The Energy Efficiency Identity Crisis: Finding the Balance Between Resource Acquisition and Customer Service

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ABSTRACT

In the Pacific Northwest, energy efficiency (EE) is recognized as the lowest-cost and first choice resource for meeting utility power needs. EE is also one of the primary customer service tools available to utilities. Offering a wide selection of EE programs allows ratepayers to save energy and leads to positive interactions between utilities and customers. Unfortunately the need to strategically acquire a resource can sometimes be in conflict with a utility's customer service goals.

Providing great customer service often means offering a stable, robust suite of EE programs. However, as load growth ebbs and flows, market prices or capacity needs change and the cost effectiveness of specific measures decreases, the need or ability to develop EE as a utility resource can diminish. In the Northwest this conflict is a growing reality. Increasing winter capacity deficits are driving utilities towards time specific EE savings. As natural gas and market prices remain low, some EE measures with higher acquisition costs are no longer cost-effective.

This leaves the utility in a difficult position – to continue offering robust and varied EE programs because it best serves the customer? Modify its portfolio, possibly eliminating an array of measures, to provide the highest-value resource for the utility? Or is there a balance that results in high customer service while acquiring a resource that sufficiently meets utility needs? This paper will explore the tradeoffs and conflicts that can arise in an EE portfolio when the resource needs of the utility no longer align with customer expectations.

Introduction

The acquisition of energy efficiency savings for the Bonneville Power Administration (BPA) relies on a non-traditional approach. As a wholesale marketer of power to over 140 public utilities across the Northwest, BPA acquires energy efficiency through the public power utilities it serves rather than through direct contact with end use customers. Retail utilities leverage the support and program offerings as needed from BPA, who engage with end users to install energy efficient measures. These savings are then reported to BPA, which BPA then reports to the Northwest Power and Conservation Council (Council) towards the region's energy savings goals.

The public power customers of BPA are diverse; they vary widely in size, service territory characteristics, energy savings potential and resource need. In order to effectively acquire energy efficiency and meet the program needs of all customers, BPA's energy efficiency offerings are equally diverse; ranging across all sectors, end uses, measure lives, costs and capacity values. BPA offers over 2000 'deemed measures' to utilities across the residential, commercial, industrial and agricultural sectors. In addition BPA supports a custom program,

allowing utilities to leverage expert BPA engineers to estimate and install energy savings in commercial and industrial facilities that are outside the scope of deemed measures. This diversity has allowed for an enormous legacy of energy efficiency success in the Northwest (BPA, 2014).

BPA's Total Conservation Savings (FY 1982-2013 Incremental aMW

	Total FY 82-00	**Total FY 01-06**	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**	**FY 2013**	**Total FY 82-13**
Residential	179.6	69.2	11.9	20.8	18.9	30.6	40.9	21.7	21.2	**414.8**
Commercial	111.5	67.3	9.3	13.3	19.4	26.6	30.2	15.5	25.0	**318.0**
Industrial	84.9	26.6	6.7	7.0	7.4	11.8	31.1	16.6	19.5	**211.6**
Agricultural	14.8	1.8	3.0	2.0	2.1	6.9	8.7	5.5	6.7	**51.5**
Multi-Sector	104.2	3.2	0.1	0.4	0.4	0.2	0.2	0.0	0.0	**108.9**
Sectors Subtotal	495.0	168.1	31.0	43.5	48.1	76.1	111.1	59.2	72.5	**1,104.7**
Residential Building Codes	111.6	17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**128.6**
Commercial Building Codes	43.4	16.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**59.9**
Building Codes Subtotal	155.0	33.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**188.5**
Market Transformation Subtotal	9.0	91.8	23.0	22.6	13.0	12.1	11.7	11.6	11.5	**206.5**
TOTAL SAVINGS	**659.0**	**293.4**	**54.1**	**66.2**	**61.1**	**88.2**	**122.8***	**70.9**	**84.0**	**1,499.7**

Fiscal 2010 savings was significantly higher than the following year due to an increase in BPA funding for conservation during that year.

