cost of capital.) To meet growing demand, the utility's resource plan suggests that it can spend either $1,000,000,000 on supply-side assets, or $500,000,000 on demand-side assets. The regulator allows the utility to earn returns on either investment choice. If management is looking out for its investors, which asset should it choose?

Under these conditions, it doesn't matter because neither choice creates EVA. The fact that a utility can earn a return on investments is not sufficient to conclude that it has an incentive to make such investments. Even though both investments earn a 10 percent return, all of that return goes to the new investors who provide the capital for the projects, leaving no EVA (i.e., no windfalls) for the present investors:

Supply Side: EVA = (10% – 10%) x $1,000,000,000 = $0
Demand Side: EVA = (10% – 10%) x $500,000,000 = $0

As such, these investment opportunities should create little interest on the part of utility management. Under these conditions, putting the supply-side asset into the rate base where it earns a return creates no more investor value than does expensing the demand-side expenditures, which produces no return. Putting demand-side investments in the rate base under these assumptions also fails to create EVA. Again, it's not about earning a return—it's about earning a return *in excess of the cost of capital* that matters.

Let's change the example by increasing the rate of return on both investments to 12 percent, while leaving the market-based cost of capital at 10 percent. How does this change the utility management's decision?

This introduces the influence of investment scale, and this is a key place where energy efficiency advocates often get financial analysis wrong. Those advocates suggest that since the utility earns the same return on either investment, management should be indifferent to the asset choice. The EVA equation shows us that under these conditions that conclusion is incorrect:

Supply Side: EVA = (12%– 10%) x $1,000,000,000 = $20,000,000
Demand Side: EVA = (12% – 10%) x $500,000,000 = $10,000,000

New investors price securities in the market so that they earn the cost of capital on their investment capital. So while the new investors will get a 10 percent return no matter which asset the utility chooses, the present investors—the ones that the managers work for—would have a strong preference for the $20,000,000 windfall that flows from the supply-side asset rather than the $10,000,000 windfall that flows from the demand-side investment.

We must remember that corporate finance is about generating dollar returns, not percentage rates of return. To determine dollar returns we must acknowledge investment scale differences, which is a factor that rates of return ignore:

> The problem with the PI [profitability index] and the IRR [internal rate of return] is basically that they are insensitive to the scale of investment. (Myers 1972)

Let us now introduce another concept to illustrate the richness of the EVA model. Say that the supply-side investment in question is a nuclear plant. Building such plants is risky. The fact that utilities today attempting to build such plants have requested federal loan guarantees and state-sponsored regulatory investment guarantees speaks loudly to that point.

If there are no special risk-reducing governmental actions, the risk of investing in the nuclear plant is likely to be noticeably higher than the risk of investing in proven demand-side technologies, such as lighting retrofits and efficient motors. But where does risk enter the EVA equation?

It enters via the cost of capital. The financial markets set that cost rate and the key driver of the cost of capital is risk. Under these conditions, new investors will demand higher rates of return on the utility's securities (i.e., through lower stock prices) if it builds the high-risk nuclear plant than they will if it invests in low-risk demand-side projects. Under this scenario we will assume that the utility is allowed to earn 12 percent on all investments, but the market-based cost of capital for the nuclear plant is 11 percent, while the market-based cost of capital for the demand-side investments is only 9 percent. The EVA calculations proceed as follows:

Supply Side: EVA = (12%– 11%) x $1,000,000,000 = $10,000,000
Demand Side: EVA = (12% – 9%) x $500,000,000 = $15,000,000

Now the demand-side investments produce the higher EVA (bigger windfall). Under these conditions, utility managers who are looking out for their investors have a strong incentive to invest in demand-side assets rather than the nuclear plant.

