Oregon's Approach to Encouraging Industrial Energy Efficiency through Choice

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ABSTRACT

In Oregon, large industrial customers served by the state's two largest investor-owned utilities, like other electric ratepayers served by those utilities, contribute to a public purpose fund for energy conservation and renewable generation development by paying a 3% charge on their monthly utility bill. Those using greater than 1 aMW of electric energy at a site during a year have the option to either participate in the energy efficiency and renewable energy programs offered by the Energy Trust of Oregon, Inc. (Energy Trust) or they have the ability to work with the Oregon Department of Energy (ODOE) to "self-direct" a portion of their public purpose charge by certifying conservation or renewable energy projects at their sites and earning credits to use towards the public purpose charge on their monthly utility bills.

Energy efficiency projects are in direct competition with other capital projects for customer investment dollars. Priorities vary across the range of customers as do products, processes, and market competition. Similarly, motivations for choosing either the programmatic or self-direct option vary by customer and site depending on their internal priorities that can change over time. The technical and project management assistance available through the Energy Trust programs, with a cash incentive paid upon project completion, may be more attractive to some customers than funding their projects through time with built up credits earned through self-directing. However, another company may find it more attractive to self-direct projects at their own site and lower the public purpose charge on their monthly electric utility bills. Self-direction is optional and, over time, industrial companies can change their self-direction status

This paper explores the background of how these two options for industrials were created, with a focus on the importance of consensus building and the expectations generated. We will then provide a look at how the two options have been implemented and where the programs are today.

Background

Many Oregonians have been aware of the importance of energy conservation and have participated in the energy arena since the energy crisis of the 1970's. In 1979, the Oregon Legislature created the Business Energy Tax Credit (BETC) to promote conservation. Over the years the BETC program has expanded to include renewable energy, recycling, telecommuting and transportation projects.

The Northwest Power Planning Council (known as the Northwest Planning and Conservation Council since 2003) (the Council) was created by Congress, in the Pacific Northwest Electric Power Planning and Conservation Act of 1980, to give the citizens of Oregon, Washington, Idaho and Montana, a stronger voice in determining the future of key

resources common to all four states - namely, the electricity generated at, and fish and wildlife affected by, the Columbia River Basin hydropower system. As part of its mandate, the Council would propose and adopt a regional conservation and electric power plan that would be reviewed at least every 5 years. The first of these plans, adopted in 1983, as well as the Council's subsequent plans, would help steer the region's course in considering conservation and renewable energy.

In 1981, the Industrial Customers of Northwest Utilities (ICNU), a regional trade association, was created to represent its members' electric power interests in regulatory, legislative, and power planning forums. In 1984, Oregon voters, through a ballot initiative, founded the Citizens' Utility Board (CUB) as a group funded by ratepayers to challenge, on behalf of residential customers, rate increases filed by the investor-owned utilities and to engage in other policy matters before the OPUC and the State Legislature.

This climate provided the backdrop for the deregulation discussions that took place in Oregon during the 1990's, and the subsequent proposed legislation.

The Comprehensive Review

By the mid-nineties the electricity industry in the United States was in the midst of significant restructuring due, primarily, to Congress's passage of the 1992 Energy Policy Act and subsequent actions by the Federal Energy Regulatory Commission ("FERC"). The path had been marked to some degree by natural gas deregulation, but there were many questions about how such a transition might work in the electric industry. The path was especially tricky in the Northwest due to the presence of the Bonneville Power Administration (BPA), a federal power marketing administration that supplies, on average, 40 percent of the power sold in the region and controls more than half the region's high-voltage transmission. How such a dominant federal agency would fit into a competitive energy market was a major puzzle.

In 1996, the governors of Idaho, Montana, Oregon and Washington convened a 20-member Steering Committee, representing broad and divergent energy interests, to "seize opportunities and moderate risks presented by the transition of the region's power system to a more competitive electricity market".[1] The Comprehensive Review hoped to protect the region's natural resources, distribute the costs and benefits of a more competitive marketplace equitably, and assure the region of an adequate, efficient, economical and reliable power system. The group worked for 11 months, held hundreds of meetings, and received over 700 written comments. The final report, the "Comprehensive Review of the Northwest Energy System – Final Report: Toward a Competitive Electric Power Industry for the 21st Century," set the stage for the development of regional policies toward energy industry restructuring.

