

Market Potential 72% Consumer Con
3% Energy Efficiency 27% Produ

on 82% Energy Savings 69%
atisfaction 74% Market Share



research/into/action^{inc}

Final Report

PRODUCTION EFFICIENCY PROGRAM: END-OF-FIRST-YEAR PROGRESS EVALUATION

Funded By:



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EXECUTIVE SUMMARY

The Energy Trust of Oregon, Inc., was incorporated as an Oregon nonprofit public benefit corporation in March 2001, to fulfill a mandate to invest “public purposes funding” for new energy conservation and related activities in Oregon. It receives funding from a three-percent public purpose charge to the rates of the two investor-owned utilities in the state. The Energy Trust has responsibility to report to the Oregon Public Utilities Commission (OPUC) on how it is spending its funding and what it achieves.

This is the first process evaluation of the Production Efficiency program, which began operation in May 2003. The program goal is to acquire large volumes of electric savings at modest cost from a wide variety of efficiency strategies by providing positive financial, energy and related benefits for participating businesses and institutions with industrial processes. In addition, the program seeks to acquire savings from efficient municipal water and wastewater works.

This report provides an assessment of the program approximately six months after its launch, with the intent of facilitating continuous improvement. The Energy Trust hired the team of Research Into Action, Inc. and MetaResource Group to conduct the process evaluation. For the evaluation, the team interviewed seven Energy Trust and program management contractor (PMC) staff, staff of all four program delivery contractors (PDCs), staff of six of the thirteen allied technical contractors (ATACs) involved in 2003 program activities, the Executive Director of Industrial Customers of Northwest Utilities, and 31 program participants from 28 organizations with industrial processes.

SUMMARY OF FINDINGS

The Energy Trust signed a contract with Aspen Systems to serve as the PMC for the Production Efficiency program. The PMC’s program staff includes one dedicated Technical Manager, and three staff (the Program Manager, Operations Manager, and Administrative Coordinator) who support both the Production Efficiency and Building Efficiency programs.

By October 2003, the PMC had designed the program, incentives, procedures, participation forms, tracking systems and incentive payment processes. The PMC also had issued two RFPs to solicit bids from firms to serve as PDCs and ATACs,

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had selected qualifying firms, and contracted with all four PDCs and fourteen ATACs. The PMC identified the first Production Efficiency projects in August 2003; by October 2003, the program was in full swing.

By the end of 2003, the Production Efficiency program had attained customer commitments for projects estimated to acquire 104 million kWh in savings, over half of its cumulative 2003-2004 goal. In addition, four participants had installed projects and 124 projects had been identified (but not necessarily committed to) at 78 firms. The PMC paid ATACs \$1,000,000 to conduct the technical studies that identified these projects, which had associated estimated incentives of \$13,800,000.

The success of the program in terms of volume of participation far outstripped the expectations of Energy Trust and PMC staff. All interview contacts identified the program design and its implementation through the Technical Manager, the PDCs and the ATACs as working well overall.

Regarding program design, interview contacts value its goals of achieving industrial production efficiencies, energy savings and non-energy benefits, as well as its simplicity, its ability to accept large projects, the incentive level and its non-negotiability, and studies which are free to customers who go on to implement recommendations.

Helpful to program implementation, the PMC Technical Manager, the PDCs and the ATACs all have experience working with and marketing to the industrial sector. Program staff and contractors bring trusted relationships and successful track records to their work for the program; to promote Production Efficiency, the Technical Manager, PDCs, and ATACs called on many customers with whom they had previously worked. The PDCs report good working relationships with utility account executives.

Interviewed participants expressed high satisfaction with the program and with the services they received from its staff and contractors. In fact, participants identified the high quality of program representatives as a significant program asset. Participants report that the people they worked with were helpful, knowledgeable, dedicated and enthusiastic. Participants appreciated having the PDC available to help them go through the process. Several participants volunteered that the program was much more responsive to them than they had previously experienced in efficiency programs run by the utilities or by the state.

Of surveyed participants, 41% had not previously participated in a utility efficiency program. These program newcomers accounted for 7% of the savings estimated for the surveyed participants.

Most of the issues or problems identified by interview contacts stem from, or were exacerbated by, the volume of participation.

PDCs and ATACs view the PMC as understaffed. They reported feeling many times that the PMC Technical Manager was unable to respond adequately to their requests for guidance. In addition to the technical review of the 79 studies conducted by PDCs through their ATAC staff, and oversight of all 175 studies done in support of the 124 identified projects, the Technical Manager also selected an ATAC to conduct each study, negotiated the study scope and cost with the ATAC, provided overall supervision to the staff of four PDCs and 13 ATACs, approved PDC and ATAC invoices, and met with senior management staff of a number of firms considering large projects. Given this list of responsibilities, it is perhaps not surprising that contacts described the Technical Manager as “high energy,” “dedicated to the program’s success,” someone who “gets the job done,” and one of the program’s assets, while being overworked.

The time-limited incentive kicker that was offered during the first six months of the program stimulated participation (by all accounts) and further taxed PMC resources while the program was still in development. In particular, the kicker came before the PMC had established technical guidelines to direct technical analyses and reports, or established a format for the PDCs to report project status. (Early in 2004, subsequent to the interviews conducted for this evaluation, the PMC began the establishment of technical guidelines.)

Some issues identified by contacts do not relate to the PMC’s staffing resources and relate instead to the program design. One of these issues is the concern expressed by both PDCs and ATACs that ATACs are disadvantaged with respect to PDCs that are also ATACs in terms of working with customers. As a second issue, multiple contacts identified the lack of a final savings-verification audit for installed projects as a program weakness.

Other identified issues arise from tensions inherent among the multiple program goals and features. For example, Energy Trust and PMC program staff and contractors are wondering whether the Energy Trust places greater value on the goal of attaining large quantities of cost-effective energy savings or on the goal of serving smaller or under-served customers. Although both goals can be furthered, when resources are scarce, staff and contractors must decide which objective to pursue.

As another example, the Energy Trust launched the Production Efficiency program before it was fully developed. In order to quickly acquire large quantities of energy

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savings, with lower administrative costs, it hired a PMC instead of managing the program with in-house staff.

At the same time, the Energy Trust is committed to an open decision-making process involving the public, which for any issue unfolds over months, often three or more. Yet in order to implement a program that is not fully developed, and to do so with the high-intensity effort necessary to achieve ambitious goals, the PMC needs rapid-fire decision support from the Energy Trust. The Energy Trust Program Manager, charged with moving the program forward to attain the goals, sometimes improvises interim decisions that are later revised. Other times, the Program Manager simply postpones decision-making, awaiting the organization's process to play out. In such cases, the PMC's ongoing program implementation activity *de facto* creates interim program policies and methods that are subject to change as the Energy Trust's decision process slowly moves forward. Most affected by delays are contracts, written communications about the program and policy decisions.

This program decision process has the effect of undermining the authority of the Energy Trust Program Manager and the PMC as they represent the program to customers. It also undermines program stability, as contractors and customers receive changing messages about what can and cannot happen under the program, and about how activities must happen. Ultimately, it inhibits the program's ability to serve customers, impedes the acquisition of energy savings and increases program administrative costs.

CONCLUSIONS

1. The Production Efficiency program is working well.

The Production Efficiency program is working well in terms of number of customers brought into the program, magnitude of energy savings, types of projects and the project development process, which uses short, focused technical studies. Many customers and contractors believe the Production Efficiency program differs in a number of respects from its predecessors and believe these differences have contributed to its success.

2. The success of the Production Efficiency program derives in part from the quality of the staff and contractors delivering it.

The professional reputations of program staff and contractors benefit the program, as do staff and contractors' extensive networks of relationships with firms in the industrial sector, which they pursue to encourage customer participation.

3. Program procedures have several times undermined customer-ATAC relationships.

The RFP for ATACs specified that ATACs were expected to market the program. Yet all four interviewed ATACs who had worked to interest customers in the program and then referred the customers to a PDC had lost at least one customer in the process. At stake for the ATAC is not simply the facility study to be conducted, but the ongoing relationship with a customer that might lead to numerous jobs over time. At stake for the Production Efficiency program is the loss of marketing opportunities and resources to the extent that ATACs hesitate to bring customers to the program.

4. PDCs and ATACs request greater technical guidance.

The PDCs and ATACs request greater technical guidance than was forthcoming from the PMC Technical Manager. They would like guidance on the assumptions that underlie project benefits and costs, such as measure lives, customer energy costs and non-energy benefits.

5. The Energy Trust's decision-making and contracting processes do not keep pace with the needs of the program and result in the undermining of program staff authority and program stability.

The Energy Trust's decision-making, legal and contracting processes move slowly, while the Production Efficiency program—launched as a concept not fully fleshed out—acquired over 100,000,000 kWh in savings within six months of its start. In the absence of final decisions produced by the formal processes, the Energy Trust Program Manager kept the program moving by improvising decisions and revising them as the formal process brought new views to light. As a consequence of this ad hoc approach, the authority of the Energy Trust and PMC program managers to implement the Production Efficiency program is weakened, contractors experience program instability, and the program is vulnerable to customers being adversely affected by the ongoing changes.

- 6. Program contractors report they are struggling to make appropriate decisions in the absence of clear direction from the Energy Trust regarding the numerous program goals and distinguishing features that are in tension with each other.**

Production Efficiency program goals and features are in tension with each other and the Energy Trust has yet to provide its contractors with clear guidance for negotiating the conflicts. One example of this are the goals to acquire a large quantity of cost-effective savings and to serve smaller and under-served customers; the latter sector has smaller, less cost-effective savings and reaching them requires higher marketing and administrative expenditures than needed for other customers. Another example: rapid, low-cost program delivery requires that projects be identified as efficiently and inexpensively as possible, whereas high confidence in program savings requires high analytical precision in identifying projects and verifying the performance of installed equipment, both of which are expensive and time consuming. Program contractors report they are struggling to make appropriate decisions in the absence of clear direction from the Energy Trust.

RECOMMENDATIONS

- 1. Congratulate program staff and contractors for a job well done.**
- 2. Clarify for ATACs the current process for selecting an ATAC for a project. Continue to investigate the experiences of ATACs in marketing the program and bringing customers in.**

Clarify and communicate to ATACs how the decision is made to award a project to an ATAC. Assess, during the program's second year, the number of customers ATACs believe they have brought to the program and lost. For each claim, investigate the ATAC's support for the claim and the circumstances from the perspectives of the PDC and PMC.

- 3. Provide increased technical guidance for PDCs and ATACs.**

Work with PDCs to establish additional technical parameters and guidelines for evaluating project costs and benefits. The parameters and guidelines will need to balance consistency with flexibility, as each industrial production process is unique.

4. Conduct a preliminary investigation of program impacts.

The Energy Trust should evaluate the first one or two dozen projects to be completed by the program to ensure that the data necessary to support a comprehensive impact evaluation are available. The investigation should address the desirability of activities to be conducted at the completion of the project, such as project commissioning and final savings verification audit.

5. Seek ways to expedite contracts, communications with the market and program policy decisions.

The Energy Trust is committed to its open decision-making process, yet it needs to recognize that the current approach of postponing decisions or making ad hoc judgments to fill the void during process development is detrimental to the program. The Energy Trust needs to develop a decision support system that will meet the program's need for rapid response times for contracts, market communications and policies.

6. Prepare for potential participants written materials detailing the steps for program participation.

Prepare a brochure describing the steps for program participation, or perhaps a FAQ (frequently asked questions) leaflet. The information could identify the forms in use and the turn-around time the customer might expect for activities conducted by ATACs and PDCs.

7. Give clear guidance to contractors as to how to pursue conflicting objectives.

Were program budgets and timeframes infinitely expandable, the Energy Trust would not need to set priorities among the program objectives. However, contractors are asking what customers they should be seeking, whether they should pursue very large projects, what level of technical rigor they should be ensuring, and so on. The Energy Trust needs to recognize the tensions within the innovative Production Efficiency program—recognizing, too, that the program breaks new ground (according to many contacts)—and that the program's ultimate success hinges on the clarity of the instructions that the program's many competent contractors receive. The Energy Trust should actively debate the implications of program features that are in tension with each other and give clear guidance to contractors on how to prioritize efforts when the contractors are faced with tough decisions.

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1. INTRODUCTION: PROGRAM STATUS AND BACKGROUND

The Energy Trust of Oregon, Inc., was incorporated as an Oregon nonprofit public benefit corporation in March 2001, to fulfill a mandate to invest “public purposes funding” for new energy conservation, for the above-market costs of new renewable energy resources, and to support new market transformation in Oregon. It receives funding from a three-percent public purpose charge to the rates of the two investor-owned utilities in the state—Pacific Power and Portland General Electric Company (PGE). The Energy Trust has responsibility to report to the Oregon Public Utilities Commission (OPUC) on how it is spending its funding and what it achieves.

The Energy Trust hired the team of Research Into Action, Inc. and MetaResource Group to perform a process evaluation of its Production Efficiency program, launched in May 2003. This report, the first, provides an assessment of the program approximately six months after launch, with the intent of facilitating continuous improvement. The interviews and surveys conducted for the evaluation were completed by the end of February 2004. Program status is current as of January 10, 2004.

This chapter is organized into three sections:

- *Program Description*—describes the program’s goals, objectives and methods.
- *Evaluation Approach*—describes the data sources and methods used in this evaluation.
- *Organization of the Report*—identifies the subsequent chapters in this report.

PROGRAM DESCRIPTION

The Production Efficiency program was launched in May 2003.¹ The primary goal of the two-year program is the acquisition of large volumes of electric savings at

¹ The program launched under the name Industrial Process Efficiency Initiative program.

1. Introduction: Program Status and Background

modest cost from a wide variety of efficiency strategies for industrial processes, including efficient municipal water and wastewater treatment and agricultural irrigation and processing. Savings will be realized by providing positive financial, energy and related benefits for participating industrial and institutional customers of Pacific Power and PGE. Both new and existing industrial manufacturing processes and process support systems are within the program's purview. More specifically, the stated program goals are to achieve:

- A significant increase in industrial electric efficiency activity,
- Low-cost savings, and
- Broad participation.

A specific program objective is to secure about 21 average megawatts (approximately 180,000,000 kWh) over an eighteen-month period, at a cost to the Energy Trust of one cent per levelized kilowatt-hour.

The program allows the inclusion of large industrial and agricultural process-change projects. Rather than only looking at equipment replacement or upgrades, Production Efficiency is open to projects involving substantial production-line changes. The inclusion of such projects significantly distinguishes the program from its predecessors operated by the electric utilities. Production efficiency projects, in contrast to those for equipment replacement, imply larger energy savings and typically have lower per-unit energy-acquisition costs. They also often have non-energy benefits that are greater, both in absolute and relative terms, than those accruing to smaller projects, and they sometimes include non-energy benefits that do not accompany smaller efforts.

Customized incentives for design, installation and materials are calculated for each project to bring the payback of energy-efficiency measures down to eighteen months for the customer, capped at 50% of measure cost. For measures contracted during 2003, there was also a special promotional incentive of an additional four cents per first year kilowatt-hour savings, with the proviso that the bonus incentives not exceed 50% of measure cost.²

Should the project's actual cost exceed its estimated costs, incentives are to be proportionately adjusted, up to a maximum of 120% of the initially offered incentive. If a participant wants to recoup a portion of project costs in excess of

² Thus total incentives were not to exceed 100% of measure costs

1. Introduction: Program Status and Background

120% of the estimated costs, they must reapply to the program in order to receive a higher incentive. Acceptance of the new application will be contingent upon the availability of funds.

The Production Efficiency program launched with an incentive cap of \$500,000 per firm, per calendar year. In November 2003, the Energy Trust's Board of Directors approved a waiver of the incentive cap on a case-by-case basis for certain extraordinarily cost-effective projects. The waiver allows an industrial facility a once-in-a-lifetime opportunity to exceed the incentive cap.