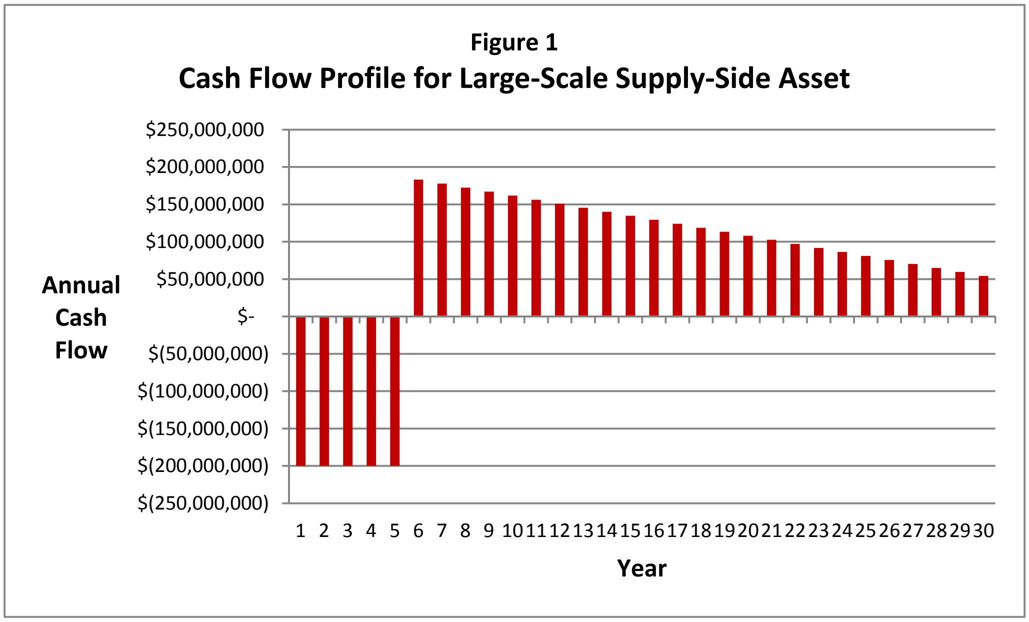
Note also that utility managers trying to generate dollar returns to present investors should not always invest in the largest-scale assets. It is the interaction between rate of return, the cost of capital and investment scale that determine the EVA, not the investment scale alone. We can conclude that if the utility is allowed to earn the same rate of return on supply- and demand-side investments, and if the risk (cost of capital) is the same for either asset type, then if supply-side assets generally have a larger investment scale than a portfolio of demand-side assets that meets the same level of energy requirements, the utility will have an incentive to invest on the supply-side rather than on the demand-side. Note, however, that we had to introduce several qualifiers before we could reach that conclusion.

The key to creating real incentives for utilities to invest in demand-side resources flows from the EVA equation. To be more specific, to achieve a financial incentive for the investor-owned utility, the regulator could: (1) increase the rate of return for demand-side resources vis-à-vis that afforded to supply-side resources; (2) institute policies that make recovery of demand-side capital investments less risky to market capital providers than that associated with supply-side investments; and (3) allow the utility to scale up its demand-side investments to levels that allow it to produce EVA that is greater than that of the supply-side assets. Note that the scale does not have to be the same if the demand-side resources are allowed higher rates of return or have lower costs of capital compared to the supply-side assets.