Equally important, strategic relationships were formed during this time, as the involved participants began to realize that direct access (i.e., providing customers with access to non-utility energy suppliers) was on the horizon and that trade offs and bargaining around that issue would be critical to making any changes. Among other things, the report discussed direct-access, the creation of a "system benefits" or "public-purpose" charge to encourage energy efficiency and renewable energy, and the concept of large energy consumers self-directing energy efficiency and renewable projects.

[1] *Comprehensive Review of the Northwest Energy System – Final Report: Toward a Competitive Electric Power Industry for the 21st Century,*

The Legislature

The State Legislature first took up these issues in 1997 in the form of House Bill 2821. The bill would be defeated, but the work performed by participating advocates during that 1997 session would set the stage for the 1999 session. The various groups recognized that finding a common place to land would be complex, and that this would likely be a 2 or 3 session effort. At the time, industry was very interested in going to market, as the commodity market was viewed as relatively low risk and inexpensive. However, certain major players were staunchly against direct access. Conservation, renewable energy, and consumer advocates were strong supporters of a public purpose charge, which they saw as a dedicated fund that would benefit all ratepayers. But the proposed charge raised several concerns for other groups, among them: what the percentage should be, how long it would last, who would have to pay, whether the charge would apply only to the customers of the investor-owned utilities or to others as well.

By 1999, a coalition of business customers, industrial association representatives, restaurant associations, conservation and renewable energy advocates, and energy marketers had joined forces in the form of the Fair and Clean Coalition. Although each interest had its own agenda, the groups had developed a sense of mutual respect and recognized the fact that if they stood together on certain issues they would be more powerful than they could ever be individually. What brought these divergent groups to the table was Senate Bill 1149 (SB1149). The bill reflected many of the recommendations of the 1996 Comprehensive Review.

Unlike the deregulation legislation passed in some other states, SB1149 did not require utilities to sell off their generation facilities nor did it deregulate residential consumers. Rather, it provided that residential customers would retain the stability of OPUC-regulated rates, and would receive a portfolio of options (such as the option to purchase renewable energy). At the same time, the bill encouraged competition in the electricity market by offering commercial and industrial customers the option of direct access to the power generation market. The bill mandated increased investment in energy conservation, and new renewable energy resources, by proposing a public purpose charge whereby every ratepayer of the state's two largest electric investor-owned utilities would contribute a 3% charge to a public benefits fund. SB1149 also provided that the OPUC could potentially direct most of the proceeds of this charge to a non-governmental organization to invest in energy efficiency and renewable resources.

The State Legislature was able to successfully negotiate the many issues, and SB1149, Oregon's electric energy restructuring law, passed. During the 2001 legislative session, the law was revisited. During that time, California (which had passed a deregulation bill in 1996) was experiencing rolling brownouts and blackouts amid energy trading machinations that later led to utility bankruptcies and fraud investigations. With concerns about the effects of deregulation mounting, some Oregon legislators wanted to repeal SB 1149 and others wanted to delay the implementation of it. Eventually, the legislation was upheld and remained intact, with a 5-month delay until it went into effect.

Industrial Issues and Key Expectations

Throughout the SB1149 discussions, industrial advocates were focused on the low electric costs assumed to follow in a deregulated market. The prevailing expectation was that large consumers would benefit from those low rates. Unfortunately for some, this did not

happen. The California crisis erupted, sending spot market prices to record high levels. As a result, the direct access piece of SB1149 did not develop exactly as anticipated.

The public purpose charge was not an idea that industrial advocates were wholly comfortable with; however, they were able to compromise on aspects of it in exchange for other concessions. Industrial advocates insisted that the public purpose charge must be clearly disclosed on the ratepayer's utility bill. In addition, the charge would be capped at 3% for the industrials and would have a sunset date of 2012. The final piece that made the public purpose charge palatable was the self-direction option, which the large industrial customers saw as a safety valve. If they were unhappy with the way the funds were being utilized, the largest energy consumers could direct their own energy investments at their sites.