The program offers free scoping services to identify potential efficiency projects. It pays 100% of the cost for detailed technical analysis studies for prospective efforts, provided the customer agrees to initiate the project within six months of the study's completion.

The Energy Trust contracted with Aspen Systems, Inc. (Aspen) to serve as the Program Management Contractor (PMC) for the first two years of the program (through 2004), with an option to continue a third year if requested by the Trust.

The PMC oversees the program through four Program Delivery Contractors (PDCs). The terms of the PDCs' subcontracts with the PMC are for two years, renewable at the option of the Energy Trust for an additional year. With one exception, the responsibilities of the PDCs are divided geographically into Southern Oregon, Eastern Oregon, and Northwestern Oregon, including the Willamette Valley. The exception is a PDC whose responsibilities are industry-specific. That PDC is responsible for pulp and paper and primary metals facilities located anywhere in the state, and for all other wood products facilities located in Northwest Oregon.

The PMC also manages a network of Allied Technical Assistance Contractors (ATACs) who conduct detailed audits (also referred to as detailed studies and as technical analysis [TA] studies). The ATACs conduct other program-related activities as well, interfacing with the PMC and the PDCs. The ATACs are diverse in size and type. They include engineering firms, ranging from small to large, several equipment vendors, and three of the four PDCs who are also authorized to conduct TA studies.

The PMC provides overall management to the process of project identification and completion. The PDCs and ATACs market the program to customers. They assess the interest of prospective participants in efficiency programs, the customers' ability to undertake efficiency measures, and the best direction for further activities. This assessment leads to a scoping study for customers having the interest and ability to pursue an efficiency project, or the assessment may itself constitute a scoping study.

1. Introduction: Program Status and Background

The scoping study results in a recommended list of measures for further study or for immediate action.³

The program design includes the utilization of “a series of different analysis methods to ensure that technical assistance is useful, timely and cost-effective.” This design element allows the scope of TA studies to be tailored to each project, and includes pre- or short technical analysis studies paid for by the Energy Trust up to a cost of \$3,000. The emphasis of these studies is upon quick identification of projects. Such studies offer customers a risk-free introduction to the program.

If further evaluation beyond the scoping study is recommended, the PMC assigns an ATAC to perform a technical analysis study.⁴ In some cases, a third, even more detailed assessment may be required. From the studies, the PMC Technical Manager determines whether the identified projects meet the Energy Trust’s cost effectiveness criteria. He does this by using a software program designed by the Energy Trust.

After a review of the studies by the PDC and the PMC, an incentive offer for cost-effective projects is presented to the customer by the PDC. Upon the customer’s acceptance of the offer, it is signed by the PMC. If requested, the PDC will help the customer to identify qualified vendors to perform the specified equipment and measure installation and process changes.

When a project has been completed, the PDC verifies project installation and delivers the incentive payment to the customer. Throughout the process, the PDC facilitates the completion of all program-related forms and delivers them to the PMC for processing.

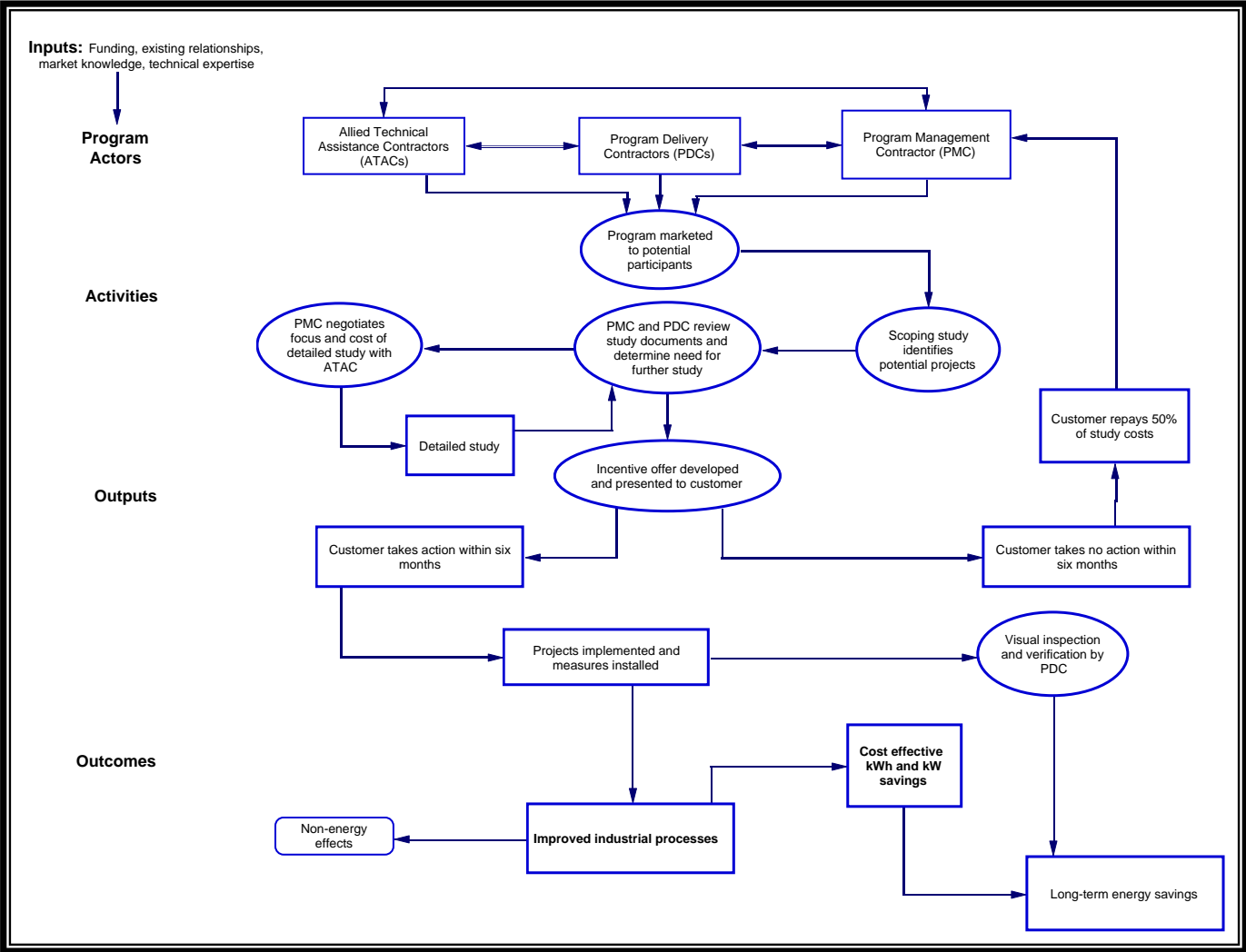
In order to bring the program online as early as possible, elements of its design were incomplete at the time it launched. To address the unfinished details, a program design team—consisting of the PDCs and representatives from the Energy Trust and the PMC—was defined in the PDCs’ Statement of Work. In practice, additional program design has continued in an informal and ad hoc manner.

Figure 1.1 provides a logic model diagram for the Production Efficiency program. It represents a simplified, somewhat idealized portrayal of the program activities that generate energy savings and other benefits.

³ A scoping study is defined in the Energy Trust’s *Board Meeting Minutes* of March 5, 2003, page 6.

⁴ A technical analysis study is defined in the Energy Trust’s *Board Meeting Minutes* of March 5, 2003, page 6.

Figure 1.1
 LOGIC MODEL FOR THE PRODUCTION EFFICIENCY PROGRAM



EVALUATION APPROACH

To evaluate the Production Efficiency program we conducted in-depth, in-person interviews with four Energy Trust staff involved in the program, three PMC staff, and staff with each of the four PDCs (a total of eight PDC staff members), and the Executive Director of Industrial Customers of Northwest Utilities. The interviews ranged, in most cases, from one to two hours in length.

In addition, we conducted telephone interviews with staff of six ATACs. The interviews asked open-ended questions and ranged from one-half hour to one hour in length. We also conducted telephone interviews with 31 staff involved in Production Efficiency projects at 28 participating firms. These interviews asked closed- and open-ended questions and typically took about ten minutes.

All interviews were conducted between December 2003 and February 2004.

Finally, we examined program documents, forms and tracking databases.

ORGANIZATION OF THE REPORT

Following this introductory chapter giving background on the program and the results of the mid-year evaluation, the report has six additional chapters:

- *Chapter 2* provides the start-up milestones and key achievements of the program and its status as of January 2004.
- *Chapter 3* discusses the program implementation activities, including the roles of the contractors delivering the program, program marketing and project development.
- *Chapter 4* discusses staff and contractors' assessment of their experiences with the program.
- *Chapter 5* discusses participants' experience.
- *Chapter 6* discusses some of the implications of the program's goals and methods.
- *Chapter 7* provides a summary of findings, as well as conclusions and recommendations based on them.

One appendix follows the body of the report and provides our interview guides for this evaluation.

2. PROGRAM START-UP MILESTONES AND STATUS AS OF JANUARY 10, 2004

Implementation of the Production Efficiency program began in May 2003. The chapter is organized into two sections, as follows:

- *Accomplishments and Milestones*—described as reported in Monthly Progress Reports submitted by the PMC to the Energy Trust.
- *Program Status as of January 2004*—described in terms of its projects, resource acquisition and use of ATACs.

ACCOMPLISHMENTS AND MILESTONES

May 1 to August 11, 2003:

- Contract between Aspen and the Energy Trust authorizing Aspen to be PMC for the Production Efficiency program was signed on July 19.
- The Program Technical Manager has hired in early May.
- Four firms were selected to serve as PDCs, from the nine firms that responded to an RFP issued in early June 2003. On August 1, 2003, the firms chosen received a standard PDC contract for their signing.
- The ATAC RFQ was posted on the Energy Trust website and in the Daily Journal of Commerce. The program ATAC Agreement was submitted for Energy Trust approval. Six ATACs were provisionally identified.
- Program design meetings were held the week of June 23-27, 2003, with Aspen, Energy Trust and PDC team members. All facets of the program were discussed, including promotional and custom incentives, scoping services, technical analysis (TA) studies, procedures, forms, certificates and marketing materials and strategies. A flow chart of program activities was developed.

2. Program Start-up Milestones and Status as of January 10, 2004

- The PMC developed, and the Energy Trust approved:
 - The implementation process, policies, forms and pricing for scoping and TA studies;
 - Custom incentive rates, rules, forms and procedures; and
 - First-year promotional incentive rates, rules, forms and procedures (an additional \$.04/kWh through December 31, 2003).
- Participant forms, procedures, tracking systems and incentive check approval and disbursement processes were developed (modified from those used for the Energy Trust's commercial programs) and approved for use.
- The Program Technical Manager assisted participants—including customers, ATACs and trade allies—with the program rules, incentives, required agreements, technical assistance and proposal review.
- The Oregon Department of Energy provided a list of all self-directed customers (consumption greater than one aMW) in the state.

August 11 to September 10, 2003:

- Three of the four firms issued PDC Agreements signed them.
- The three PDCs with signed contracts began program marketing and working with customers.
- Twenty-one firms were selected to perform as Production Efficiency ATACs. The firms received a standard ATAC contract for signing.
- Program staff met on August 22, 2003, with Pacific Power account representatives to discuss transitioning customers.
- The Program Technical Manager continued to assist customers, ATACs and trade allies, as well as giving direction to PDCs. The Program Manager reviewed proposals and studies.

September 11 to October 10, 2003:

- The fourth PDC signed its PDC Agreement.
- Fourteen firms signed Production Efficiency ATAC Agreements.

2. Program Start-up Milestones and Status as of January 10, 2004

- Program staff met on September 26, 2003, with PGE account representatives to discuss transitioning customers.

October 11 to November 10, 2003:

- A waiver of the \$500,000 incentive cap for extraordinarily cost-effective projects with high energy savings was accepted by the Energy Trust Board on November 5, 2003.

November 11 to December 10, 2003:

- The first two Production Efficiency projects were completed.

December 11 to January 10, 2003:

- The second two Production Efficiency projects were completed.
- A revised *Form 420 Incentive Funding Agreement* was developed and issued, incorporating language regarding customers who are eligible to self-direct their three-percent, public-purpose charge.

PROGRAM STATUS AS OF JANUARY 2004

Production Efficiency projects typically span a minimum of six months from project identification to installation. Table 2.1 shows that the Production Efficiency program installed four projects within six months of the Energy Trust's contract with the PMC.

Table 2.1

PRODUCTION EFFICIENCY PROJECTS INSTALLED

PERIOD ENDING:	CUMULATIVE NUMBER OF PROJECTS	CUMULATIVE ESTIMATED SAVINGS (MILLION KWH)	CUMULATIVE INCENTIVES PAID
December 10, 2003	2	0.4	\$57,000
January 10, 2004	4	1.4	\$153,000

2. Program Start-up Milestones and Status as of January 10, 2004

Table 2.2 shows the monthly progression of the program in terms of all energy savings identified—including those roughly targeted in a preliminary manner by scoping studies—and savings to which customers have committed by signing the program’s Form 420. In the first six months of the Production Efficiency program, staff and contractors preliminarily identified 210 million kWh in savings. This exceeded the program goal of 180 million kWh by the end of 2004. Customers had committed to projects estimated to yield 104 million kWh, or one-half of the goal.

Table 2.2

PRODUCTION EFFICIENCY SAVINGS: PRELIMINARILY IDENTIFIED AND COMMITTED

PERIOD ENDING:	NEW SAVINGS IDENTIFIED—PRELIMINARY ESTIMATES (MILLION KWH)	SAVINGS FROM NEW CUSTOMER COMMITMENTS (MILLION KWH)	INCENTIVES FOR NEW CUSTOMER COMMITMENTS
August 11, 2003	110.0	2.3	\$425,000
September 10, 2003	--	--	--
October 10, 2003	20.0	0.7	\$75,000
November 10, 2003	12.0	3.4	\$446,000
December 10, 2003	4.0	4.5	\$554,000
January 10, 2004	64.0	93.1	\$12,300,000
Cumulative as of January 10, 2004	210.0	104.0	\$13,800,000

Tables 2.3 and 2.4 describe the identified savings by the customer’s industrial sector and process involved. One hundred twenty-four projects have been identified at 78 different firms. Projects for customers in the wood processing, general manufacturing and high tech sectors comprise 91 of the 124 identified (73%), and contributed 32% of the identified energy savings. Four projects in the pulp and paper industry dominate the savings identified to date, comprising 64% of the total.

Table 2.3
IDENTIFIED PRODUCTION EFFICIENCY PROJECTS BY INDUSTRY (AS OF 1/21//04)

INDUSTRY	NUMBER OF PROJECTS	PRELIMINARY ENERGY SAVINGS IDENTIFIED (MILLION KWH)
Agricultural	2	0.5
Municipal	7	3.7
Distribution	1	0.1
Food Processing	11	2.0
General Manufacturing	25	3.9
High Tech	19	11.6
Metals	8	2.3
Pulp & Paper	4	134.6
Wood Processing	47	52.4
Total Projects	124	210.9
Unique Firms	78	210.9

The four projects identified in the pulp and paper sector affect the firms' primary process (see Table 2.4). The processes with the next highest quantity of savings preliminarily identified are compressed air, HVAC and pneumatic conveying.