Investment and Utility Cash Flow

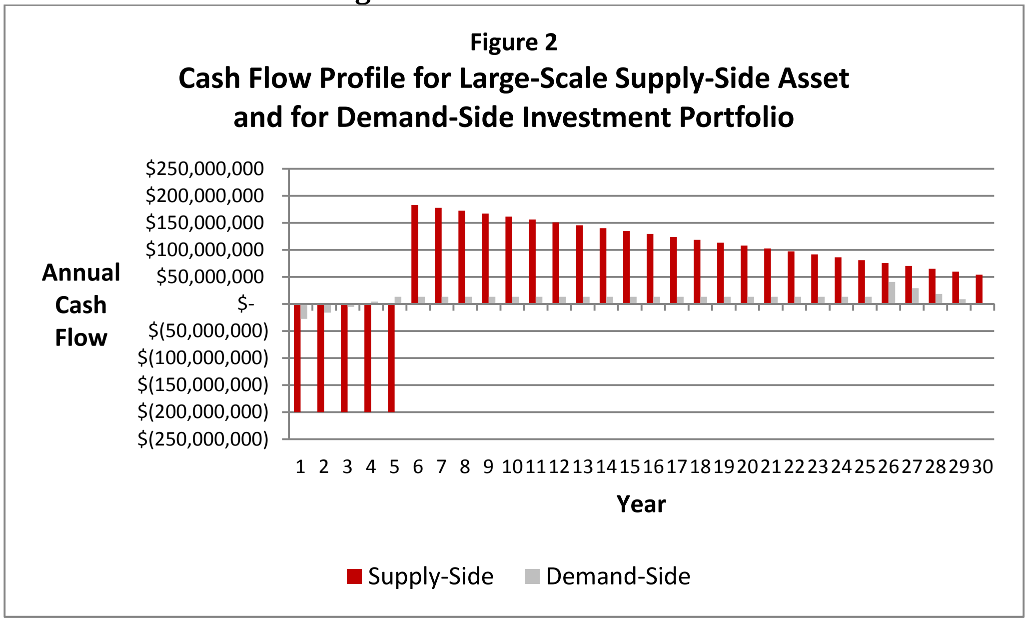
Moving beyond the equations to the cash flow profiles of supply-side versus demand-side investments, we begin to see why investing in demand-side resources might be attractive to utility managers. To set the stage, let's examine the cash flows, in and out, of a typical large-scale supply-side asset. See Figure 1.

Figure 1. Cash Flow Profile



The cash flows for a demand-side investment look noticeably different. Instead of spending $1 billion in the first five years to construct the asset as is the case for the supply-side project, we assume that given the incremental nature of demand-side resources the utility can spread that spending over 25 years. So we assume annual cash outflows of $40 million per year for each of the next 25 years. We assume that the investment immediately goes into rate base once spent. We also assume that the demand-side assets have a five-year life, in contrast to the assumed 25-year life for the supply-side asset. (The uptick in cash flows toward the end of the life reflects the winding down of the demand-side program, in which the utility receives the cash flows from prior investments, but makes no new demand-side investments.) Notice how different the cash flow profile is for this resource vis-à-vis that of the supply-side resource. See Figure 2.

Figure 2. Cash Flow Profile



It is interesting to note that even though the cash flow profiles are wildly different, the present value of the EVA for the demand-side resources is about $45 million, or only slightly less than the $48 million EVA for the supply-side resource. The reason for this difference is that while cash inflows are small under a smoothed demand-side investment schedule, so are cash outflows. Under the supply-side option, the utility must invest $1 billion in the first five years. It takes a lot of cash inflow to offset that cash outflow. The demand-side approach has small outflows and inflows. In the end, the present value of the net EVA is about the same for the supply- and demand-side approaches.

Note, however, that the smoother, less volatile cash flow profile for the demand-side resource may convey a lower risk profile to investors. If that is the case, the market-based cost of capital for the demand-side investments might decline to 9 percent, for example. If that occurs, and if the utility still earns 11 percent on those investments, the present value of the EVA for the demand-side project increases to $56 million, which exceeds that of the supply-side investment.

So when would demand-side investment be attractive to investor-owned utilities? Whenever investing in demand-side resources produces more EVA than investing in supply-side resources for a given amount of load. To determine when that occurs, one must consider the rate of return, the cost of capital and the investment scale for each resource.

A New DSM Paradigm

Viewed in that light, the kinds of programs that regulators tend to allow utilities to implement present very meager incentives to those utilities. That said, some regulators have worked with utilities to create programs that point the way toward satisfying those institutional needs and compel utility commitment not out of mandates but out of economics. Let's go back to the reasons Wisconsin Power and Light's shared savings program of directly identifying and funding customer projects was successful.