With the concept of self-direction, there was also the expectation that an industrial site positioned to conduct its own projects would be able to do so easily. The intent was to let industrial sites each run their own programs; dealing with the complexity of their own company while incurring a minimum of oversight from outside the company. SB 1149 appointed ODOE as the reviewing entity, and the BETC program was identified as the review model for self-direction using internet-based electronic project applications.

Industrial firms had less clear expectations for the administration of the public purpose funds generally. There was an expectation that the 3% would be used to maximize benefits to the utility system and that the entity would do so in an energetic and cost effective manner. This would take place through an economy of scale, by utilizing one organization to handle everything. The organizational entity clearly could not be one utility or the other, and it was the opinion of the business elements of the group that it should not be government-run. Thus was born the concept of the independent non-governmental agency that, under the OPUC's oversight, would manage the programs supported by the public purpose charge.

Administrator of the Public Purpose Funds

Energy Trust was created as the independent, non-government, non-utility, non-profit organization to manage the largest portion of the collected public purpose funds. Energy Trust is charged with managing 73.8% of the public purpose fund with 56.7% dedicated to energy efficiency and 17.1% for renewable energy projects. The public purpose funds not directed to Energy Trust are delivered by Education Service Districts, assisted by ODOE, for efficiency and renewable projects in schools and the State of Oregon Department of Housing and Community Services for low-income housing and weatherization projects.

Energy Trust is accountable to the OPUC and is governed by a grant agreement with them that details Energy Trust's contractual obligations and requirements to comply with SB1149, as the bill was set forth in the Oregon Revised Statutes and corresponding Oregon Administrative Rules. The organization is one of approximately a dozen like it throughout the country who manage similar funds for energy efficiency or renewable energy, and one of only a handful which are non-government and non-utility. Energy Trust has a volunteer Board of Directors, including ex officio representatives from ODOE and the OPUC, and also receives input from two standing public advisory committees: the Conservation Advisory Committee (the "CAC") and the Renewable Energy Advisory Committee (the "RAC").

Where Are We Today?

Today we can look at numerous examples of industrial energy consumers in Oregon that have taken advantage of the public purpose charge funding to implement energy efficiency and renewable projects through the available programs. An independent review of the public purpose charge, required by the legislation, was submitted to the State Legislature in December 2006. From January 1, 2005 through June 2006, industrial projects funded with public purpose funding through either the Energy Trust Production Efficiency program or the Self Direction program saved 206,000,000 kWh with $28,500,000. That equates to 23.5 aMW, a significant amount of energy savings. Although this amount does include one very large project that accounts for one half of the savings, the combined programs have a real impact on the industrial sector. A second independent study of the public purpose charge published in October 2006 strongly endorsed the program, and proposed certain modifications: increasing the percentage from 3% to 5%, allowing the OPUC to regularly assess the need to change that rate, extending the sunset date to 2022 to provide a longer term, stable source of funding for efficiency and renewable investments in Oregon, and redistributing the funds so that only energy-related activities are funded.

Original advocates for the public purpose charge indicate that they are largely satisfied with Energy Trust's administration of the funds, and the energy savings have exceeded expectations in most sectors. That said, there is always room for improvement. Some consumer advocates feel that many businesses may still not appreciate the societal value of the energy efficiency and renewable investments made possible by the public-purpose funding, while industrial advocates remind us that companies must be able to remain competitive and able to function in the global marketplace and that everything that affects their bottom-line is a threat to that.