2. Program Start-up Milestones and Status as of January 10, 2004

Table 2.4
IDENTIFIED PRODUCTION EFFICIENCY PROJECTS BY PROCESS (AS OF 1/21/04)

PROCESS	NUMBER OF PROJECTS	PRELIMINARY ENERGY SAVINGS IDENTIFIED (MILLION KWH)
Compressed Air	41	11.1
Fresh Water and Wastewater	7	3.6
HVAC	13	10.2
Hydraulics	4	3.1
Pneumatic Conveying	14	9.6
Primary Process	16	163.8
Pumping	1	0.1
Refrigeration	9	2.3
Secondary Process	19	7.0
Total	124	210.9

Table 2.5 compares the proportion of program savings with the proportion of Pacific Northwest industrial energy consumption by industry. The comparison is approximate only, as we matched the industries based on the category name, not SIC code.

2. Program Start-up Milestones and Status as of January 10, 2004

Table 2.5
IDENTIFIED PRODUCTION EFFICIENCY PROJECTS BY INDUSTRY (AS OF 1/21/04)

INDUSTRY	PERCENT OF TOTAL PACIFIC NORTHWEST INDUSTRIAL AMW (2005 FORECAST) ¹	PERCENT OF PROGRAM ENERGY SAVINGS TOTAL
High Tech	6%	6%
Wood Processing	8%	25%
Metals ²	9%	1%
Food Processing	10%	1%
General Manufacturing ³	14%	2%
Pulp & Paper	24%	64%
Other ⁴	27%	2%

¹ From *Characterization of Pacific Northwest Industrial Electricity Demand*, Degens, Northwest Energy Efficiency Alliance, February 2003.

² Excludes aluminum loads.

³ Includes the transportation equipment, chemicals, fabricated metals, and rubber and plastics categories of the Degens data. The industrial classifications used by the PMC in reporting the Production Efficiency data were not identified.

⁴ Includes all other industrial categories in the Degens data. Includes agricultural, municipal and distribution categories of Production Efficiency data.

As of mid-January, 2004, 175 studies had been assigned to 13 ATACs. The funds committed to these studies totaled roughly one million dollars (see Table 2.6).

2. Program Start-up Milestones and Status as of January 10, 2004

Table 2.6
TECHNICAL ANALYSIS (TA) STUDIES ASSIGNED

PERIOD ENDING:	TA STUDIES ASSIGNED	NUMBER OF ATACS INVOLVED	FUNDS COMMITTED TO TA STUDIES
August 11, 2003	20	6	\$175,000
September 10, 2003	8	8	\$12,000
October 10, 2003	43	10	\$298,000
November 10, 2003	25	12	\$133,000
December 10, 2003	56	13	\$232,000
January 10, 2004	23	13	\$150,000
Cumulative as of January 10, 2004	175	13	\$1,000,000

The firms chosen to be Production Efficiency ATACs are of three types (Table 2.7). Three of the PDCs also function as ATACs. Firms that provide engineering and energy efficiency services comprise seven of the ATACs. Three firms that sell products were also selected by staff to be program ATACs and conduct technical studies.

2. Program Start-up Milestones and Status as of January 10, 2004

Table 2.7
 TECHNICAL ANALYSIS (TA) STUDIES ASSIGNED BY ATAC TYPE (AS OF 1/21/04)

ATAC BY TYPE	NUMBER OF STUDIES	FUNDS COMMITTED
ATAC FIRMS THAT ARE ALSO PDCs		
ATAC P1	49	\$422,037
ATAC P2	41	\$131,929
ATAC P3	6	\$10,782
ATAC FIRMS THAT SELL SERVICES		
ATAC S1	21	\$54,500
ATAC S2	19	\$27,669
ATAC S3	13	\$21,165
ATAC S4	5	\$19,897
ATAC S5	2	\$17,600
ATAC S6	1	\$5,610
ATAC S7	1	\$2,750
ATAC FIRMS THAT SELL PRODUCTS		
ATAC V1	23	\$340,417
ATAC V2	23	\$47,200
ATAC V3	5	\$8,500

2. Program Start-up Milestones and Status as of January 10, 2004

3. PROGRAM IMPLEMENTATION

This chapter describes the implementation activities and the experiences of staff and contractors for the Production Efficiency program. It is based on findings from in-depth, open-ended interviews with four Energy Trust staff, three staff members of the Program Management Contractor (PMC), all four Program Delivery Contractors (PDCs), six Allied Technical Assistance Contractors (ATACs) and the executive director of Industrial Customers of Northwest Utilities (ICNU). The ATACs include one firm that also serves as a PDC, three firms that sell engineering and design services, and two firms that sell products, as described in Table 2.7. The evaluation team conducted the interviews between December 2003 and February 2004.

The chapter is organized into three sections, as follows:

- *Getting Started*—describes the selection and roles of the PMC, PDCs and ATACs.
- *Program Marketing*—describes the marketing activities and responsibilities of the Energy Trust, the PMC, the PDCs and the ATACs.
- *Project Development*—describes the process through which a customer goes to participate in the program.

GETTING STARTED

Selection and Role of PMC

To select the PMC for the program, the Energy Trust developed an RFP. According to the RFP, the PMC:

...shall manage the Program in a way that will meet the energy savings goal by providing a program that offers design assistance, facility scoping services, technical analysis studies, operations and maintenance training and incentives for measure installation in new and existing industrial processes and systems.

The PMC was instructed to deliver the program via PDCs, whose services were to be procured by the PMC through competitive bidding. In addition to program implementation, the PMCs' other responsibilities according to the RFP are to:

3. Program Implementation

- Provide oversight management of the PDCs' design, delivery and implementation management activities;
- Work with the PDCs and trade allies to manage the pace of marketing and develop marketing materials in coordination with the Energy Trust;
- Assist vendors, engineering firms and contractors to integrate incentive offers with their products and services;
- Assign and contract for technical analysis studies;
- Process incentives and disburse checks;
- Develop and maintain a system for tracking projects and report their progress monthly;
- Ensure that the program stays within budget; and
- Contract for commissioning oversight for large projects.

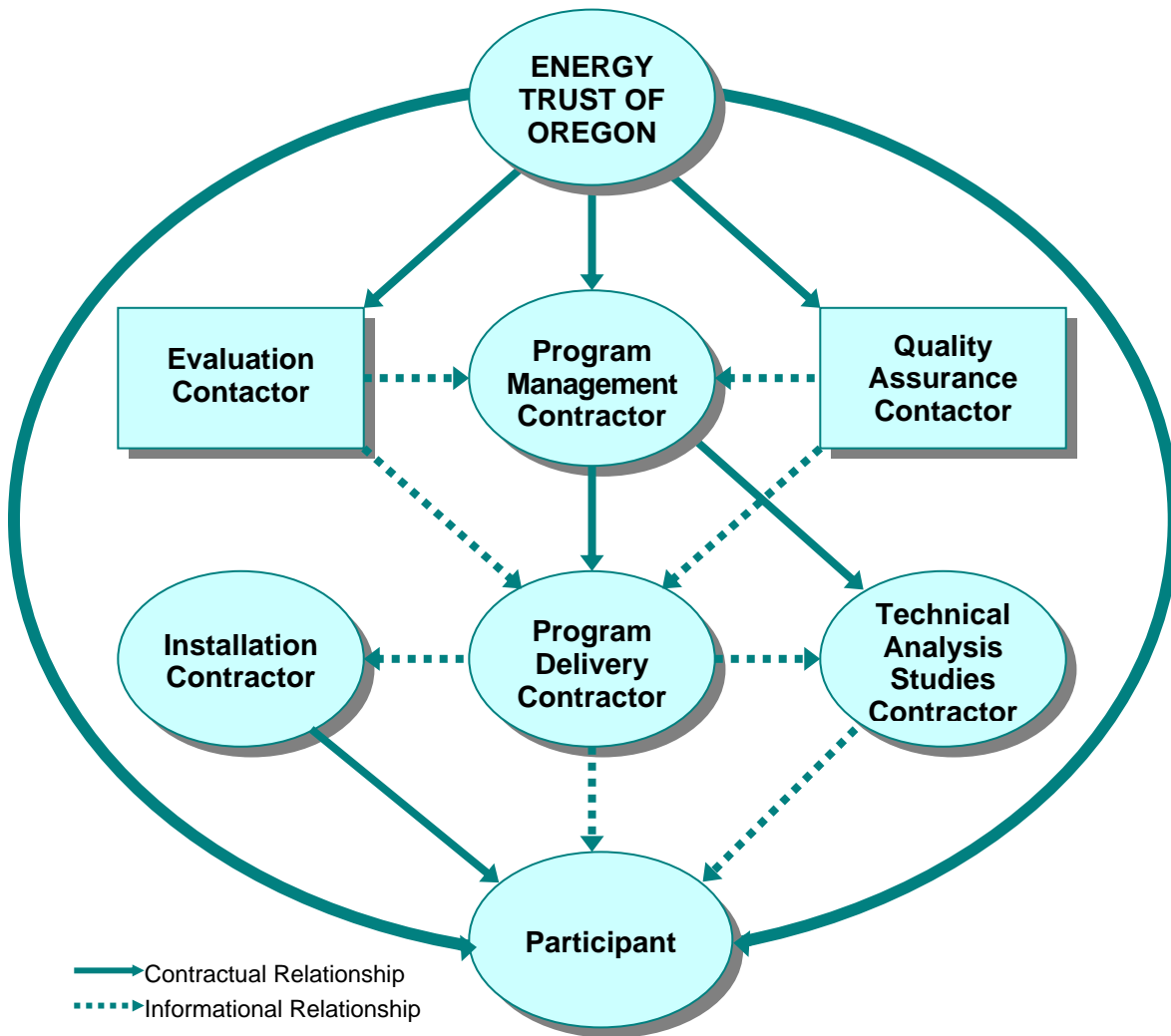
However, regarding the latter duty—contract for commissioning oversight—according to Energy Trust staff, the program no longer contains a commissioning component. Instead, it assumes that industrial customers have sufficient self-interest in commissioning that they will undertake it on their own initiative.

Because “speed to market for this program [was] critical,” and in order to streamline program marketing and administrative services, the Energy Trust offered Aspen (who was already managing the Trust’s Building Efficiency program) the opportunity to submit a proposal to be the PMC without competitive bidding. It accepted and the Energy Trust signed a contract with Aspen to serve as the PMC for the Production Efficiency program on July 19, 2003.

The PMC Production Efficiency team consists of one full-time staff member—the Production Efficiency Technical Manager—supported by three other staff members, who also support the Building Efficiency program. These staff members include the manager of the PMC office, who is the General Manager of both programs. The PMCs’ Operations Manager also supports the program by tracking program data and monitoring program status, monitoring contract compliance, and developing invoices and overseeing the invoicing process. The Operations Manager is “the numbers person” for program implementation. The third staff member is the Administrative Coordinator, who provides administrative support to both programs and to the PMC office generally.

On the whole, the Program Technical Manager is responsible for the activities outlined in the Trust’s RFP. The other three staff support him. Figure 3.1, based on a figure in the RFP, diagrammatically sets forth the relationships of the parties in this program.

Figure 3.1
THE PRODUCTION EFFICIENCY PROGRAM ACTORS



The Program Technical Manager joined the Production Efficiency program at its outset in early May. He conducts the following activities on an ongoing basis:

3. Program Implementation

- Manages the contracts with the four PDCs, providing direction and feedback and reviewing their monthly status reporting;
- Manages the contracts with the ATACs, providing direction and feedback and reviewing their monthly status reporting;
- Reviews project scoping studies, determines whether a follow-up study is warranted, develops the scope of a follow-up study, selects an ATAC from whom to request a study proposal, reviews the ATAC's proposal to conduct the study and negotiates scope and price, and contracts with the ATAC to conduct the study;⁵
- Reviews technical studies for accuracy and effective communication style, providing feedback and direction to the ATAC until objectives of the study have been met;⁶
- Signs incentive offers (Form 420);⁷ and
- Meets with customers on-site and by phone to discuss the program and their efficiency projects.

In addition to these activities, the Technical Manager conducted a number of tasks between his hiring in early May and the middle of October when all four PDCs and fifteen ATACs had signed contracts to implement the program. These tasks included designing the program, establishing program procedures and requirements, marketing to customers, functioning as a PDC, and, in some cases, working with vendors.

In the course of performing these tasks, the PMC's Technical Manager earned high marks from others involved in the program. The words used by the PDCs and ATACs to describe the Technical Manager paint a picture of an effective administrator. He was described as being "right on with every comment," "demanding in a positive way," and as having "a can-do attitude." In other

⁵ In an eight-month period ending January 10, 2004, the Technical Manager had contracted for 175 studies with 13 ATACs.

⁶ In eight months, the Technical Manager provided oversight to one million dollars in engineering studies (the total price of the 175 studies).

⁷ In eight months, the Technical Manager signed Form 420s for 104 projects, with about 70 customers, to acquire 211 million kilowatt hours for \$13,800,000 in incentives. In most cases, the PDCs calculate project cost-effectiveness and incentives; in some cases these steps are done by ATACs; and in a few cases the Technical Manager does the calculations.

comments, he was said to be “decisive,” “supportive,” “enthusiastic,” “motivated,” “responsive” and “terrific.” According to those interviewed, his only failing seems to be that he is unable to clone himself.

Selection and Role of PDCs

As originally conceived, the program was to have six PDCs organized geographically: three PDCs for Northwest Oregon, two for Southern Oregon (Bend to the coast, south of Eugene), and one for Eastern Oregon, excluding the territory served by Idaho Power. Nine firms submitted responses to the RFP for PDCs. A team comprised of the PMC’s Program Manager and Technical Manager, the Trust’s Program Manager, and the Executive Director of Industrial Customers of Northwest Utilities (ICNU) reviewed the responses and interviewed the respondents. Because of the expertise and availability of particular individuals and organizations who responded to the RFP, the PMC selected four PDCs, instead of six firms as planned.

The PMC signed contracts with two PDCs in August 2003. RHT Energy Solutions signed a contract to serve Southern Oregon; its principal is a former Pacific Power industrial account executive who served that part of the state. Harris Group also signed a contract. Because of its area of expertise, the “service territory” of the Harris Group is a variation from the original geographic division of responsibilities; Harris’ is industry-specific. Harris contracted to serve pulp and paper and primary metals facilities located anywhere in the state, and all other wood products facilities located in Northwest Oregon.

The PMC contracted with Cascade Energy Engineering in September 2003, to serve Eastern Oregon. Cascade has experience in food processing and timber products, and has an office in Walla Walla, Washington. The fourth contract went to Portland General Electric Efficiency Services Group (ESG) in October 2003, for the industrial customers in Northwest Oregon not included in the Harris Group contract. The ESG team comprises staff that had participated in delivering the utility’s energy efficiency programs.

The RFP for the PDCs describes their role in the program as providing:

- Program design assistance;
- Program marketing to high level industrial company administrative and technical management;
- Thorough facility scoping services;

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- Reviews of technical analysis studies;
- Operations and maintenance training;
- Assistance to customers with program-related paperwork; and
- Help to facilitate the disbursement of incentives for installation of efficient equipment in new and existing industrial processes and systems.

Thus, with the exceptions of “program design assistance” and “operations and maintenance training,” the PDCs’ role is comparable to that of the account executives under utility efficiency programs. The comments of Energy Trust staff support this comparison.

All of the PDCs met together with Energy Trust and PMC program staff for the first time in late June 2003, in a weeklong series of meetings to become acquainted and to continue designing the program. Part of this work was the creation of a Project Process Flow Chart for the program.

Selection and Role of ATACs

According to the RFP for the PDCs, ATACs are to provide technical analysis studies (also known as short studies, pre-studies and detailed studies) of customers’ prospective projects. These studies are to be provided under subcontract to Aspen. As of December 31, 2003, Aspen had contracted with fifteen firms to serve as ATACs. The ATAC contracts were let throughout the fall of 2003. The ATACs vary greatly in size and background, and include one- or two-man engineering firms, large engineering firms, equipment vendors and three of the four PDCs.