- They know who the customers are, and have access to their energy histories.
- Due to their business as the utility, they have access to customer personnel that no other entity has.
- The program expenses were covered.
- The utility earned its authorized rate of return and the earnings impact was directly related to participation in the program—as more savings were realized, earnings from DSM increased and as participation decreased, earnings from DSM decreased.

The first three points bear on the risk of the investment. The utility knew what it was doing, so the risk of making poor investments was reduced relative to that incurred by a third-party DSM provider. As to the last point, the Wisconsin Commission regularly sets the rate of return in excess of the cost of capital:

> The cost of equity, which is the minimum acceptable return, is a starting point. It would drive utility market values to book value, which eliminates the economic incentive for utilities to expand their systems. Under normal economic conditions, the fair return on equity lies above that minimum rate. (WPSC 2007)

Some object to the notion that a regulator set rates of return above the cost of capital. But if the regulator wants to create incentives, that is precisely what must happen. If the regulator doesn't do that, the utility might as well close its doors as nothing it can do creates economic value:

> Suppose instead that the regulator sets the fair rate of return equal to the cost of capital. In this case, the regulated firm becomes indifferent between many possible outcomes, and its choice is indeterminate. In particular, the firm would earn the same [economic] profit whether it increased or decreased output, used an efficient or inefficient input mix, and wasted inputs or not. In fact, the firm would make the same profit if it closed down and sold off its capital. (Train 1991)

If we want to create incentives for the utility to act we have to make it attractive for the utility to take that action. Allowing it to earn a return that only equals the cost of capital is not the answer.

Now, if we couple this success with our understanding of how EVA motivates all investor-owned utilities, we start to frame the elements of a DSM model that can deliver energy in the form of negawatt hours, or distributed energy in the magnitude capable of solving our electric energy issues. The elements of this model include:

- Covering DSM program expenses as cost recovery through rates similar to current recovery mechanisms
- Allowing the utility to invest in customer DSM projects and earn better than the utility authorized cost of capital

- Regulating the process to insure there is no gaming of the system or equity issues, and to reduce risk (which lowers the cost of capital)
- Allowing the utility to bring this model to full scale, so it can create substantial EVA for its present investors

This type of DSM model has the potential to deliver significant energy savings, avoid new power plants, and increase investor wealth. Here are some of the benefits.

Utility has an incentive: The utility has a clear incentive to pursue energy efficiency. This incentive is consistent with how a business operates and shifts the shareowner benefit from new power plants to energy efficiency. Utilities will put the processes in place and dedicate the resources to accomplish increased wealth for shareowners.

Bill impact: The investment is going to occur whether DSM fulfills added demand or if that demand is satisfied with new power plants. In fact, as we have seen, our DSM model gives you the same energy savings for less cost.

Environmental gains: Clearly, producing less energy is more environmentally beneficial than even the most efficient power plants.

Ability to have a mega-impact: There is no other entity in the market that can combine the elements necessary to satisfy future demand that the utility. The utility has the customer; it has access to capital in large amounts; it accepts longer returns on investment; and it can mobilize resources to deliver energy (or energy efficiency).

A parting thought: This concept is ideal for combined heat and power (CHP) projects. All of these elements and benefits apply, plus two compelling bonuses. First, by allowing the utility to participate in CHP projects as DSM investments, we avoid the adversarial relationships that arise due to interconnection and have long impeded CHP activities. Second, who better to understand power generation than a utility?

Summary

In this paper, we have proposed an alternative model for utility-delivered DSM. This model overcomes many of the barriers handicapping widespread DSM program success. It can deliver the magnitude of electrical energy necessary to meet future demand with little or no impact on bills while improving the environment. A key point often lost on energy efficiency advocates who explore ideas in this intellectual space is that to implement real incentives for utilities to invest in demand-side resources, one must create EVA for present investors in the process. If you're not considering EVA potential, you're going to have a difficult time designing effective incentive programs.

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Wisconsin Public Service Commission. 2007. *Final Decision*, Docket 3270-UR-115. This quote implies that the PSC might set the rate of return below the cost of capital during abnormal economic times, as was the case in the late 1970s and early 1980s.