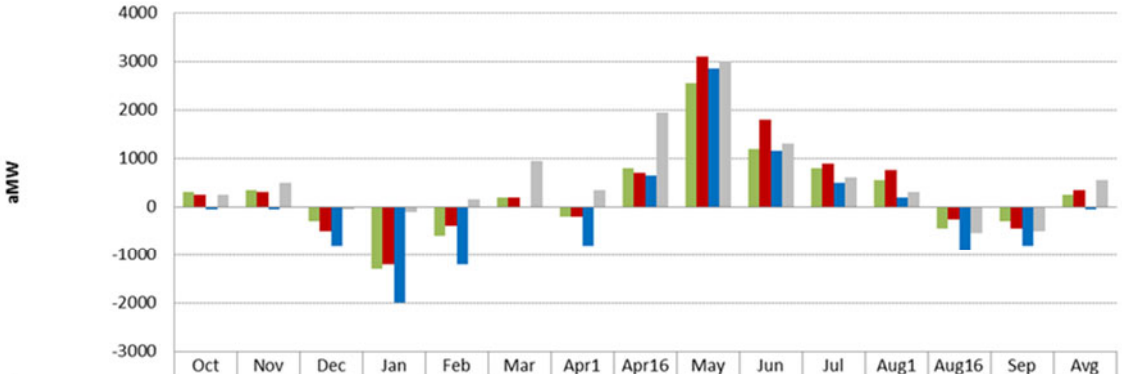
BPA Resource Needs and the Energy Efficiency Portfolio

In order to meet the target set by the Council BPA creates a portfolio of program offerings. This portfolio is not currently based on the resource needs of BPA. The criteria for including a measure offering to utilities have historically been 1) reliability of savings, 2) cost effectiveness and 3) customer interest. Since one of the directives of the BPA energy efficiency program is to serve the needs of small and rural utilities, BPA has historically placed the needs and interest of these utilities first, allowing these utilities to report savings that may meet their own resource or customer needs before the needs of BPA which may be different from those of it customers. When looking at the offering design approach for BPA over the past 15 years, it could be easily argued that BPA has favored an efficiency portfolio that meets the customer service needs of public power customers, not the resource needs of the agency.

For example, BPA generates the majority of its power from the Federal Columbia River Power System, which supplies ample energy in the spring and early summer months as the Columbia River fills from the snow runoff in the mountains. When looking at BPA's resource needs as identified in the BPA Resource Program the table below shows where BPA is expected to have surplus and deficit energy in years 2021 and 2024 across a variety of scenarios (BPA, 2013) A bar above zero shows a surplus while a bar below zero presents an energy need. Based on these results, BPA projects surplus energy for a majority of the spring and summer months. BPA's needs for resources show up in the winter months and end of summer, when run off from the mountains slows down and the river has less water.

Federal System Monthly 10th Percentile High Load Hour Energy Surplus/Deficits

FY 2021 and 2024



	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Expected 2021	300	350	-300	-1300	-600	200	-200	800	2550	1200	800	550	-450	-300	250
Expected 2024	250	300	-500	-1200	-400	200	-200	700	3100	1800	900	750	-250	-450	350
Product Switching	-50	-50	-800	-2000	-1200	0	-800	650	2850	1150	500	200	-900	-800	-50
Climate Change	250	500	-50	-100	150	950	350	1950	3000	1300	600	300	-550	-500	550

An energy efficiency portfolio based on the resource needs of the agency would likely result in an offering that focused on measures providing savings in the winter months (HVAC, weatherization, lighting) and late summer. Measures currently offered in the BPA portfolio that do not contribute to energy savings during these months include most irrigation measures which would result in a major reduction of the agricultural offering; a sector that provides significant value to some of BPA's most rural and small utilities in the region as these programs allow rural utilities to support their largely agricultural customer base.

Other measures likely to be removed from the portfolio include those with a short measure life (less than 5 years) as the resource planners at BPA do not see a significant resource deficit in the immediate future. This approach would eliminate many popular and emerging measures such as residential behavior savings programs and commercial/industrial energy management programs because the long-term reliability of these savings is currently uncertain.

Changing Times

The resource needs described above are a result of many factors that are currently impacting the Northwest. Utility industry changes such as slowing load growth and historically low natural gas prices that have occurred over the past few years are leading BPA to reassess the value that energy efficiency provides to the system. With continued change expected on the horizon, BPA and the energy efficiency program cannot ignore the impact the following changes have on the current need for EE.

Low Load Growth

Thanks in part to aggressive energy efficiency programs and lingering gradual recovery from the economic downturn, loads in the northwest are nearly stagnant, expected only to grow by .8% in the next 20 years according to the Council's Seventh Power Plan (Council, 2016, 1-4). This trend is exacerbated in rural areas where shrinking populations and continued economic

distress put even greater downward pressure on power usage. Many small public power utilities across the region are facing declining loads and a resultant decline in their revenue.