According to the program design, the PMC contracts with the ATACs, negotiates the scope of, and price to be paid for the technical analysis studies, accepts the studies and pays for them. The relationship between the PDC and the ATAC is informational. In practice, however, the PDCs—to a greater or lesser extent—review the technical studies and may ask the ATACs to revise them. One ATAC made the comment that this arrangement of management without a contractual relationship seems “awkward” at times.

Contracting Processes

Negotiating contracts with the PDCs took from two to three months. The PDCs characterized the contracting process as painful and frustrating. To move the

program forward in a timely way, three of the PDCs began work before they signed their contracts with Aspen.

The length of the process resulted from two principal circumstances, according to the PDCs. One of those circumstances was the number of parties participating in the negotiations. While ostensibly a contract between the PMC and the PDCs, the contract terms were subject to modification and review by the Energy Trust, as well as by the two parties to the contract.

The other circumstance ascribed by one PDC for the length of their contracting process was their own experience with and wariness of liability issues. But even this PDC mentioned the Energy Trust's attempts to control the process were a hindrance.

PDCs and ATACs are required to carry errors and omissions insurance of at least \$2 million, an amount double that required for participation in the Building Efficiency program. One of the PDCs and three of the six interviewed ATACs considered this amount of insurance coverage to pose problems for the program or themselves.

A PDC experienced with utility programs and one ATAC observed that the insurance requirement eliminated some otherwise qualified ATACs from participation in the program.

The problem for one of the ATACs was spending a "ton of money" for the insurance in order to sign the contract with Aspen in July, and then being assigned only one short study prior to fourth quarter 2004. This ATAC believed the delay in receiving study assignments was due to the absence of a PDC in his area until that time. He mentioned further that neither PGE nor Pacific Power required such liability insurance.

Another ATAC who described having difficulty with the insurance requirement had worked in the Building Efficiency program and was, in fact, assigned his first Production Efficiency project under his Building Efficiency contract because he did not yet have a contract under the industrial program. When he was notified of the higher insurance requirement, his work under the program was suspended for at least a month, the amount of time required for him to obtain an insurance premium quote. He was required to pay an annual premium of \$10,000 for the insurance, and believes he lost \$30,000 of work during the time he was obtaining the insurance. To provide context for this issue, Table 2.7 shows that eight of the thirteen ATACs were assigned Production Efficiency studies totaling less than \$30,000 in 2003. Two

3. Program Implementation

other ATACs were assigned studies totaling less than \$55,000. The three remaining ATACs were assigned studies totaling between \$130,000 and \$425,000 in 2003.

One of the consequences of the higher insurance requirement was particularly galling for another ATAC. He brought a customer to the Production Efficiency program only to have the PDC tell the customer to find another ATAC because the one who brought in the customer did not yet have the required insurance coverage.

PROGRAM MARKETING

The Production Efficiency program is market driven and, in its broadest sense, program marketing encompasses all customer contact activities from identification of a customer through signing the form for the incentive offer. These various program marketing steps can be summarized as: 1) customer identification, 2) meeting with the customer, 3) the scoping study, 4) a short study, 5) a detailed study, and 6) the incentive offer (Form 420).

This section addresses customer identification. The next section, Project Development, addresses the steps from meeting with the customer to offering an incentive for a project.

The Energy Trust's Marketing Role

In March 2003, the Energy Trust's Board of Directors approved the program design for the Production Efficiency program. In support of program marketing, the Energy Trust itself committed to:

- Work closely with utilities;
- Encourage the Northwest Energy Efficiency Alliance (the Alliance) to experiment with placing an Energy Manager within a major industrial customer group, such as the Northwest Food Processors Association;
- Explore a variety of direct approaches to the semiconductor industry, in concert with associations, the Alliance, and the Oregon Department of Energy;
- Experiment with an *EnVINTA One-2-Five* tool that helps corporate managers establish a strategic direction for improving energy efficiency;
- Rely on technical vendors who already work with industry to provide credibility;

- Use a specific vendor if the energy user so requests, provided they are qualified and reasonably priced;
- Consider co-funding, on a three-month basis, an internal Energy Manager at one to two large industrial facilities per year; and
- Fund a demonstration of facility submetering and billing to specific departments or profit centers within a plant, as a way to create more energy management accountability within a given facility.

In addition to the specific program marketing done by the PMC, PDCs and ATACs, the Energy Trust promotes the Production Efficiency program and communicates with the public about the Energy Trust “as a whole.” The Energy Trust produces program brochures, collateral print advertisements and press releases, in addition to maintaining a website. Their Director of Communications and Marketing is assisted by an intern and press release firm.

Energy Trust staff members have produced a brochure for the Production Efficiency program. In 2003, print ads ran in *Sustainable Industries Journal*. In addition, another fifteen print ads for the related Building Efficiency program ran in publications including the *Portland Business Journal*, *Daily Journal of Commerce*, *Oregon Business Magazine*, and *High Performance Buildings (NW Construction Magazine)*.

Case studies, printed double-sided on glossy paper stock, comprise another form of collateral program marketing. The Energy Trust includes case studies in press kits and hands them out at meetings and events. Each case study is also posted on the web. In 2004, the communications director hopes to produce each month, two or three case studies drawn from examples from all of the Trust programs. As of the writing of this report, no case studies for Production Efficiency projects have been published.

The Energy Trust began working with a press release firm in the second half of 2003. One press release was issued for Production Efficiency in November 2003, and another in February 2004. In 2004, the communications director plans to issue approximately ten press releases covering Production Efficiency activities.

The communications director identifies opportunities around the state to present the Energy Trust, its mission, its programs, and its accomplishments, including Production Efficiency. Energy Trust or PMC staff made presentations at eight such meetings in 2003. The director said, “In all of our activities, we want to get the word out to the small towns as well as the cities.” The director is also informing trade allies of opportunities to make program presentations.

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The Energy Trust has joined over a dozen membership organizations active in the state that address buildings and equipment. The communication director's goals for 2004 include increasing the Energy Trust's presence in the community through speaking engagements and revising the "thank you" letter that accompanies participants' incentive checks to encourage their participation in other programs.

The PMC's Marketing Role

The Production Efficiency program design included a description of the marketing plan for the program as follows:

The [Production Efficiency] program management contractor will develop a sales force to personally market the program opportunity and benefits to customers directly through vendors, trade associations, utility customer service representatives, the Northwest Energy Efficiency Alliance, the Oregon Department of Energy, industrial trade associations, and others.

Thus, the PMC's marketing role under the Production Efficiency program includes the recruitment of a diverse sales force, as well as managing the pace of marketing, development of marketing materials and oversight of the PDC and trade ally marketing activities as described earlier.

The PDCs' Marketing Role

The PDC RFP says PDCs shall provide "program marketing to high-level industrial company administrative and technical management." Appendix B of the RFP further augments the marketing role of PDCs by saying that, with the input and oversight of the Energy Trust and the PMC, PDCs will:

- Refine the program design, including marketing materials and strategies;
- Plan and schedule promotional events;
- Market program services; and
- Develop all marketing materials including, but not limited to brochures, forms, certificates, websites, promotions, advertisements, articles, technical analysis studies, phone scripts, direct marketing by installation contractors and ATACs, etc.

In other words, PDC marketing services include all program activities having a customer-contact component or intent. In practice, however, the PDCs' marketing

activities are comparable those of utility account executives under earlier programs. The PDCs identify, contact and perform scoping studies for, and “hold the hands of,” customers through the payment of the project incentive. The handholding requires varying levels of stewardship from the PDCs and may include filling out forms, helping customer representatives to make the case for a project to the decision-makers in the organization, or merely staying in touch with the customer.

Other specific PDC marketing activities vary by PDC. Only one PDC has formally developed telephone scripts. Three of the PDCs refer to the Production Efficiency program on their websites. One of those websites includes Energy Trust forms available for downloading. The other two PDC websites provide basic information and refer the user to the Energy Trust’s web pages. Only one PDC has planned and scheduled promotional events.

As mentioned earlier, the program is designed to be market-driven. This approach has emphasized the use of existing relationships. The pre-existing relationships of each of the PDCs differed, but in every case, provided a basis for their success. One of the PDCs has existing relationships with every pulp and paper mill in the Northwest. Those relationships included, but were not limited to, having an engineer from its firm pre-assigned as a project manager to, and personally acquainted with each of those mills. The principal of another PDC had for many years been a utility account executive in the region designated as his territory. He effectively built upon the relationships established during those years by organizing “town hall” informational meetings in communities throughout his territory.

Another PDC is a utility subsidiary and had previously performed virtually the same role for its parent utility. That PDC assigned particular staff members to different customer segments, providing services responsive to the sensibilities of each of those segments. The fourth PDC’s area of expertise includes among other things, refrigeration and food processing, which are significant industries within its territory.

One of the key pre-existing relationships of each of the PDCs was their rapport with utility account executives. Throughout the process, all of the PDCs work with, and through, PGE’s and Pacific Power’s account executives. All PDCs spoke of the importance of maintaining good relationships with the utility account executives, to the benefit of both the customer and the program. The inclusion of utility account executives, ATACs and vendors in program marketing effectively carries the emphasis upon existing relationships through to all levels of contact with customers.

3. Program Implementation

The program and the parties involved in its implementation have been able to establish good relationships with the utility account executives through independent negotiations and multiple meetings with each utility, including several interventions and diligent effort by Energy Trust management.

In addition to the PDCs' activities with customers, the PMC and the Energy Trust may, at their discretion, augment or perform any of the various activities of the process detailed above.

The ATACs' Marketing Role

ATACs are a critical component of the program's marketing structure. Whether an ATAC is a vendor or an engineering firm, they use their longstanding relationships with customers to bring projects to the program. One ATAC brings all of its projects directly to the PMC and never works with a PDC. Thus, between them, that ATAC and the PMC perform the entire marketing role of a PDC.

PROJECT DEVELOPMENT

Meeting with the Customer (Scoping)

As detailed above, all four PDCs have existing relationships with many of the customers in their territory and market. In addition, they rely heavily on customers' utility account executives to provide introductions and entrée to the customer. Once introduced, PDCs set up an initial meeting with as many of the customer's decision-makers as possible. The utility account executive is typically invited and often attends these meetings.

For particularly significant projects, and as time permits, the PMC Program Technical Manager also attends these meetings. The Program Technical Manager brings not only an engineering background, but also experience in industrial management to the table. His involvement has helped to bring customers' highest level decision-makers to the meetings, so that potential process changes can be discussed directly with them.

A customer release is obtained by the PDC to allow it access to earlier studies done for the customer and to the customer's electricity billing history. The PDCs identify program opportunities through conversations with the customer, by walking through their facility with them, and by reviewing any past studies. This opportunity identification process is commonly referred to as *scoping*. To conclude

the scoping process, the PDC includes the identified opportunities in a scoping study, prepared at no cost to the customer.

In practice, the scoping function is not the exclusive domain of PDCs. All but one of the ATACs said they perform walk-throughs with clients they have introduced to the program and prepare scoping studies.

The content of scoping studies has evolved. The design team originally intended them to initiate the program participation process and narrow the purview of subsequent technical studies. The technical studies that followed would therefore be highly likely to identify cost-effective measures that the customer would want to implement. Thus, the scoping studies would focus program resources on the most promising opportunities.

As experience was gained with the program, pressure came from two directions to add an initial energy savings analysis to the scoping studies. On one side, some customers were eager for initial savings estimates to support their decision to take the next step and have a technical analysis (TA) performed. On the other side, Energy Trust staff were similarly eager for the estimates, though for a different reason (described subsequently).

Customers receive the TA for free if they initiate the project within six months of the study's completion. To request the analysis, they must commit to paying one-half of its cost if they choose not to move forward afterwards. In some cases, one-half the cost of the TA study would be on the order of one or two thousand dollars. In other cases, one-half the study cost could be in the tens of thousands of dollars. Some customers requested preliminary savings estimates from the scoping studies to provide a basis for committing to the TA study.

Energy Trust staff wanted the scoping studies to produce initial energy savings estimates so that they could plan program savings acquisition, commitments and expenditures. The Energy Trust charged the PMC with meeting savings goals and conducting program activities within budget. Projects in the industrial sector can be slow to develop and to implement. As soon as a PDC meets with a customer and offers them an opportunity to participate in the program, the customer is informally in line to receive an incentive for any approved activity. Although the Energy Trust does not make a binding commitment to pay the customer an incentive until later in the process, Energy Trust staff wanted early indicators of program savings and expenditures.

As a result of requests from customers and Energy Trust staff, the scoping studies evolved to include a preliminary estimation of energy savings.

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Technical Analysis Studies

The PDC (or ATAC) delivers the scoping study to the PMC Program Technical Manager. The Program Technical Manager reviews the study and determines whether a more detailed analysis is the appropriate next step. If so, he assigns an ATAC to perform the study, and negotiates its scope and cost with the ATAC. The PDC may recommend that the Technical Manager assign the study to a specific ATAC.

The program design team produced a flow chart of program activities delineating three stages of analysis for each project: a scoping study, a short technical analysis (TA) study, and a detailed TA study. The scoping and short studies were to provide increasing degrees of focus and specificity, and the detailed study was to provide an in-depth look at the measures the customer has indicated a willingness to pursue. As originally conceived, the short study would provide the preliminary and the detailed study would provide the final savings and cost estimates on which the customer's incentive offer would be based.

In practice, however, the study process is fluid. As stated previously, scoping studies have evolved to include preliminary savings and cost estimates in most cases, and are most often followed by either a short or a detailed TA study, as warranted by the complexity of the opportunity identified in the scoping study. On occasion, a short TA study will recommend that a more detailed TA study follow. In these cases, a project will have all three studies (scoping, short, and detailed), but in practice, this is the exception rather than the norm envisioned at the program's outset.

Also in practice, the distinction between the scoping and short studies has become blurred by the introduction into the scoping studies of preliminary savings and cost estimates. For some projects—primarily, those replacing a piece of equipment with a more efficient counterpart—only a single study is done. This single study is usually referred to as a *short study*.

Customers receive the TA study for free if, within six months of its completion, they either begin to install at least one incentivized measure or install a recommended measure with a payback of less than eighteen months—that is, a measure with a shorter payback than qualifies for program incentives. To request the study, customers must commit to paying one-half of its cost if they choose not to install any recommended measures. In some cases, one-half the cost of the TA study would be on the order of one or two thousand dollars. In other cases, one-half the study cost could be in the tens of thousands of dollars. Some customers requested preliminary

savings estimates from the scoping studies to provide a basis for committing to the TA study.

The energy savings and cost estimates provided by the technical studies are intended to be “reasonable,” not perfect. The analysis reports are to be short letters, with executive summaries that lay out the facts in support of the identified projects, namely, estimated costs, savings and incentives.

As with the scoping studies, short studies are not done exclusively by ATACs. Vendors’ studies are also accepted and used as short studies for the basis of projects. As shown in Table 2.7, among the thirteen ATACs are three firms that sell products (i.e., who are vendors). In addition, studies from at least one other vendor have been accepted.

As with the scoping and short studies, the distinction between short and detailed TA studies can also be blurry, in that there are no written guidelines specifying different objectives for the two studies or different content. In interviews with PDCs and ATACs, we heard the various studies described as pre-studies, walk-throughs, scoping studies, short studies, \$3,000 studies and detailed studies. While one ATAC mentioned that the three studies are not clearly defined, he went on to say the PMC had been “very smart” *not* to have tight boxes for studies to fit into, because every project is different. Although the terms used and the study content do not appear to be standardized, the PDCs and ATACs did not express confusion regarding the terms.⁸

In practice, program contractors appear to distinguish studies by their cost, which reflects their complexity. Short studies are often on the order of \$3,000. This price is so common that the studies are sometimes referred to as the “\$3,000 studies.” While many short (\$3,000) studies have been done, detailed studies have been performed much less frequently. One of the PDCs estimated detailed studies are done about twenty percent of the time.