ODOE's Self Direction Program

The Self Direction program was envisioned as a program that would utilize the technical resources of the largest industrial sites to identify, develop, and implement projects. Those eligible for the self-direction of the public purpose charge are large electric consumers who use greater than one average megawatt (8,760,000 kilowatt hours in the previous year), and are metered through a single meter, or have a contiguous site - buildings within 1,000 feet of each other. Analysis indicated that large industrial firms were better able to carry out cost-effective projects than utilities were, and that the process would require less administration, which meant that more funds could be directed into the projects. Industrial sites would be able to certify these projects and then be relieved of a portion of their public purpose charge. To provide verification and oversight, SB1149 directed ODOE to review sites and projects. There is a great diversity in the industrial realm. Corporate culture, conservative and progressive business styles, market impacts that vary by sector, and technical expertise both in-house and locally available, all affect how individual sites conduct energy projects. Despite this potential for a wide variation, demands of industrial competition drive many sites to their own style of efficient project management. These basic reasons contributed to the desire for the Self-Direction program.

ODOE modeled its Self-Direction program on its long-standing, successful BETC program, whereby businesses can take tax credits for qualifying energy conservation projects.

Organizations with no tax liability such as nonprofits and municipals can seek pass-through donors to take advantage of the credit at a reduced rate. In fact, many of the projects proposed for Self Direction also take advantage of BETC, further reducing program overhead costs. The use of an existing program design used for BETC, upgraded to handle the new situation, provided a stepping-stone for ODOE to move forward quickly. ODOE would eventually develop an internet-based database to streamline the program's project review process. Each site must be certified by ODOE and is then issued a user ID to provide access to the database. There, they can submit new projects, review the status of reviews in process, and check on the amount of credit. ODOE and the utility accounting departments also access the same database to complete the administrative functions of reviewing projects and applying the credit. Everyone can access the same data, real time, to view a transparent picture of a project or site status. The user ID also provides appropriate security so that a user can only access or manage data that is relevant to their work.

To certify a project, the user submits a project pre-certification request to ODOE, along with the project details, drawings, costs and calculations and a deposit to offset ODOE's administrative costs and ODOE reviews the project and cost eligibility. Once a qualifying project is completed, the user mails actual project cost and installation details to ODOE (projects of $50,000 or more require certified public accountant compilation of expenses). ODOE then reviews the application for certified project expenditure and if certified, ODOE will enter the credit into the database, and the consumer will request that their utility remove a portion of the public purpose charge from their bill (self-directors are still required to pay those portions of the public purpose charge that go towards the schools and low-income weatherization). If a review shows there are no conservation opportunities available at a site, the consumer may receive credit for 54% of the public purpose charge.

An initial lesson-learned during implementation of the program was that the administrative features negotiated into place in the initial stages created an extra time burden for the facility staff charged with running self-direction. It was necessary to adjust the program administration procedures. Fortunately, having the program details in the Oregon Administrative Rules, instead of in the statute, allowed ODOE to adjust the process without complex legislative action.

The Self-Direction program now provides an avenue for industrial sites to apply 100% of their project costs toward offsetting their public purpose charge. This model is different than the “cash on the barrelhead” incentive approach. The site must pay for the entire project up front, and will gradually recoup the costs through reduced public purpose charges. This is one of the financial options that were attractive to industry. Other services provided to Self-Direction sites are acquired directly by the owners instead of being developed and offered by the ODOE. The following energy program components are managed directly by the site: (i) Audits, (ii) Energy analysis, (iii) Project development, (iv) Self-Direction and BETC incentive applications, (v) Technical assistance, (vi) Project management, and (vii) Pre and post metering (verification).

Currently, the electric utilities use their billing services to apply the credit to offset the public purpose charge. While industry preferred complete independence from the utilities, they found that using the utilities’ billing systems reduced the administrative load on their industrial facility staff. Accordingly, the billing and collections for the balance due of the public purpose charge was switched back to the electric bill.

Energy Trust's Production Efficiency Program

Energy Trust's Production Efficiency program offers energy efficiency services for industrial processes for manufacturing, agricultural, and municipal wastewater and freshwater facilities of all sizes. The program funds detailed energy savings engineering studies to determine the costs and savings of electric efficiency opportunities. If projects meet Energy Trust cost effectiveness criteria, cash incentives may be provided to participants when measures identified in the studies are completed. Cash incentives are calculated as $0.15/annual kWh saved up to 50% of incremental project cost capped at $500,000 per site per year with a minimum simple payback restriction of 18 months. From mid-2003 through 2006, the program has provided $40M in financial and service incentives (technical studies, commissioning oversight) to industrial businesses, saving an estimated 333,000 MWh (38 aMW) of electric energy.