A long-term forecast of continued low load growth has some utility board members and resource planners in the region questioning the need for energy efficiency in the near future. If the resource isn't needed to serve load, and continuing to acquire it further reduces an already strained revenue picture, the case for efficiency is difficult to make without the restructuring of rates to decouple energy efficiency and electricity consumption from revenue. For utility board members, who face reelection on a regular basis and are often judged by short term actions rather than long term prudency, the pressure to keep rates low in the immediate future weighs heavily against the long term uncertainty that EE will provide value if load growth were to suddenly increase.

Market Prices and Avoided Costs

With the advent and wide adoption of fracking, short and long term forecasts of domestic natural gas remains cheap and supply is expected to remain plentiful. In the Northwest, this resource glut has driven down the price of power production dramatically. Energy efficiency continues to be substantially cheaper than building a new resource on a levelized life-cycle basis. However, with power costs expected to remain at historical lows for years[1], when comparing short-term market purchases to EE acquisition, acquiring power on the market is now often cheaper than the first year cost for energy efficiency acquisition.

The trend of low market prices in the northwest has also had an impact on the avoided costs of energy efficiency. Many popular measures that were cost effective just a few years ago (e.g. residential windows and insulation) are no longer cost effective using the total resource cost test. A lower avoided cost results in some major shifts to the BPA energy efficiency portfolio. For example, the Northwest has spent the past 8 years developing a robust residential ductless heat pump program. But, with levelized cost of unducted systems projected at over $90 per aMW and with lower avoided costs, the cost effectiveness of this program is now questionable (Council, 2015 Sector _Summary_Res). The drop in avoided costs has lead BPA and many utilities to take a hard look at what measures should remain in the portfolio and the rationale behind why some measures that are no longer cost effective on a Total Resource Cost (TRC) basis should remain in the portfolio.

Capacity vs Energy

With changes in temperature, population and resource mix, the Northwest is moving into a new paradigm of capacity constraints. No longer is energy the only concern, but according to the Council's Seventh Power Plan meeting the capacity needs of the region during extreme weather events and low water conditions is likely to become an issue in the near future (Council, 2016, 11-26). A portfolio focused on only energy needs will likely ignore the measures that provide the highest value during times of peak capacity constraints, as well as the additional value in cost effectiveness. In addition, utilities across the region are growing increasingly interested in demand response to meet specific capacity needs and reduce peak demand charges.

Given that energy rather than capacity has historically been the limiting factor in the Northwest BPA does not have a history of factoring Demand reduction into its portfolio design process.

What are the Options for a Preferred Portfolio?

With all of these changes and their impact on resource needs, it is becoming clear that BPA must reexamine its approach to energy efficiency. By reassessing the goals, impacts, and costs of EE programs in light of current market realities, along with the needs of its customers and stakeholders, can BPA realistically balance the costs and benefits of its current approach to energy efficiency and choose the best path forward? Though there is no "right answer" that meets all needs, through thoughtful and well informed examination we can make the best decision.

Presented next are three options that BPA and other utilities can explore in determining how to develop an energy efficiency portfolio when the demand of customer service and the needs of resource acquisition do not align. These options are presented as representations of the extremes of what a portfolio would focus on, recognizing that no EE portfolio is likely to focus solely on one aspect of value without making considerations for any other needs.

Option 1: Ignore the resource acquisition needs of the agency and pursue a portfolio that is solely based on customer service expectations.

With the passage of Pacific Northwest Electric Power Planning and Conservation Act of 1980, the Northwest embraced the concept of acquiring energy efficiency as an equitable power resource to traditional resources like hydro or coal (Northwest Power Act). This approach was revolutionary at the time and has been the backbone of the energy efficiency movement in the Northwest. With the consideration of EE as a resource no longer in question, the region has turned to understanding valuing the other benefits that EE programs have to offer. By focusing on the additional benefits achieved through EE (e.g. customer service, reduced end user bills, political capital) utilities may choose to pursue them regardless of economic and market conditions. If these benefits are perceived to overshadow the costs of acquiring a resource that is not currently needed, then a solely customer service based model, even though it has no historical precedent, may be justifiable despite being imprudent from a resource planning and cost competitiveness standpoint.