PDCs and ATACs support the process of staged program studies with increasing complexity. According to both PDCs and interviewed ATACs, the emphasis on quick, focused short studies has had the effect of stimulating a large number of studies, and therefore, potential projects.

⁸ Contacts did express a desire that guidelines be developed for study content and methods. But the intent and context of these remarks was a desire that all incentivized projects, across all participants, be specified according to the same standards. These views are discussed in Chapter 4. The comments were not offered as a critique of the various terms used to describe the studies, or of the somewhat fluid distinction between “scoping,” “short” and “detailed” studies.

3. Program Implementation

The PMC Technical Manager reviews all studies. If he has any concerns, he works with the ATAC until the study meets his satisfaction. As described in the next chapter, ATACs reported varying degrees of feedback from the Technical Manager.

Studies can address an entire customer site, or they can address a single process at one location. Some customers with large or complex sites have multiple studies done of different processes. When a study describes multiple pieces of equipment or systems, each recommended action has an associated incentive. Thus, the customer has the option of installing a portion of the recommended measures.

Some TA studies include a calculation of the program incentive that will be awarded to the project. In other cases, the PMC technical manager calculates the incentive. In either case, whether the project meets the program's cost-effectiveness criteria is determined by an algorithm developed by the Energy Trust and computed by the PMC technical manager.

At the conclusion of the terminal TA study (whatever its length), the PDC is authorized to present the results to the customer and offer them an incentive to install the recommendations. The PDC chooses whether to invite the ATAC to the presentation. Typically, the PDC notifies the customer's utility account executive of the meeting and invites him or her to attend. One of the PDCs said they often do not include the ATAC, and never include the vendor, in their study presentations.

In the event that an ATAC has worked directly with the PMC on a project, the ATAC presents the study results.

Non-Energy Benefits

Non-energy benefits can be difficult or even impossible to quantify. Nonetheless, only one of the ATACs said he does not report non-energy benefits in his studies, while four of the remaining five interviewed ATACs do mention such benefits with a greater or lesser degree of specificity. One of these ATACs quantifies water and thermal energy benefits. The other ATACs quantify them only if they can do so readily. The sixth ATAC was not responsive regarding whether he includes non-energy benefits in his studies.

The PMC Program Technical Manager, PDCs and ATACs mentioned a range of non-energy benefits they have seen in projects that have come into the Production Efficiency program. The benefits include economic development issues, such as job retention, and increased revenue for local and state taxing authorities. They also include increased use of recycled waste material and increased production of

recycled products, as well as product quality improvement, air quality improvement, reduction of noise pollution, and water and labor savings.

One respondent said that during the detailed study, the analyst gives less attention to implications of the project for systems further from the core energy-efficiency effort. Yet some attention is given to the entire facility considering process changes, because when the actual design work begins, the whole picture needs to be considered in order for the project to work.

One of the reasons consideration of non-energy issues is important is that not all non-energy impacts are benign. The production-line changes encompassed by this program can raise questions about raw material availability, have implications for the logistics of material receiving and product shipping, and even diminish the quality of a facility's effluent, according to one of the PDCs.

Closing the Deal and Follow-Up

When the PDC presents the customer with the terminal TA study, the presentation includes a written offer of an incentive (Form 420). At the time the customer signs the incentive offer, program marketing in its broadest sense is concluded.

Nonetheless, the involvement of the PDCs in the project continues. When the ATAC is the vendor, the ATAC obviously continues to be involved as well. The PDC frequently develops an action plan for the project. The PDC may also assist the customer in selecting a vendor and in completing the customer's BETC application. When the project is complete, the PDC verifies measure installation (Form 440), and requests payment of the incentive to the customer.

3. Program Implementation

4. STAFF AND CONTRACTORS' ASSESSMENT OF PROGRAM EXPERIENCES

This chapter describes the subjective experiences of interviewed program staff and contractors as they participated in program implementation. It is based on findings from the same in-depth, open-ended interviews discussed in Chapter 3. These surveys include four interviews with Energy Trust staff, three with PMC staff members, four with the PDCs and six with ATACs.

The chapter is organized into four sections, as follows:

- *Marketing and Customer Relationships*—describes how the program fits with existing contractor-customer relationships.
- *Communication*—describes the communication experiences of PDCs and ATACs.
- *Program Decision Making*—describes Energy Trust and PMC staff experiences with the time required for finalizing program design and implementation decisions.
- *Program Direction*—describes issues raised by PDCs and ATACs regarding program direction, including how to prioritize among competing objectives and direction provided for technical studies.
- *Other Issues*—describes issues contacts raised about program forms and the timing of incentive payments.

MARKETING AND CUSTOMER RELATIONSHIPS

The number of customers and assigned scoping studies indicate marketing for the program has been effective. In fact, the overall effectiveness of the PDCs is substantiated by the statements of Energy Trust and PMC staff, the Executive Director of ICNU, and the PDCs themselves, all of whom said the PDCs and the PDC approach to program implementation are working well.

Nonetheless, some PDCs raised issues concerning limitations on their ability to market the program. One PDC mentioned that his inability to obtain lists of customers from the utilities has been a point of frustration. Another PDC stated

4. Staff and Contractors' Assessment of Program Experiences

that his ability to market the program has been constrained by his budget. Some PDCs expressed the opinion that program successes have not been adequately called to the attention of the media.

Perhaps of greater significance in the marketing process, four ATACs reported being concerned by their experiences of bringing customers into the program, only to subsequently lose the work. Supporting the concerns of these ATACs, all four PDCs pointed out that the playing field is not level between the ATACs who also serve as PDCs and the ATACs who do not.

The four interviewed ATACs that work with PDCs other than their own firm had experiences in which the program structure had negatively affected and, in some cases, led to severed relationships with their customers. In the words of one ATAC: “The program does not honor the experience or expertise of ATACs. For the run-of-the-mill industrial client, a disservice has been done. The relationship has been broken.”

ATACs who bring their own customers to the program face the potential loss of that customer; for customers they retain, the ATAC forfeits control over the timeliness with which their customers are served. One ATAC said he was dismayed to recently learn that a customer he had brought to a PDC four to five weeks previously had not yet heard from the PDC. Two other ATACs each reported losing a customer due to delays in receiving services from the PDCs. In addition, the ATACs reported losing customers when one they brought in was assigned to another ATAC and when a PDC did not want to pursue a project with a specific customer.

Three ATACs each described themselves as being competitors with one or more PDCs who also serve as ATACs. One ATAC noted that only one of his jobs had originated with the PDC who was his competitor and another ATAC said he had been assigned no jobs at all and had worked exclusively with customers he had brought to the program. This ATAC thought the study-assignment process should be transparent and fair. One ATAC said he now felt uncertain as to whether he would ever conduct another job in this industry in Oregon, in spite of having worked successfully in the past with several large customers that he named. Another ATAC described experiencing a “huge conflict of interest” when faced with bringing a customer to the program, knowing that the particular PDC or another ATAC might be assigned to the project.

COMMUNICATION

Communication Involving the PDCs

Three of the four PDCs had positive, sometimes glowing, comments about their relationship and communication with the Program Technical Manager. The fourth PDC described frustration with what was felt to be insufficient communication. He reported that numerous phone calls and emails had gone unanswered. This PDC attributed the lack of response to time constraints of the Technical Manager; he perceives him to be overworked.

The other PDCs similarly view the Technical Manager as having a lot of—even too many—responsibilities.

Two PDCs raised the issue of communications and noted that some of their emailed requests for clarification have gone unanswered. Both of the PDCs attributed the lack of response to the Program Technical Manager's workload. One of these PDCs expressed concern that his communication occurs primarily by telephone, because sometimes by chance he can reach the Technical Manager at his desk. Yet with no written record of the communication, the resolution of the issue becomes subject to differing recollections. Furthermore, resolutions on issues of broad concern are not subsequently communicated to the other PDCs or the ATACs.

An important aspect of PDC communication is the reporting of their activities and the status of their projects to the PMC. The Program Technical Manager said the PDCs report at least monthly. And at least one PDC reports to the Program Technical Manager every two weeks.

According to the PDCs, the Technical Manager has not requested that the PDCs use any particular reporting format, nor has he specified the information he would like to see. Consequently, each of the PDCs uses their own, unique format and database for their reporting. Some PDCs raised the concern that either additional information might be required from them later, or that they might be spending more effort in reporting than necessary.

The evaluation team reviewed each PDC's customer reporting database. The most extensive customer database was composed of two data sets: a marketing summary and a project summary. The marketing summary tracks the company name and address; total plant energy usage; contact name, title, and information; primary PDC analyst assigned; date the program was presented to the customer; site scoping date; equipment systems addressed by scoping studies; and indicators of customer interest, availability of capital, and whether BETC should be considered. The PDC's project summary tracks company name; sub-system addressed; short

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study descriptors (ATAC firm assigned to, primary PDC analyst assigned, Production Efficiency project number, status, completion date); detailed study descriptors (same as for short studies); Form 420 submit date or probability of Form 420 by end of 2003; projected savings (annual kWh and dollars); implementation cost, incentives and descriptors; and final costs, savings and incentives. This detailed customer and project tracking contrasts widely with the least detailed data set provided to the project team. The information reviewed for this PDC consisted of Production Efficiency project number, company name, project name and date the Form 404A was signed.

Regarding another bottom-up communication issue, PDCs mentioned they have not been asked for feedback or suggestions about how any program processes might be made more efficient or effective.

The PDCs worked together during the last week in June as part of the program design team. Two PDCs work with each other on a project when one of the PDCs is serving as the project's ATAC. One PDC with staff who had worked for a utility was instrumental in helping another PDC obtain customer prospect names from that utility. However, the PDCs reported that they had not met as a group since June, nor do they have joint conference calls or through any other methods share "lessons learned" with each other.

One PDC expressed the desirability of a meeting (or periodic meetings) attended by both PDCs and ATACs in order to learn from each other's experience.

Communication Involving the ATACs

Only one of the six interviewed ATACs reported much communication with the Program Technical Manager, citing a very close communication and a strong working relationship: "He is thorough and demanding in a very positive way." This ATAC does not work with any PDCs; the Technical Manager and the ATAC together take the role of the PDC for this ATAC's work. He reported that when the program first launched, he received a great deal of attention from both the PMC and the Energy Trust Program Manager: "I'd never had so much attention from a program before."

Three of the remaining five interviewed ATACs said they have not had much communication with, or in their words, feedback from the Program Technical Manager. One ATAC reported there had been no meeting between the PMC and the ATACs to tell the ATACs how to proceed.

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The ATACs who identified a cause for their limited communication with the Program Technical Manager attributed it to understaffing at the PMC. Several ATACs were quick to say that they thought the Technical Manager was truly an asset for the program, underscoring their sense that the problem is systemic and not related to individual competence.

Interview contacts reported virtually no communication among the ATACs as a group. The few exceptions occur between ATACs who were already acquaintances, and when a customer has a previous study conducted by a consultant who is also a program ATAC, but is not the ATAC working with the customer for Production Efficiency.

PROGRAM DECISION-MAKING

Program staff of both the Energy Trust and the PMC described frustration with the length of time required to finalize program design and implementation decisions. The Energy Trust Program Manager understood that the Trust's commitment to an open decision-making process resulted in a lengthy process.

As an example, the PDCs and ATACs were already talking with customers about the program before the Energy Trust clarified whether, and under what conditions, self-direct customers and, as a separate issue, self-generation customers could participate. The Energy Trust specified a final policy for these customers at the end of 2003—the end of the period governed by the kicker to accelerate participation.

The Energy Trust Program Manager described the process and the delay: “A private utility would not have a public decision process and would not take three months to decide if self generators could participate in its program. A utility would decide in one or two weeks. But we at the Energy Trust talk to all the stakeholders, show our ideas to the Conservation Advisory Council (CAC), then the Policy Committee, then our Board. We drafted a self-generation policy, and bounced it off the Policy Committee twice, I think. We talked about it at the CAC meeting maybe three times. It was a three-month process to come up with something that was both politically acceptable and doable.”

Perhaps because of the public process, Energy Trust and PMC program staff describe the Energy Trust's administrative staff—particularly its contracts staff and legal counsel—as moving slowly. Program staff report contract negotiations between the Energy Trust and the PMC proceed slowly, both for the initial program contract and contract modifications.

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The program design and the Energy Trust's contract with the PMC both call for the PMC to contract with the PDCs and ATACs. Yet the Energy Trust's legal counsel required that it approve these contracts; thus, the Energy Trust was a key party to their negotiation. Some interviewed PDCs and ATACs held the opinion that the Energy Trust's involvement in their contract with the PMC was inappropriate. And in some cases, Energy Trust involvement led directly to delays in contractors coming on board. The program experienced some disruption as one PDC started two months after the other three; two of six interviewed ATACs said they experienced financial losses as a result of the protracted contracting process.

The protracted deliberations of the Energy Trust's contract and legal staff also slowed program delivery by delaying the development of program forms. Consider an example provided by the Energy Trust's Program Manager: "The Board passed a policy before the program launched that did not embody a lot of thought about ease of administration. Our first challenge was to get this policy into our customer participation forms. It was a ten-week-plus effort. Maybe even twelve weeks. It was just ugly."

PROGRAM DIRECTION

Prioritizing Competing Program Objectives

Three of the PDCs stated they lacked a clear understanding of how they should prioritize competing program objectives. They are uncertain whether they should focus primarily on acquiring energy savings to meet the program goal or whether they should focus on serving underserved markets, typically rural and smaller industrial firms. Their contracts include both objectives; they have been given no performance metrics to meet. Each PDC achieves its own balance between these objectives.

Establishing Technical Standards

During the program's first six months, it had no written guidelines or standards governing the technical analyses or TA reports. The findings presented here discuss PDCs' and ATACs' experiences with and reactions to this situation.⁹

⁹ Subsequent to the interviews reported on here, however, the PMC began the process of establishing technical guidelines or standards. Most interviewed contacts associated the limited technical guidance available to them with understaffing on the part of the PMC. Many contacts also mentioned they felt PMC staff resources

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In this section, we report the experiences of PDCs and ATACs in order to guide the PMC as it increases the program's technical support.

During the program's first six months, when the PDCs needed guidance they would phone or email the Technical Manager. A response was not always forthcoming, as described in the section on communication, above.

Two of the PDCs expressed significant concerns with this situation. While agreeing that every project is unique and that TA studies should not be placed in a straightjacket of conformity, nonetheless the PDCs strongly believed the TA methods and reports needed greater consistency. These PDCs were concerned that that different studies might use, for example, different measure-life estimates for the same equipment, different energy rates, different treatment of demand charges, different approaches to non-energy benefits, and so on. In addition, the PDCs were concerned the information reported across studies differs, with assumptions and methods identified and supported in some studies, but not in others.

One of the PDCs who was not concerned with analytical consistency across studies thought the issue was, instead, a virtue—it offered program flexibility. He acknowledged, however, that flexibility has the downside of uncertainty. In discussing the issue of study consistency, the two PDCs that did not perceive a problem both expressed the view that the program as implemented is very simple, which they believe is another important virtue.

The evaluation interviews with ATACs asked contacts what guidance they had received on issues like measure lives, description of peak savings or other technical details of the studies. Four of the six interviewed ATACs said that they had received little in the way of technical guidance concerning their analyses or reports; at least one ATAC had asked for guidance he had not received. Two of the ATACs volunteered their opinion that the program was understaffed and the lack of established technical procedures is one of the casualties of understaffing.