In exchange for the project funding, program participants must submit invoices as proof of total project cost, submit completed paperwork, and assist with Energy Trust's evaluation process by providing post-installation access to the site and utility usage data. These efforts by the participant allow Energy Trust to ensure that ratepayer funding is being used prudently and that the projects are indeed installed and providing energy savings.

Typically, up to 50% of the project cost can be covered in cash at project completion. If also eligible for BETC, some participants may be able to recover 70-85% of project costs. In addition, potential projects with energy savings that would well exceed the per-site cap may be eligible for "mega-project" status. These mega-projects require special analysis and consideration by Energy Trust with incentive offerings negotiated below $0.10/annual kWh saved. Over the program's 4-year history, 5 mega projects have been committed so far.

The program matches participants with a Program Development Contractor (PDC) who has specific expertise or established relationships and works with the participant throughout the process. The PDC plays a significant role as the participant's advocate by doing the following: (i) Offering technical expertise, (ii) Identifying engineering companies (allied technical assistance contractors, ATACs) to perform detailed studies of potential projects, (iii) Reviewing technical studies from participants' perspective, (iv) Processing all program paperwork for participant, including study payment offers and project incentive offers, (v) Assisting the participant with BETC paperwork, (vii) Checking-in throughout implementation, (viii) Performing pre and post installation site verifications, and (ix) Delivering final incentive checks.

From the perspective of the participant, there are several positive benefits of the Production Efficiency program that may help to overcome some of the barriers to implementing energy efficiency projects. The pros include: (i) Cash incentives paid at project completion (ii) Study costs paid in full with implementation of identified measures (iii) High quality study documents provided to participant (iv) Project assistance through use of PDC. If a facility does not need these services to implement their project, they may view these pros as cons as it may not be a good fit culturally or financially.

Case study. Collins Products, LLC of Klamath Falls, Oregon is one of a group of wood product companies associated with The Collins Companies. This 10-MW facility manufactures siding, trim, and particleboard. Although they're not one of the largest wood products facilities in the region, they have significant energy consumption requirements with potential for energy savings.

At one time, this site was a self-directing facility but has since decided to pay into the public purpose fund and fully participate in the Production Efficiency program. Over the years, they have implemented several energy efficiency projects on their site with Energy Trust support saving an estimated 4,000MWh and receiving over $650,000 in project incentives. In 2004, they implemented a hydraulic press retrofit in their particleboard plant. The following year they installed VFDs in compressed air systems and completed additional process and dust collection efficiency improvements. As part of their ongoing maintenance program they have a high efficiency motor procurement policy.

Their participation in Energy Trust's Production Efficiency program is mostly attributed to three factors; program management and process assistance from their PDC and vendors, technical assistance through detailed engineering studies, and overall financial gain through program incentives. RHT Energy Solutions, their PDC, played an integral part in familiarizing the company with the program process and encouraging them to think about saving energy in general. Donn Jensen, Manager of Particleboard Operations at Collins, summed up his experience as follows. “Working with the Energy Trust program has been extremely easy due in most part to the work of the PDC.”

Technical assistance in the form of funding detailed engineering studies brought attention to cost effective projects they were able to implement. They saw little down side risk involved in their participation and the studies resulted in valuable documents for the plant. Related to the technical benefit of the studies is the overall financial benefit of participation from covering the cost of the initial project studies to offering up to 50% of incremental project cost coverage. “Cash on the barrelhead” at project completion reduced the simple payback of the project to a level the company was willing to accept.