A customer service portfolio would likely include the widest variety of EE measures offered, ranging across all customer classes and end uses. This model would focus on ensuring that each end user who pays into the EE program will have the ability to receive a benefit from it if they choose to participate. The portfolio mix would include all measure types, load shapes, and measure lives. Programs that may be expensive but reach niche markets would also be considered. Once a customer service based program is accepted, the question then becomes at what size, budget, and level of resources does a utility commit?

Option 1 Benefits. Customer service: Conventional wisdom suggests that end users think of their utility only when paying a bill or when there is an outage. Neither of these is an overly positive experience. The opportunity to help a customer insulate their home, or help a business

to optimize their operations represents a significant opportunity for a positive customer touch point. Most competitive companies would place real and tangible value on this sort of customer service activity and fund it accordingly. Utilities, which may have in the past accepted their role as a monopoly and undervalued this customer touch point, have begun to see the additional value that energy efficiency brings to their customer service scores and end user relationships. Today in the Northwest, even utilities that see energy efficiency as a detriment to their bottom line recognize that EE programs are crucial to positive customer relationships.

Non-energy benefits**:** In addition to customer service, energy efficiency programs often provide significant non-energy benefits, only some of which have been able to be quantified and considered in the benefit/cost tests. In addition to lowering energy usage, HVAC and weatherization programs help to limit the need for wood burning for heat, thus reducing wood smoke emissions. Agricultural programs, in addition to saving pumping energy, also reduce water and improve crop yields. Currently in the Northwest, the regions' technical experts are exploring additional benefits including increased productivity and comfort.

Ensure program stability**:** In the Northwest, this trend of building and shrinking EE programs is often referred to as 'Mr. Toad's Wild Ride', as the region has experienced this ebb and flow of energy efficiency programs many times in the past (Eckman, 2009). Power market prices have historically been highly variable, and even if some energy efficiency programs may not make sense now, history tells us that it will again show value in the long term. Unlike market purchases, energy efficiency programs require significant start up time and costs to create program infrastructure and train contractors and implementers. When eliminated completely they are costly to restart. By maintaining a portfolio of efficiency programs, even if that portfolio is reduced, utilities can maintain a resource acquisition program with a basic level of readiness to be re-activated when market conditions change.

Economic support: Unlike market purchases, energy efficiency programs have a direct and local economic multiplier effect. Efficiency programs rely on trained contractors to implement programs, and provide direct savings to the people and businesses that participate. This support is especially critical to low and moderate-income residents for whom programs can have a significant impact on their standard of living. This is equally true for businesses struggling through difficult economic times. In many cases lower energy bills may be the difference between staying afloat or ceasing operation. In both of these cases there is often a direct benefit to the utility bottom line in the form of reduced non-payments.

Supports infrastructure for other programs: Even in times when efficiency programs do not in and of themselves make economic sense, they can often serve as loss leaders for other utility programs. When a utility helps a homeowner install an efficient water heater or HVAC system, these may not pencil out as efficiency investments, but they do offer the opportunity to install the demand response infrastructure. In a world where capacity constraints are paramount this added infrastructure benefit may prove very valuable.

Option 1 Costs. Calls prudency into question**:** Acceptance of energy efficiency as a cost effective, tangible resource on par with any other generation asset was a revolutionary idea when the Northwest Power Act was passed in 1980 and at the outset faced many detractors. Proving

the reliability and cost effectiveness of the EE resources requires significant up front research and planning, rigorous implementation standards and post implementation oversight and evaluation. It is only through this rigor that power managers can rely on efficiency in their resource portfolios just like any other resource. Shifting focus away from dependability and cost effectiveness would call into question the reliability of the resource which could lead to opposition when the EE resource is once again needed to address future energy shortfalls.

Shifts focus away from a least cost portfolio: A portfolio that focuses on customer service does not have to result in a more expensive portfolio. However, when utilities are focused on customer service instead of acquiring a least cost resource, the average cost of the portfolio may increase. Measures like ductless heat pumps offer a wonderful customer service opportunity because of the impact of the device being installed, and the amount of funds the utility contributes to their customer when compared to items like efficient light bulbs, but in terms of low cost energy savings ductless heat pumps deliver far less value. By prioritizing measures with high service value and redirecting investment to different areas of the market and contractor community utilities will change the efficiency ecosystem. Over time as utility investment wanes in high yield areas market actors could retrench or disappear limiting the ability to ramp up a more cost effective portfolio in times of resource need.