Nor did the interviewed ATACs report receiving much technical guidance from the PDCs. The ATACs reported that the various PDCs have different standards. Three ATACs reported having received some guidance, all from the same PDC. In the words of one of these ATACs, the comments of other PDC's concerned mostly report grammar.

were further strained by responding to the increase in program participation occasioned by the kicker, which was offered while program procedures were still under development. The PMC began increasing its technical support for the program after the kicker expired.

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While the ATACs reported they lacked technical guidance, one ATAC made it clear that he was not in favor of a standardized study format. “Real world differences” between projects necessitate, in his view, a flexible approach. This comment was spontaneously offered; the interview did not seek opinions on the desirability of a standardized report. However, it is the sense of the evaluation team that most, perhaps all, of the ATACs would agree with this position.

Only one of the ATACs reported the quality assurance approach his firm used. This ATAC said his firm estimates the outcomes of projects through several different analytical approaches and compares the results to ensure the study’s reasonableness. (One firm, interviewed on its role as a PDC, yet also working as an ATAC, described a consistent internal peer review process for its TA studies.)

The following summarizes the responses of the six interviewed ATACs to questions about their specific analytical methods. Unless otherwise indicated, each phrase was offered by one contact. Some contacts offered more than one comment.

Equipment Measure Life:

- Obtains estimates from industry data and vendors
- Usually used 20 to 25 years, based on his experience and depreciable tax life—but also depends on customer’s application
- Most studies done on their own equipment (ATAC is a vendor) and company has 50 years of experience to base estimates on
- Has asked PMC for, but has not received, guidance
- Program is not aligned with BETC measure-life criteria

Energy Rates Used:

- Energy price forecasts from 20-year modeling
- Customer’s current rate without demand charge
- PDC-provided rate schedule
- Depends on what PDC specifies
- Derived from customer’s billing history

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- Three different rates—customer's rate, customer's average melded rate (includes demand charge), and energy charge
- Determining tariffs is a challenge—firm has specialized staff to do this

Demand Charge:

- Sometimes used (two ATACs)
- Not used at PDC's request
- Incremental to analysis—not used in models for customer

Customer Billing History:

- Used to determine customer's rate schedule (four ATACs)
- Look at consumption of key components
- Look to determine if self-directed; usually doesn't use (two ATACs).

Determining Equipment Usage:

- Monitors customer's equipment (six ATACs)
- Monitors for two weeks and verifies results with customer
- Customer records (two ATACs)
- Talks with production manager and uses models for erratic equipment use

Basis for Cost Estimates:

- Experience
- Customer provides
- Quotes from vendors, add freight estimate, assume install at 20% of equipment cost

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Non-Energy Benefits:

- Considers non-energy benefits (six ATACs)
- Quantifies benefits—projects with relatively long payback from energy savings are accepted based on these
- Does not quantify benefits because there is no incentive for them
- Quantifies water and thermal energy savings

Modeling:

- Models system performance and energy price forecasts
- Uses models to determine equipment usage patterns
- Uses models for expected equipment lifetimes

Vendor Studies

The two PDCs raising these issues also felt that the program had insufficient checks in place for TA studies conducted by vendors that serve as ATACs. They believe that vendors often are not experts in energy efficiency or in the estimation of energy savings from equipment and process changes. In contrast, the two other PDCs were not critical of the work of vendor ATACs; they expressed the opinion that the role of vendors has benefits, including increasing the efficiency of program delivery.¹⁰

Verification of Savings

A final element in the views expressed by PDCs on study consistency concerns the verification of project savings, from both a program acquisition perspective and from the customer's viewpoint of assured savings. Two of the PDCs were strongly concerned about both program acquisition and customer assurance of savings. The

¹⁰ One participant of the thirty interviewed for this evaluation (see Chapter 4) made a comment directly relevant to this issue. All participants were asked to name the parties they worked with who represented the program. One participant responded, "We worked with [a PDC]. They did a good job. The study was done by [a vendor not on the ATAC list]. They are providing the system and they did the engineering work. That made it very easy for us. We had 'one stop shopping', so to speak."

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other two PDCs did not share these views. The latter PDCs were of the opinion that the program is delivering good projects and customer satisfaction does not hinge on the exact savings generated.¹¹

The PMC's Program Technical Manager identified the lack of a post-installation verification audit as one of the Production Efficiency program's weaknesses. Instead of a verification audit, a program representative (typically the PDC) visually inspects the project to ensure the installation of incentivized equipment. The initial program design, as described in the RFP soliciting PDCs, called for the commissioning of Production Efficiency projects. The Energy Trust's Program Manager explained that the program will not include a commissioning step because industrial customers commission all equipment they are bringing on line for the first time in order to ensure the success of the production line.

OTHER ISSUES

Program Forms

The Energy Trust made changes to the program's forms during its first months. Those changes have been problematic for program marketing. One PDC described the form changes as creating more work; two others spoke of the uncertainty form changes create for customers.

According to those delivering the program, changes to the incentive funding agreement (Form 420) have occasioned delays and created uncertainty among customers about whether further changes will occur. One PDC observed it would be helpful to have a single source, such as a website, that would have up-to-date forms available. Another PDC commented on the redundancy of the Customer Information form (Form 400) and the Energy Information Release form (Form 410).

A clarification of the program policy for self-directed customers led in late 2003 to the creation of a new form (Form 401) whereby a customer certifies whether it is a public purpose contributor or a self-directing entity. The policy offers customers

¹¹ One participant of the thirty interviewed for this evaluation (see Chapter 4) made a comment directly relevant to this issue. All participants were asked if they felt they understand the basis of the estimated energy savings, and whether they felt comfortable with the savings and project cost estimates. One interviewed participant had begun project installation and reported that costs were coming in higher than estimated. This customer committed to the project in time to receive the kicker. He now worries that project costs will exceed the 20% overrun limit that the program automatically covers. If costs do exceed this limit, the customer will face the choice of covering the costs in excess of 20% without an additional incentive increment, or re-applying to the program and (he fears) losing the kicker.

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with the option to self-direct two choices for program participation. One choice offers a full program on the condition that the customer relinquishes its self-direct option. The other choice allows the customer to retain its eligibility for self-direction and receive one-half the benefits of the standard program (that is, 50% of the study cost and 50% of the incentives). In the second option, the self-direct customer cannot “double dip” by seeking self-direct funds for the same project it conducted under Production Efficiency. Form 401 requires the customer to declare its status and to indicate it understands the financial consequences of breaking its commitment—a repayment of a prorated portion of program monies received.

The late introduction of Form 401 was problematic. The PDCs needed to return to any self-direct customers they had been working with, explain the new policy, and have them complete and sign the form.

In addition, the self-direction policy complicates program marketing by requiring PDCs and ATACs to begin their sales call with a clarification of the customer's self-direct status. This clarification is needed close to the outset, since the program benefits are half as large for customers continuing under self-direction than they are for customers joining the group of public purchase contributors. So rather than starting the sales call with an invitation to participate in a win-win program, the sales call starts with a message to the effect of: “I've got a great offer for you. But wait, we need to first clarify something because I can only offer you half as much if you retain self-direction. And, as an aside, if you go for the full amount and then later back out, you'll have to pay back some of what we give you.” Thus, the sales team needs to skillfully work with the issue to maintain the momentum of the sales call. Furthermore, the policy requires that the issue be addressed with all customers who can potentially self-direct (that is, loads greater than one average megawatt), not simply customers who are currently registered with the Oregon Department of Energy to self-direct.

Timing of Incentive Payment

One ATAC noted a concern about the timing of the incentive payment that he believes is a problem for installation contractors. The incentive payment is made after an entire project is completed. Sometimes contractors carry the project as debt for its entire duration, which can be twelve months or more for industrial projects. This debt load can be burdensome for the contractor, especially smaller ones. This ATAC believes that, over time, the payment of the entire incentive at the conclusion of the project will reduce the number of projects generated from small contractors, which he views as a significant issue.

5. PARTICIPANT INTERVIEWS

To assess how well the Production Efficiency program’s delivery strategy is working from the perspective of participating industrial end-users, we contacted a sample of program participants and interviewed them about their experience. We designed an instrument for the interviews that covered the participants’ experience with program representatives and processes, their understanding of and confidence in the energy savings estimates and other indicators of overall program effectiveness. The instrument was intentionally designed to keep interviews brief; the average lasted about ten minutes.

Every participant did not respond to every question. For those with little direct experience with program representatives, or those with very little time, we concentrated on the larger questions about overall satisfaction, energy savings and program feedback; we passed over detailed questions on program process. In such cases, the percentages we report are based on the number of valid responses.

This chapter is organized into four sections:

- *Sample*—describes the sample of participants interviewed.
- *Program Involvement*—describes the participants’ experiences from first learning about the program to their current stage of participation.
- *Roles and Responsibilities*—describes the participants’ staff involved in project decision-making, the program representatives that worked with the participant and communication between the parties.
- *General Feedback and Suggestions*—provides participants’ overall comments about and suggestions for the program.

SAMPLE

Each of the four PDCs provided the research team with a list of approved projects, including an end-user contact for each.¹² While a few projects were complete, others

¹² We did not specifically request that the PDCs include all customers in the pipeline.

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were at various points in the program pipeline. When combined, these lists contained 54 projects and associated contacts. Because some firms had more than one project in the system, in some cases we had more than one contact at a given firm.

In order to obtain a more complete understanding of the experience of participating customers, we attempted to interview additional decision-makers on each project whenever possible. To that end, we asked each contact who else at their firm shared responsibility for making decisions about the project. Because of time constraints, we pursued additional contacts only in cases where the original contact indicated the referral had an important perspective and should be contacted.

Three additional contacts were generated from these referrals, so that we ultimately attempted to interview 57 decision-makers about the 54 projects. Between February 20 and March 2, 2004, we completed interviews with 31 contacts, or just over half of the final list of 57 names. Table 5.1 provides the disposition for these interviews.

Table 5.1
DISPOSITION

STATUS	COUNT
Completed Interviews	31
Declined	3
Attempted, Not Reached	23
Total	57

Our contact list included customers from each of the four PDCs, including Portland General Electric Energy Services Group (ESG), The Harris Group, RHT Energy Solutions and Cascade Energy Engineering. We also contacted one of the few participants not assigned to any PDC; this participant's ATAC worked directly under the PMC. Table 5.2 displays the number of potential contacts, as well as the number of completed interviews associated with each PDC.

Table 5.2
SAMPLE BY PDC

PDC	CONTACT LIST	SAMPLE
Cascade	11	7
Harris Group	11	5
ESG	15	9
RHT	19	9
No PDC (ATAC works directly with PMC)	1	1
Total	57	31

As a final step in developing the sample, we sought to consider the magnitude of each participant's involvement in the Production Efficiency program. As participants can have more than one project under the program, we summed the projected energy savings of each participant's projects to get a composite project size. We defined customers having a "large" composite project if their separate projects totaled over 1 million kWh, "medium" if their projects totaled between 300,000 and 1 million kWh, and "small" if their projects totaled less than 300,000 kWh. Table 5.3 illustrates the distribution of the sample by composite project size.

Table 5.3
SAMPLE BY PROJECT SIZE

PROJECT SIZE	COUNT
Large	11
Medium	10
Small	9
Unknown	1
Total	31

PROGRAM INVOLVEMENT

Most commonly, participants learned about the Production Efficiency program from a utility contact or representative (39% of participants; see Table 5.4). In addition, many participants reported learning of it from an equipment vendor (32%). One participant explained that he first heard about the program directly from the Energy Trust, whose contact gave him the impression the Trust and its program were “groovy” and “green,” which turned him off. His firm considered becoming a self-directed customer, but persistent “gentle prodding” from the PDC eventually changed his mind.

Table 5.4
WHERE PARTICIPANTS HEARD OF PROGRAM

SOURCE	PERCENT (N=28)
Utility Contact or Representative	39%
Vendor	32%
PDC	18%
Co-worker or Supervisor	7%
Own Research	4%

Table 5.5 shows that over half (56%) of participants reported that their organization had participated in previous efficiency programs offered through their utility. However, the Energy Efficiency program succeeded in reaching many customers who had not previously participated in their utilities’ program. These customers had, on average, small projects; while they comprise 41% of the interviewed sample, their savings comprise just 7% of the total energy savings of interviewed participants.

Table 5.5
PRIOR PROJECTS WITH UTILITY PROGRAMS

PRIOR PROJECTS	PERCENT (N=27)
With Utilities	56%
Self-Directed	4%
No Prior Projects	41%

Investment Criteria

In an open-ended format, we asked participants what criteria their organizations use for deciding whether to make capital investments in their plants. Table 5.6 shows that most participants use a form of payback analysis.

Table 5.6
CRITERIA FOR INVESTING IN PLANTS
(MULTIPLE RESPONSES)

CRITERIA	PERCENT (N=28)
Payback	57%
Varies	18%
ROI	11%
Internal Rate of Return (IRR)	11%
Depreciated Payback	4%

We asked what payback guidelines their firm uses to separate capital investments they will consider making from investments they will not consider. A minority of participants, 17%, reported the firm used no firm cut-off criteria. Forty-two percent of participants reported that their firm would consider only projects that pay for

5. Participant Interviews

themselves in eighteen months or less. An additional 33% of respondents would consider projects with paybacks as long as two years.

Table 5.7
PAYBACK REQUIRED TO CONSIDER PROJECT

CRITERIA	PERCENT (N=24)	CUMULATIVE PERCENT (N=24)
1 Year	13%	13%
18 Months	29%	42%
2 Years	33%	75%
3 Years	8%	83%
No Cutoff	17%	100%

Savings Estimates

Table 5.8 shows that the PDC presented prospective energy savings to participants in about two-thirds of cases, with ATAC consultants or vendors presenting the savings about one-third of the time.

Table 5.8
WHO PRESENTED ENERGY SAVINGS

ENTITY	PERCENT (N=28)
PDC	68%
ATAC Consultant or Vendor	32%

All participants reported that they understand the basis for the estimates of how much energy their projects will save and that they are comfortable with the

findings.¹³ When asked to elaborate on why they felt comfortable with the estimates, two-thirds of participants (67%) explained their comfort stems from the calculations, numbers and logic behind them. A typical response of this type was, “It’s basic accounting, it’s deterministic.”

One third of participants explained that their comfort with the savings estimates comes from their own involvement in generating them, or their own previous experience working with such estimates. Typical responses of this type were: “I was very involved in estimating the savings,” and “The estimate looks right based on our experience.” One such participant had this to say: “Because I had a vendor make the estimate, I wondered whether they might over-estimate savings to sell a project. But I called the vendor’s other recipients of these devices and they told me they realized the estimated savings.”

Cost Estimates

All but one participant reported being comfortable with project cost estimates. When asked to elaborate, almost half (47%) explained that their comfort was based on their own involvement in generating the figures or their own experience with such estimates. One third (33%) expressed a degree of uncertainty with the estimates, saying things like, “We won’t know for sure until we go out for bid,” and “There are risks and contingencies.” Twenty percent said they’re comfortable with the cost estimates because they have developed trust in the analysts.

Non-Energy Benefits

Most participants (83%) reported that, in addition to delivering energy savings, they expect their project to deliver benefits unrelated to energy. Table 5.9 shows that majorities of those who expected non-energy benefits expected increases in both productivity (65%) and reliability (62%) to result from their projects. Just under two thirds (64%) of participants who expected non-energy benefits reported that there was no attempt to quantify their monetary value.

¹³ One participant expressed confusion about the basis of energy efficiency savings in general. His firm had installed efficient lighting through a utility program and had actually seen an increase in energy bills after the project.

5. Participant Interviews

Table 5.9
NON-ENERGY BENEFITS EXPECTED
(MULTIPLE RESPONSES)

BENEFIT	PERCENT (N=26)
Productivity	65%
Reliability	62%
Environmental	15%
Safety	4%

Getting Management's Attention

We asked participants to speculate what was special about the current project that had gotten their management's attention (Table 5.10).