By implementing efficiency projects, they have benefited from key secondary benefits as well. What was once a dusty work environment has been transformed into a cleaner space with freed up vacuum capacity to the system. The market for wood products has been impacted by the downturn in the housing market. Raw material is scarce at this time, that’s why they focus on wasting less than 1% throughout their processes by reusing sander dust, broken boards, and floor sweepings. In addition, the 3-5% productivity gain they’ve realized without additional costs beyond that of the project is a significant benefit to their business.

Interaction between Self Direction and the Energy Trust

SB1149 was silent as to how self-direction and the entity distributing the majority of the public purpose fund would interact. Thus, one of the early issues that Energy Trust's Board of Directors (Board) grappled with was whether or not companies that self-direct the part of the public purpose charge that Energy Trust would otherwise receive would be eligible to receive comparable services as ratepayers who pay a full public purpose charge.

During 2002, Energy Trust was just getting established, developing by-laws and strategic plans, hiring staff and planning and designing the structure of the energy efficiency and renewable energy programs that it would offer. Energy Trust staff met with members of the CAC, the RAC, the Energy Trust Board's policy committee, ICNU, ODOE and others to discuss the considerations and various options for a policy for companies eligible to self-direct. Discussions centered on:

The desire to stimulate as much electric energy efficiency and renewable energy production in Oregon as possible consistent with Energy Trust's mandate and its other policies, including equity and cost-effectiveness

The desire to take advantage of the significant energy savings available in the large industrial sector

The Energy Trust's ability to leverage the public purpose funds to get more bang for the buck than a self-directed project (e.g. from a societal perspective, public purpose funds acquire more energy savings when distributed through the Energy Trust programs because the public purpose funds are not used to cover the full project cost as they are through self direct)

The sense that it would be unfair if energy users contributing to the Energy Trust received no or delayed project funding because Energy Trust funded a self-directing energy user that was not contributing to those funds.

In the fall of 2002, after considering the pros and cons of several alternatives, the Board adopted the limited-overlap model option since it was viewed as providing a fair balance between the equities of smaller energy users, while still engaging large energy users in Energy Trust programs. The Board later revised the policy in limited ways in 2006. In its current form, Energy Trust's self-direction policy provides that no company may receive self-direct credits and Energy Trust funding for the exact same measure. A company that is using self-direct credits towards its public purpose charge may receive 100% of the standard Energy Trust incentive for certain specific measures (prescriptive measures such as motors, unitary HVAC replacement, and small measures involving $3000 or less cost per project) where it is determined that application of the self-direct policy's requirements would unreasonably interfere with Energy Trust's promotional efforts. For all other measures, a self-director has the option of choosing to either: (i) stop using self-direction credits on its utility bill for a period of 36 months at the same ODOE-certified site where it performs an Energy Trust-funded measure, in which case the company can receive 100% of the standard Energy Trust incentive amount for the measure; or (ii) continue to use self-direction credits and receive only 50% of the standard incentive.

If a self-director takes the full amount of the Energy Trust funds and then decides, within the 36-month period, to use self-direction credits against their charge, they must repay (within 2 years) a pro-rated amount of the Energy Trust incentive funding up to a maximum of 50%. Energy Trust's policy does not ask self-directors to ever stop accumulating self-direction credits for other projects and ODOE lets self-directors "bank" credits and resume using them following the 36 month time period.

Creating a Path Forward

Although large industrial customers consented to the public purpose charge mainly as a compromise toward moving direct access ahead, the outcome of public purpose funding appears to be largely positive for the industrial sector. Large industrial facilities can choose how they like to contribute their share of the public purpose fund and implement efficiency measures at their facility. Those who choose to participate in the Energy Trust's Production Efficiency program benefit from the cash incentive paid at project completion and technical assistance provided throughout the process. Self-directing facilities benefit from the ability to use all their efficiency and renewable contribution to manage and implement onsite projects with their own resources.

As the Oregon Legislature discusses the public purpose funding again in 2007, they will consider the recommendations of the third party report and comments from many of the same business and efficiency advocates involved in the 1999 session. Many improvements to both the Self-Direction and Production Efficiency programs have been made along the way but the main concepts of the original sessions remain today and have been exceedingly successful at encouraging industrial efficiency projects through choice.

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