Threat to the traditional utility business model: The current economic and market conditions in the Northwest that are driving utilities to reduce or eliminate their efficiency programs are real and cannot be ignored. By pursuing efficiency programs while wholly ignoring these conditions, utilities will continue to drive down loads and reduce revenues resulting in the need to raise rates. The other benefits associated with efficiency may offset this cost in whole or in part, but in some cases further lost load represents a significant threat to utilities cash flows and operations.

Option 2: Develop a portfolio targeted only at meeting short term resource needs.

Energy efficiency in the Northwest has always been driven by a regional perspective; that the need is established at a macro level and pursued by individual utilities for the benefit of all. In a homogenous utility market, this has historically aligned well with individual business needs. Recently, there has been an increasing divergence in the power needs of utilities across the region. This misalignment is causing friction in the ‘we’re all in this together’ perspective. One option to address this friction is to abandon our commitment to the long-term regional good and pursue a program dedicated only to short-term resource needs.

As stated earlier, the current resource needs assessment (SITE RESOURCE PLAN) for BPA shows a need to acquire energy in the winter months when the hydro system is running low on water. An EE portfolio based on need would then focus on measures that provide energy savings during these winter months, including weatherization, HVAC and some lighting measures. Programs that do not provide winter savings such as agricultural measures would be removed from the portfolio as they do not contribute to resolving the system need. In addition, measures with a higher cost than an equivalent power market purchase may not be pursued in the short term. For utilities with a capacity constraint, measures like water heating, HVAC, and residential lighting are effective means to reduce morning and evening peaks, and water heating

measures are an effective platform on which to build demand response programs. Low cost programs like residential and commercial lighting may well be less costly than the market even now and as such represent an attractive option for utilities who must meet seasonal load through market purchases. This sort of measure would be retained in a portfolio targeted at current resource needs and scaled according to the scale of the need. A portfolio may focus more on lost opportunity measures such as new construction which are only available at a single point in time instead of retrofit savings, which could be acquired at a later time when needs increase.

Option 2 Benefits. Accounts for shorter term operational realities: When a utility on average has excess energy resources to sell it may still be energy deficit during certain times, and market prices rival the costs to acquire efficiency, pursuing energy efficiency only when it is needed in the short run and below market prices begins to look appealing. By avoiding purchases of EE for longer term investment above market prices a utility could optimize its short term operational cost and could pass along this optimization in the form of rate relief to its customers. This path avoids expenditures that are not necessary to meet immediate needs and provides savings during certain times of energy constraint. Given that current economic trends and power market prices do not show signs of abating, this may become increasingly necessary.

Allows for reprioritization of efforts: Energy efficiency programs require specialized staff and demand a great deal of interaction with end use customers. By reducing EE programs to a minimal more focused level during times of reduced short term need, utilities can redirect staff and capital to other areas that potentially deliver more short-term value. Areas like demand response and community solar are often in competition for resources with energy efficiency within a utility. Since efficiency is a well-established pursuit these newer areas, though potentially more valuable in the short term, often struggle to grow. As efficiency is scaled down resources can be redirected to these areas without additional cost to the utility.

Option 2 Costs. Regional cost for a local benefit: In the Northwest, with the Federal Colombia River Power System generating roughly half of regional power, power generation and need are rarely a local issue. There are utilities across the region for which efficiency does not currently make economic sense while others are still experiencing significant load growth and therefore have a need for energy efficiency. As a regional wholesale power marketer and the central facilitator for efficiency programs for public power, BPA must balance the needs of all customers. A choice to scale back efficiency programs may negatively impact many of those customers and their rate payers who rely on these EE programs to manage load growth and costs. BPA is called upon to make choices that impact a diversity of stakeholders, and by accounting for the short-term needs of some stakeholders it disadvantages others.

Threat to long-term health of programs: The research, infrastructure, and economic ecosystem associated with efficiency programs is substantial and takes significant time and resources to establish. The entire supply chain of efficiency programs are impacted when EE efforts are scaled back or eliminated; contractors that have focused on efficiency programs may see a reduction in business from lack of incentives and find other areas to focus on; staff at utilities and implementers may have to find other jobs and may leave the industry entirely; the emerging technology research grinds to a halt so new efficient technology no longer finds it's way to market. As history has shown us, when conditions change they tend to change rapidly

such as the power crisis of the last decade, and in such times efficiency programs are asked to ramp back up quickly. While rebuilding an EE program takes less time than building a traditional resource, many utilities find themselves needing to "reinvent the wheel" at substantial cost to their ratepayers.