Table 5.10
WHY PROJECT GOT MANAGEMENT'S ATTENTION
(MULTIPLE RESPONSES)

FACTOR	PERCENT (N=29)
Energy Trust Incentives	55%
Savings (energy, money)	38%
Process Improvements (speed, productivity, reliability, automation, etc.)	31%
Quick Payback	24%
2003 Kicker	14%
Less Paperwork than Self-Directed	3%
Program's Level of Study/Diligence	3%
Familiar Team Members	3%

The most common theme emerging from open-ended responses to this question was that it was the incentive from the Energy Trust, with 55% of participants mentioning it. Several of these individuals specified that, in particular, it was the magnitude of the incentive that really got management’s attention. Also, two individuals reported that it was the incentive money, but particularly the fact that, as one put it, “this is *our* money through the systems benefit charge.”

ROLES AND RESPONSIBILITIES

Participant Representatives

The individuals we interviewed for this evaluation were the PDC’s main contacts at participating firms. We asked participants who else at their firm shares the responsibility to make key decisions about Production Efficiency projects. Titles of decision-makers on these projects vary widely from firm to firm. Table 5.11 shows a rough grouping of the various titles of decision-makers by level of responsibility.¹⁴ Three participants reported that they themselves are the only key decision-maker for the project.

Table 5.11
OTHER KEY DECISION MAKERS
(MULTIPLE RESPONSES)

DECISION-MAKER	PERCENT (N=28)
Senior Executives (Owner, President, CFO, Sr. VP, General Manager, Controller)	54%
Process and Department Managers	29%
Corporate Headquarters, Board of Directors	14%
Plant Staff	14%

¹⁴ The evaluation team inferred the responsibility level from the title reported. Participants did not confirm our suppositions.

5. Participant Interviews

Half of participants reported that all people at their firm who share responsibility for making project decisions were in contact with program representatives; the other half reported that some decision-makers were not in contact with program representatives. All but one of the participants who said that some decision-makers were not in contact with program representatives indicated that such contact would not have been helpful to the project. A typical comment was: “No, he’s busy. It’s my responsibility. I am the credible voice to the owner.” Other typical comments included: “Management doesn’t have time for this level of detail”; “My boss has to approve it, but it’s my job to up-sell”; and “They spoke to the right people.”

One individual reported that there was a key decision-maker that had not been in contact with program representatives, and that such contact may have been helpful. He said, “The project would benefit because ultimately the decision on capital investment is made at the corporate level, not the plant level.” Later in the interview, this individual expressed the intention to ask a representative of the PDC to come with him to present the project and its benefits to management.

Program Representatives

Participants may have dealt with a number of different individuals and firms acting under the auspices of the Production Efficiency program. In an open-ended format, we asked participants to say who they had worked with under the program (Table 5.12). All participants assigned to a PDC confirmed they had interactions with PDC staff. (One participant, not included in the table, had been assigned directly to an ATAC.)

Table 5.12
POINTS OF CONTACT WITH PROGRAM
(MULTIPLE RESPONSES)

PARTICIPANT WORKED WITH REPRESENTATIVE OF	PERCENT (N=28)
PDC	100%
PMC	36%
Vendor/ATAC	25%
Utility Contact/Representative	21%
Energy Trust	4%

Table 5.13 shows that a plurality of participants reported working with two types of program implementation firms (e.g., PDC, PMC, ATAC), with the greatest number reporting interactions with three firms. A plurality of participants worked with two individuals as representatives of the program, with the greatest number of different individuals reported as being five.

Table 5.13
NUMBER OF POINTS OF CONTACT

TYPE	1	2	3	4	5
Program Implementation Firms (n=28)	29%	57%	14%	0%	0%
Individuals (n=27)	11%	56%	15%	15%	4%

We asked participants about the appropriateness of the number of program representatives they worked with. Given the choices of “too many,” “the right amount,” and “too few,” all but one chose “the right amount,” with the remaining participant choosing “too many”. This participant said: “I don’t understand why the state has an administrator [Energy Trust], then the administrator lets a contract [Aspen], then Aspen lets a contract to [the PDC]. It’s a lot of tiers. It’s not a criticism of the individuals. But just who do I call to get results?” He later added that everyone he dealt with was helpful, but the sheer number of people involved had been confusing.

We asked participants whether they experienced any confusion with regard to their points of contact with the program. About 90% reported that the roles of the program representatives they worked with were clearly defined, that there was no duplication or contradiction in information or services provided, and that it was always clear who had authority to address a given issue (Table 5.14).

The participant noted above who felt he worked with too many program delivery firms was among those who reported there was some duplication in the information he received. He was also among those who said it was not always clear who had authority to address a given issue.

Table 5.14
EXPERIENCE WITH PROGRAM REPRESENTATIVES

QUESTION	YES	NO
Did everyone you worked with seem to have a clearly defined role?* (N=30)	93%	3%
Was there any duplication in the information or services provided? (N=24)	13%	88%
Was there any contradiction in the information or services provided? (N=24)	13%	88%
Was it always clear to you who had authority to address a given issue? (N=26)	89%	12%

* One respondent answered “yes and no,” noting that he had been brought in at the end of the project to serve as project engineer and found the process a bit confusing.

When asked if they had any other comments about the process of how program representatives worked with participants, all comments offered were positive. Many complimented the people they had worked with under the program, saying things like, “they did an excellent job,” “everybody is great and knowledgeable,” “they were flexible and accommodating,” and “we felt very comfortable with the choice of players the Trust had working for them.”

Communication

We asked participants a series of questions designed to elicit comments about overall clarity in communication between program representatives and participating industrial customers.

All participants reported that overall the program communicated clearly. However, almost half (48%) reported that there was some confusion at some point in the process. Those reporting confusion all indicated that it did not have serious effects on the project, and many participants expressed the belief that the confusion was at least partially their fault. A typical comment was, “It was just my learning curve.” Other comments were: “There is always confusion with these types of things”; “Communication was a bit unclear early on”; and “Confusion was mainly due to us trying to get things organized quickly due to the kicker.”

When asked for suggestions on how Production Efficiency could improve the process by which its representatives worked with and communicated with them, few participants could think of any suggestions to make. Two individuals reported that written materials detailing steps for participation would have been helpful had they

been made available early in the process. One of these participants suggested Production Efficiency should provide information addressing frequently-asked questions.

One individual received some misinformation regarding the “kicker” early in the process. “It hadn’t been clarified at the top [i.e., at the Energy Trust] so the subordinates didn’t have accurate information,” he said. He acknowledged that his firm had “thrown them some curve balls,” but still had this to say about the program implementers: “Information doesn’t flow as quickly or freely as it should. I wondered if Aspen is empowered enough.”

GENERAL FEEDBACK AND SUGGESTIONS

We asked participants to say what about the program is working well in their view. Table 5.15 shows that the most common theme emerging from their open-ended responses was that the people implementing Production Efficiency are its greatest asset. Many of these participants praised the PDC and PMC staff as knowledgeable, helpful and dedicated, and a few indicated that the enthusiasm of those they worked with helped move the project forward.

Table 5.15
ASPECTS OF PROGRAM THAT ARE WORKING WELL
(MULTIPLE RESPONSES)

ASPECT	PERCENT (N=24)
People Implementing Program	54%
Everything	13%
Diligence of Studies	13%
Easy/Reasonable Paperwork	13%
Pays for Studies	8%

Other participants who identified as a program strength “the people implementing the program” focused on the value of relationships with energy experts they had formed as a result of the program. One participant said: “They are a strong

5. Participant Interviews

knowledgebase to work from, helping with short-term and long-term plant management. It has been really informative. The information alone has been very valuable.” Another participant explained: “It brings industry and private specialty engineering firms together. We may not have known that [the PDC] had this expertise.”

Thirteen percent of participants volunteered the opinion that the level of detail and diligence involved with the studies makes recommendations arising from the analyses credible to management.

In addition, 13% of participants said that what is working well about the program is the reasonable paperwork involved in the process, along with the fact that the implementation of Production Efficiency is not overly bureaucratic. Some of these participants specifically contrasted the relatively streamlined nature of the program with the complicated process of becoming certified as a self-directed site, or with the process of applying to ODOE for the BETC. One such participant put it this way: “BETC is a problem – it’s typical of state and federal government. There’s no one like [the PDC] to step you through the program. All the information is there, but you have to be motivated and make it happen, and projects don’t go as smoothly. These represent two totally different ways of dealing with these things. With [the PDC] everything is positive and the negatives are dealt with. The juxtaposition is clear.”

When asked to say what is not working about the program, few participants could think of a response. Two individuals mentioned that the process had taken longer than expected, with one describing this as resulting from “typical bureaucracy.” In his responses to another question, the participant citing bureaucracy mentioned that he had experienced some confusion “figuring out what hoops to jump, which papers to send to whom,” but described this as normal and made no mention of any other difficulties.

One participant said there should be more consistency with regard to who has authority over a given issue. This was the same participant noted above who said he had dealt with “too many” program implementers, and felt the flow of information between the Energy Trust and the PMC was not sufficiently free and quick, and who wondered whether Aspen was empowered enough.

Few participants could think of anything they would change about the program. Two participants expressed a desire for it to provide better BETC support. One individual said he wished the program would allow incentives to be used for in-house labor rather than requiring bids from contractors. One wished for a greater emphasis on thermal or gas projects. One said he would like the kicker reinstated.

One would change the process to enable a partial payment of the incentive to be made available beforehand so that his firm would not have to carry the cost as a receivable for so long. Finally, one participant said that so many tiers of program implementers seems unnecessary and gives the appearance of “skimming off the top.” He felt that the overly complicated program structure might contribute to waste, and that perhaps more money than necessary is spent supporting the program apparatus.¹⁵

All but one participant reported that this program is something their firm would participate in again, and that it is something they would recommend to other industrial firms. The remaining participant expressed mixed feelings about both participating again and recommending the program to others. This was the participant noted above who had cited “typical bureaucracy” as something not working well with the program, but his responses to other questions did not reveal negative feelings about the program or any significant difficulties. Rather, he seemed to view his firm’s participation as just another item in a long list of things he has to worry about. In his words, “I just want to get this project off the books and avoid these kinds of things for a while. We have enough to do without messing around with compressors and things that are already working.”

¹⁵ This was not the same participant noted above who reported that the number of people he dealt with was “too many” and felt that the flow of information between the Energy Trust and the PMC was not sufficiently free and quick.

5. Participant Interviews

6. IMPLICATIONS OF PROGRAM GOALS AND METHODS

This chapter discusses the program from a “big picture” perspective. It has been informed by all of the interviews conducted for this evaluation, including those with Energy Trust and PMC staff, the Executive Director of Industrial Customers of Northwest Utilities, PDC and ATAC staff, and customers.

The Production Efficiency program is still under development. Although most program procedures are in place—as the program achievements and operations attest (as described in Chapters 2 and 3)—the Energy Trust and program staff report grappling with issues stemming from its success. The program goals themselves have implications for design and delivery that are as yet unresolved.

This chapter is organized into two main sections:

- *Key Program Features*—describes 15 features characteristic of the Production Efficiency program; and
- *Implications*—discusses the implications of these features for program delivery.

KEY PROGRAM FEATURES

The Production Efficiency program is distinguished by a number of key features. Most contacts identified many of these features as contrasting with those of other industrial efficiency programs with which they were familiar.

1. *Production Line Changes*: Production Efficiency seeks to reap both energy and production efficiencies. Although component upgrades to higher-efficiency units qualify for incentives, the program has the ability to address entire production lines and make, according to program staff, “wholesale changes to the way a company makes its products.” Three-quarters of interviewed participants said they expected their projects would provide non-energy benefits in addition to their electricity savings, evidence of the program’s emphasis on improving the production process.
2. *Non-Energy Benefits*: The Energy Trust considers non-energy benefits in project cost-effectiveness screening. Several contacts consider the

6. Implications of Program Goals and Methods

- attention given to non-energy benefits to be among the program's strengths.
3. *Large Incentive Budget:* Production line changes can be costly. The program was launched with a ten million dollar incentive budget.
 4. *Large Energy Savings Goal:* The Energy Trust set an eighteen-month program goal of about 180,000,000 kWh. This compares with the recent annual industrial savings goals of each of the two investor-owned utilities in Oregon of about 20,000,000 kWh (according to program staff). Production Efficiency goals are about three times as large as the two-utility total extrapolated to an eighteen-month period.
 5. *Low-Cost Energy Savings:* Production line changes have the potential to generate energy savings at a low cost as major equipment is often taken offline when the entire system is optimized. The program's energy savings goal and incentive budget compute to an average of about 5.6 cents per kWh.
 6. *Flexible Program Procedures:* No two projects are alike. The program design and methods can accommodate any project.
 7. *Non-Negotiated Incentives:* Production Efficiency pays a stated proportion of project costs up to \$500,000 in incentives. The project studies identify recommended measures and clearly state the corresponding incentive amount the program will pay for them.
 8. *Dedicated, Experienced Marketer/Facilitator For Each Project:* Each project has a project manager assigned—typically the PDC—who combines industrial marketing, technical and energy efficiency expertise. In their program contacts with customers, these staff are dedicated to the program and are not “piggy-backing” their energy efficiency role with other responsibilities.
 9. *Clear Push To Install Measures:* Project studies focus on the set of equipment the customer is most interested in improving. Study depth is approached in increments; successive studies increase in complexity when and as necessary to address the project. Studies are free to customers who go on to install one or more recommendations.
 10. *Simple Customer Participation Activities:* The program is designed to identify quickly qualifying projects for customers and to present them with easy-to-understand, decision-grade information on their efficiency

opportunities. Participation forms are intended to be simple. Program simplicity reduces participants' costs. Interviewed contacts had more divergent opinions on whether the program succeeded in its goal of simplicity than on the other program features. Nonetheless, the majority of contacts of all types thought the program was simple, which they considered to be one of its strengths. Some contacts were concerned the program was evolving to be more complex, and the forms becoming more numerous and more complicated.

11. *Continuous Program*: The Energy Trust wants to operate Production Efficiency program continuously, without customers and trade allies experiencing starts and stops. It launched the program with a budget through 2004.
12. *Rapid Savings Acquisition*: The Energy Trust seeks rapid acquisition of energy savings in support of its program expenditures.
13. *Economic Development*: The Energy Trust has a mandate for all its programs to promote economic development, such as to “create and secure Oregon jobs.”¹⁶ By offering production line changes and reducing energy operating costs, Production Efficiency is able to increase the viability of Oregon's industrial firms.
14. *Equity*: The Energy Trust has a mandate to serve all customers in its service territory, including under-served customers.
15. *Public Input*: Energy Trust activities are informed by a public process. Trust staff discuss program policy and design with the Conservation Advisory Council (CAC), a policy committee and its Board of Directors, which meets in a monthly forum open to the public.

IMPLICATIONS

The unexpected success of the program—it exceeded 2004 savings goals with projects committed to or in the pipeline by the end of 2003—has exposed the tensions inherent among the key program features. The following subsections treat issues described by the interviewed contacts.

¹⁶ Phrase taken from Energy Trust Board Resolution of November 5, 2003.

Size of Per-Participant Incentives

Several program features are consistent with very large projects, which in turn have large customer incentives. These features include: production line changes, a large energy savings goal, low-cost energy savings (in 2003, the largest projects had the lowest-cost savings) and economic development. Large projects are also consistent with non-energy benefits, both because large system changes offer substantial non-energy benefits and because their low-cost savings offset projects with more costly, but major savings that would otherwise be unacceptable.