May not be the best long-term investment: Public utility boards regularly face reelection, and utility general managers (GMs) serve at the will of their boards. To please ratepayers and maintain their positions, board members and GMs are often forced to weigh short term rate impacts over the best long term investments that would actually save ratepayers money in the future (though beyond the length of their tenure). Taking history as a guide, efficiency has proven to be a wise long term investment, and though short term market conditions have occasionally been unfavorable, they often change radically and quickly. A continuous and steady effort in EE acquisition allows utilities to stretch the value of their current generation resources and be less vulnerable to volatility in the market.

Option 3: Create a portfolio that attempts to balance customer service expectations and resource needs.

Black and white approaches to any problem rarely make sense in the real world and energy efficiency is no exception. Strategies that focus solely on customer service or solely on immediate resource needs may have some benefits but are likely not achievable. An approach that attempts to balance these paths and implement aspects of each may be more realistic. By allowing for customer service and other non energy benefits to drive some of the energy efficiency portfolio while focusing on cost effectiveness and capacity benefits in the rest, utilities may be able to achieve an effective middle path.

A 'middle ground' portfolio may find the most appropriate balance of customer service and resource needs. However, deciding on what that portfolio includes may be difficult. The approach for this portfolio may begin with assessing the needs of the utilities; what measures specifically address the resource need and meet the cost effectiveness requirements. Next, a utility may want to consider the most politically sensitive programs, including low income or programs that support state or local initiatives. Finally, the voice of the customers should be considered. What are the programs that result in higher customer service scores? A utility may have no need for a behavioral program with a short measure life, but as an important customer touch point, it may move up the priority list. It's likely that this portfolio, while still offering measures across the span of sectors and initiatives, may be reduced in overall size.

Option 3 Benefits. Best of both worlds: In a world of historically low market prices, energy efficiency can be a difficult investment for executives to commit to. But despite the drivers to ramp down or eliminate them entirely, efficiency programs have significant non-energy value and dismantling them has long-term consequences. Taking a path that maintains efficiency investments where service and non-energy benefits can be maximized while also targeting those investments with the greatest short-term benefits, such as those that focus on peak usage, is an attractive prospect.

Ability to scale: By maintaining a portfolio with two discrete goals, utilities can scale their level of investment in each portion of the portfolio based on need and changing economic conditions. If capacity constraints become more pressing more resources can be dedicated to the portions of the portfolio that target system peaks, and conversely scaled back should capacity become less of a restriction. Given that both needs-based and service-based portfolios are still in place, each can be scaled over time without the need to recreate market infrastructure.

Option 3 Costs. Difficult to implement: Achieving the best of both worlds requires balancing competing needs in a purposeful manner that may be difficult to accomplish. How much of the portfolio would be dedicated to customer service and how much to BPA and or utility resource needs would be difficult to establish, especially from a regional perspective. How to achieve buy-in from stakeholders on any proposal that may not be optimized for their needs would be equally problematic. Setting aside the difficulty in planning, there would also be challenges in execution. Utility energy efficiency programs are notable for their complexity even after over 30 years of experience. Given the scale and scope of programs necessary for this approach and the level of interaction with a diversity of end users, there are a lot of moving pieces that must be coordinated. Setting up a separate program with separate goals would increase that complexity in a significant way.

Not optimized for either goal: The problem with hybrid approaches to any problem is that they are rarely if ever the best solution to any specific goal. Being a middle path both short-term resource needs and customer service would suffer. It may well be that no matter how tailored, efficiency measures cannot match current market prices in addressing short term resource needs, and that customer service focused programs further exacerbate a load growth situation. Though a mixed approach may avoid some significant downside of either "pure" approach it also does not maximize their benefits.

Pushes portfolios to the edges: A balanced energy efficiency portfolio exists on a cost continuum. Measures at the high end of the portfolio are often new and untested, or otherwise have benefits that make them worth inclusion outside of their cost/benefit proposition (e.g. low income programs, or measures in demand from customers). Between these two extremes there is a substantial universe of measures that are neither particularly low cost nor do they provide significant non-energy benefits. When an efficiency portfolio is optimized to provide only the two ends of the spectrum this universe in the middle is left stranded and the infrastructure necessary to support them languishes. This is important because these measures are often critical for a full offering. Commercial bulbs and fixtures may be very low cost, but commissioning and controls are more costly and both bulbs and controls are required for a comprehensive lighting retrofit.

The future for BPA and the Northwest

The three options presented here do not encompass all of the choices that are available to address these issues, and it should be noted that the options presented above reflect somewhat of an extreme view of the potential solutions. BPA is pulled in a variety of directions and our customers have their own drivers to be considered. The path BPA takes going forward is unclear.

Option 1 – Customer Service

A singular focus on customer service and non-energy benefits is unlikely to be the strategy BPA chooses. In an era of low gas prices, low load growth and increasing cost of EE acquisition, a shift in focus from resource acquisition to customer service and public good runs dramatically counter to our principle of providing the lowest rates possible consistent with sound business principles. However, an increased focus on the service and non-energy value does provide a prudent hedge against a future scenario in which additional energy resources are beneficial to the Federal Columbia River Power System.

Option 2 – Short Term Needs

A focus only on short-term needs is equally unlikely for BPA. BPA has a public service mission and is committed to providing equity of opportunity for all of our customers. BPA's smaller, more rural utility customers, because of cost associated with acquiring efficiency in rural areas, would be unlikely to either participate in or benefit from an efficiency program targeted only at those opportunities that are cost effective in the current market. An equally powerful driver that makes this option unlikely is the fact that BPA has a stakeholder community that extends beyond our customers. As a public agency BPA has a public service mission and is unlikely to dramatically scale back one of the critically important tools it has to provide benefit to the people of the Northwest. Finally, the direction provided by the 1980 Northwest Power Act to acquire energy efficiency consistent with the Northwest Power and Conservation Council's Power Plan cannot be ignored (Northwest Power Act, 839b(d)(2)).

Option 3 – Striking a Balance:

BPA is very likely to pursue some version of a hybrid middle, path, but what exactly this looks like is still very much uncertain and comes with a vast number of complexities in decision making and execution. How can a hybrid portfolio be executed effectively? How will prioritization happen and with what criteria will it be measured? Does the attempt to find a balanced approach result in the least amount of value to both BPA and its customers? How much of the portfolio would go to one objective or the other? Would customers be happy with competing drivers? All these questions would need to be answered in a way that matches the needs of a very diverse group of stakeholders, and the middle path may well be one that constituents and customers can agree to rather than one that it optimized for any one set of drivers.

The options presented here exist roughly on a continuum from customer-focused to resource-focused. Each has pros and cons and given that BPA has both a resource and service mission, it is very unlikely that BPA or our customers will adopt a purely resource-focused or purely service-focus approach to energy efficiency. BPA's energy efficiency program will almost certainly evolve as market conditions change, scaling both the scale and scope of its efficiency program while still supporting a variety of programs to maintain infrastructure and

deliver a long-term investment in both capacity and energy. The effectiveness in BPA executing this transition and the impact to programs, utilities, and retail ratepayers throughout the Northwest remains to be seen.

Conclusion

If we look to history as our guide, we find that energy market conditions do not remain stable for long. In the past, the energy efficiency community of the Northwest including utilities, constituent organizations, legislatures, and rate payers has been asked to decide whether or not to maintain efficiency programs in the face of adverse market conditions, and time and time again conditions that have seemed like they had no end in sight have changed, sometimes abruptly, to favor efficiency again. In some cases BPA and the utility community of the Northwest have responded to these situations by scaling back programs or abandoning our efficiency efforts all together, as we did during utility deregulation of the early 90's, only to have to rapidly ramp them back up when conditions have changed. In other instances we have forged ahead despite market conditions and continued to support resource acquisitions that were unneeded in the short term only to prove valuable in the long term.

But, the vindication of history is no substitute for a prudent strategy for the future. Low load growth and the availability of low cost natural gas may indeed have fundamentally changed the utility business model, and proceeding without caution along the path that has always proven correct in the past may prove to be naïve. Finding a path forward that is guided by the real and meaningful lessons from history while addressing the realities of the present is undoubtedly going to be challenging and inevitably going to be divisive.

BPA and the northwest public utility community face a unique set of circumstances, but the overall tension between efficiency programs and market conditions is by no means unique to the Northwest. The considerations described here will be central on the minds of all utilities in the near future and the decisions they make will have a far reaching impact on the role of energy efficiency in the American economy going forward.

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