However, a very large incentive for a single customer may be perceived as reducing the incentives available for others, which some contacts view as inconsistent with the goal of equity. Other contacts hold views of equity that are consistent with large projects. One such view is that the Energy Trust should strive for equity over a ten-year period and not be constricted to ensure equity on an ongoing basis. Another view identifies the industrial sector as the most significant under-served market, based on program spending over the past two decades. Thus, according to this view, all industrial projects promote system equity, as well as providing system benefits.

Energy Trust staff report they are struggling with the issue of maximum incentive size. Staff actions during 2003 suggest they have an unstated cap on incentives. In the words of one contact: “The Energy Trust needs to decide, do we want to do large projects and spend lots of money in one place? If not, say so, or say what the limits are. It won’t work for the program to raise expectations among industrial customers and then dash them.”

Program staff expressed concern that the program has likely already acquired most of the big, low-cost efficiency projects available. They foresee savings acquisition costs increasing over time. Other contacts expressed a contrasting view. These contacts expect the experiences of the first few participants with large projects to largely determine the willingness of other firms to undertake similar efforts. If the first experiences are positive, these contacts believe there may be several or perhaps many firms interested in large production line changes. They think the market potential is unknown because customers have not been previously offered a production efficiency program.

Uncertainty of Customer Viability

The economic development objective, which includes potentially saving industrial jobs, implies that some projects will address facilities at risk for downsizing or even closure. Production Efficiency cannot guarantee a given project will eliminate these

risks. Interviews with Energy Trust staff suggest they are grappling with this implication.

A number of interviewed contacts urged the Energy Trust to “embrace” this objective and aggressively publicize its actions to support Oregon’s industrial sector. In their view, projects for facilities that subsequently shed jobs will be more than offset by the facilities that continue with improved production; plant vulnerability only underscores the importance of the Production Efficiency program to Oregon’s industries.

At issue in particular is the increased risk of large projects, where a single customer’s viability may have an impact on the program. Without very large projects, the funding—and hence risk—is spread among more businesses. Interviewed program staff believe a more detailed examination and analysis of this issue could have a beneficial effect on the Trust decision-making process for large projects.

Incentive Kicker

Energy Trust staff added the incentive kicker in response to their perception that savings needed to be acquired rapidly—in 2003 and 2004—since program expenditures were accruing. They took this step before the program had a history of acquiring savings at a given rate. Interviewed contacts agree the kicker increased the number of projects signed in 2003.

A number of contacts also noted various problems that the kicker created. Their comments suggest the kicker is not congruent with the following program features:

1. *Low-Cost Energy Savings*;
2. *Equity*—less incentives available for others, although it was fairly offered to all participants in the window;
3. *Program Simplicity*—rules were changed; and
4. *Continuous Program*—the increase in projects stretched contractors’ resources as well as burdened customers with the need to act quickly, regardless of whether it was convenient to do so.

Many contacts noted problems because the increase in participation from the kicker occurred while program procedures were still under development. Contacts noted that the increased workload far outstripped the PMC’s project staffing resources.

6. Implications of Program Goals and Methods

PDCs and ATACs reported believing some projects got short-changed in terms of PMC attention. More problematic, to deal with the rush of projects, they observed that the PMC had to set aside the unfinished development of program infrastructure—such as establishing formats for PDC tracking and for the reporting of assumptions embedded in the technical study analyses.

The kicker also increased the difficulty and burden of participation for a few customers as they rushed to qualify at a time when their plant production was at its peak. These customers described themselves as highly involved in their project's development. Finally, a few of PDCs and ATACs held the view that the kicker unnecessarily increased the cost of the savings acquired.

Project Scoping and Project Status Reporting

Both Energy Trust and PMC staff report the PMC has difficulty providing project cost and savings estimates with an accuracy sufficient to support Trust staff needs in their budget development activities. The difficulty arises from long project development times, during which reliable information on project costs and savings is not available.

The incentive offer to be accepted by the customer, Form 420, provides the most reliable estimates of project incentives and savings. Yet the bulk, though not entirety, of program delivery activities precede—indeed, lead up to—customers' acceptance of incentive offers. The PDCs track customers from point of first contact and the PMC tracks customers from the moment they request a technical analysis study. Consequently, customers appear in program tracking systems long before they have well-defined projects with associated cost and savings estimates.

The PMC has reliable program cost and savings estimates only at the time of the Form 420. Prior to that time, the PMC has either “preliminary” estimates obtained from a scoping study, or perhaps no estimates at all.

The initial program process called for a true scoping study, with cost and savings estimates developed in the technical study. Requests from both the Energy Trust and customers have led to the inclusion in scoping studies of preliminary estimates. The preliminary estimates enable all parties to formulate plans and make decisions, yet this is both advantageous and disadvantageous.

The benefit is, of course, that everyone needs to plan and some information is better than none. The disadvantage is that the preliminary estimates set expectations for both the Energy Trust staff and the customers. Dissatisfaction can arise when expectations are not fulfilled and plans need to be substantially revised; yet the

preliminary estimates may be quite different from the final ones. The preliminary estimates are based on very quick looks at complex industrial processes. The PMC has faced challenges in working with both Energy Trust staff and customers when subsequent detailed studies have not borne out their expectations.

Long Project Lead Times

A firm changing its production line risks revenue loss if the new equipment does not perform as expected at the end of the installation period. These projects can be very complicated and require careful planning. In many cases, a project must await the plant's annual shutdown. Consequently, efficiency projects can have long lead times, often in excess of two years.

In total, major production changes can span two to three years from initial scoping to installation. According to staff, this time span was in conflict with the Energy Trust's program budgeting process. However, in spring 2004, the Energy Trust Board committed to program funding through 2005-2006.

In order to develop a sound program budget, Energy Trust staff need to have good estimates of the expected project characteristics during the budget period. These characteristics include:

1. Number, average energy savings, and average incentive of installed projects;
2. Proportion of customers receiving scoping studies that go on to sign the Form 420, and the proportion of these that go on to install projects; and
3. Average length of time between scoping study and signed Form 420, and between signed 420 and installed project.

Production Efficiency has been offered to customers for about six months; reliable data on these characteristics are simply not available. Energy Trust staff need to address a very complex budgeting problem with limited support from available data, develop a solution, and present the solution and its ramifications to the Board with a clarity that facilitates Board decision-making. The Energy Trust faces the decision to commit large sums of money based on a half-year of program implementation. This decision will not be easy.

6. Implications of Program Goals and Methods

Program Authority and Decision-Making

The Energy Trust develops its programs in open processes including advisory council meetings and meetings of the Board of Directors that are open to the public. The program staff and Board make all final decisions.

The open decision-making process takes time—measured in months. Between open meetings, staff evolve their thinking to incorporate feedback received; the next generation of ideas needs to await the next meeting for an airing. Some agenda items take more time than expected, resulting in the postponement of other scheduled items to the subsequent monthly meeting.

This program development process conflicts with the needs of program implementers—staff of the Energy Trust, the PMC and the PDCs—charged with launching a program before it has been fully developed.

Delays in contracts, participation forms and policies negatively affect contractors and participants, as illustrated by examples given in Chapters 3 and 4. However, each of those effects is typically time-limited and ceases when the contract, form or policy is finalized.

But even more significant than their effects on contractors and participants, the delays result in program instability and the undermining of the authority of Energy Trust and PMC program staff.

These effects of undermined stability and authority have resulted from improvised decisions made by the Energy Trust Program Manager to keep the program moving. Once launched, the program does not—and cannot, in the interest of both customer service and attainment of program goals—stop while forms are created and revised, policies are formulated and contractors come on board.

The PMC Program Manager reports the Energy Trust’s lengthy decision process and concomitant improvised decision-making undermines the authority of its own program manager. “The Energy Trust’s program manager is our liaison. We ask him. He gives us an answer. But we’ve learned from experience that he may be countermanded at any time. This has happened countless times.” The Energy Trust Program Manager repeatedly improvises and his decisions repeatedly get revised. As a consequence, the authority of the PMC to deliver the program is undermined.

The interviewed customers did not, on the whole, report confusion about program policies, procedures or authority. Nonetheless, a variety of contacts interpreted various Energy Trust actions as abridging program authority and processes, and these contacts expressed concern about the effect such actions could have on

customers. Contacts agreed the program has “only one chance to blow it” with a customer, or even with a group of customers, as many large industrial firms share their experiences. Contacts viewed the Production Efficiency program as particularly vulnerable, precisely because its ability to fund large production line improvements attracts the attention of company CEOs. Creating dissatisfaction at the CEO level, contacts believe, could jeopardize the entire program.

The PMC feels that its control has been removed over its ability to meet its contract goals for energy savings. The Energy Trust retains a portion of its monthly invoiced amount, to be paid to the PMC upon the successful completion of the contract. The PMC does not know whether it will be judged on factors beyond its control, such as the outcome of Energy Trust negotiations with customers. The PMC’s fears were increased when the Energy Trust Program Manager asked the PMC for a plan to meet program energy saving goals should a project the Energy Trust was then negotiating with a customer not go through.

The need for improvised decisions is inevitable when a program is implemented before being fully developed and the established decision-making process requires three months or more to attain agreement. Improvised decisions are often changed several times as the decision process proceeds. This decision environment is common to most Energy Trust programs, yet its impact is magnified for Production Efficiency due to its very large short-term goals.

6. Implications of Program Goals and Methods

7. SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter summarizes our findings from interviews with seven Energy Trust and PMC program staff, all four PDCs, six ATACs, the Executive Director of Industrial Customers of Northwest Utilities, and 31 participants from 28 organizations with industrial processes. We draw conclusions and offer recommendations based on our findings.

The chapter is organized into three main sections:

- *Summary of Findings*—presents a discussion of our findings regarding Production Efficiency from observations and survey responses offered by those involved in the program;
- *Conclusions*—presents the evaluation team’s views on how the findings reflect the program’s status; and
- *Recommendations*—offers suggestions for program improvement based on survey findings and the evaluator’s conclusions.

SUMMARY OF FINDINGS

The Energy Trust signed a contract with Aspen Systems to serve as the PMC for the Production Efficiency program. The PMC’s program staff includes one dedicated Technical Manager, and three staff (the Program Manager, Operations Manager, and Administrative Coordinator) who support both the Production Efficiency and Building Efficiency programs.

By October 2003, the PMC had designed the program, incentives, procedures, participation forms, tracking systems and incentive payment processes. The PMC also had issued two RFPs to solicit bids from firms to serve as PDCs and ATACs, had selected qualifying firms, and contracted with all four PDCs and fourteen ATACs. The PMC identified the first Production Efficiency projects in August 2003; by October 2003, the program was in full swing.

By the end of 2003, the Production Efficiency program had attained customer commitments for projects estimated to acquire 104 million kWh—over half of its

7. Summary of Findings, Conclusions and Recommendations

cumulative 2003-2004 goal. In addition, four participants had installed projects and 124 projects had been identified (but not necessarily committed to) at 78 firms. The PMC had paid ATACs \$1,000,000 to conduct the technical studies that identified these projects, which had associated estimated incentives of \$13,800,000.

The success of the program in terms of volume of participation far outstripped the expectations of Energy Trust and PMC program staff. All interview contacts identified the program design and its implementation through the technical Manager, the PDCs, and the ATACs as working well overall.

Regarding program design, interview contacts value its goals of achieving industrial production efficiencies, energy savings and non-energy benefits, as well as its simplicity, its ability to accept large projects, the incentive level and its non-negotiability, and studies which are free to customers who go on to implement recommendations.

Regarding program implementation, the PMC Technical Manager, the PDCs and the ATACs all have experience working with and marketing to the industrial sector. Program staff and contractors bring trusted relationships and successful track records to their work for the program; to promote Production Efficiency, the Technical Manager, PDCs and ATACs called on many customers with whom they had previously worked. The PDCs report good working relationships with utility account executives.

Program staff and contractors also spoke highly of the technical and marketing skills of most of the people involved in the program, as well as their enthusiasm and motivation to ensure its success. The only exception involves the technical work of several vendors serving as ATACs, which was criticized by some engineers serving as PDCs or ATACs.

Interviewed participants expressed high satisfaction with the program and with the services they received from program staff and contractors. In fact, participants identified the high quality of program representatives as a significant program asset. Participants report that the people they worked with were helpful, knowledgeable, dedicated and enthusiastic. Participants appreciated having the PDC available to help them go through the process. Several participants volunteered that the Production Efficiency program was much more responsive to them than they had previously experienced in efficiency programs run by the utilities or by the state.

7. Summary of Findings, Conclusions and Recommendations

Of surveyed participants, 41% had not previously participated in a utility efficiency program. These program newcomers accounted for 7% of the savings estimated for the surveyed participants.

Most of the issues or problems identified by interview contacts stem from, or were exacerbated by the volume of participation.

PDCs and ATACs view the PMC as understaffed. They reported feeling many times that the PMC Technical Manager was unable to respond adequately to their requests for guidance. The time-limited incentive kicker that was offered during the first six months of the program stimulated participation (by all accounts) and further taxed PMC resources while the program was still in development. In particular, the kicker came before the PMC had established technical guidelines to direct technical analyses and reports, or had established a format for the PDCs to report project status. (Early in 2004, subsequent to the interviews conducted for this evaluation, the PMC began the establishment of technical guidelines.)

All interviewed program representatives recognize that each customer and project is unique. Thus, no one wants to see the establishment of rigid technical requirements or report standardization, which are viewed as constraining and have the possibility of excluding projects that do not fit a particular ideal. To accommodate industrial process diversity, in the early months of the program and prior to the kicker, the program design team (consisting of Energy Trust, PMC, and PDC staff) assigned the Program Technical Manager responsibility for conducting the technical review of studies done by ATACs that are also PDCs. The PDCs have responsibility for conducting the technical review of ATAC studies done for their customers, with the Technical Manager having ultimate responsibility. All parties have fulfilled their review responsibilities. However, two of the four PDCs and four of six interviewed ATACs questioned whether their projects received the level of attention they felt was warranted.

In addition to the technical review of the 79 studies conducted by ATAC/PDCs and oversight of all 175 studies done in support of the 124 identified projects, the Technical Manager also selected an ATAC to conduct each study, negotiated the study scope and cost with the ATAC, provided overall supervision to the staff of four PDCs and 13 ATACs, approved PDC and ATAC invoices, and met with senior management staff of a number of firms considering large projects. Given this list of responsibilities, it is perhaps not surprising that contacts described the Technical Manager as “high energy,” “dedicated to the program’s success,” someone who “gets the job done,” and one of the program’s assets, while being overworked.

7. Summary of Findings, Conclusions and Recommendations

Some issues identified by contacts do not relate to the PMC's staffing resources and relate instead to the program's design. One of these issues is the concern expressed by both PDCs and ATACs that in terms of working with customers, ATACs are disadvantaged with respect to PDCs that are also ATACs. The program structure has ATACs "hand over" their customers to PDCs. However, all of the interviewed ATACs who had done so (four of six) reported one or more situations where they had brought a customer to the program and then were denied the opportunity to serve that customer. These ATACs reported they lost customers when another ATAC was assigned the study or when the PDC acted slowly and the customer lost interest. For the ATACs who are engineering firms, the loss of a customer means not only the loss of a specific project, but also potentially the loss of a customer with whom the ATAC might otherwise do a number of projects over a period of years.

Multiple contacts identified the lack of a final savings-verification audit for installed projects as a program weakness. The current program design recognizes that industrial firms commission new equipment before they bring it on-line; to do otherwise could cause the production line to come to a halt. However, a commissioning of equipment to ensure smooth production may or may not guarantee the equipment is operating in an energy-efficient manner.

Other identified issues arise from tensions inherent among the multiple program goals and features. For example, Energy Trust and PMC program staff and contractors are wondering whether the Energy Trust places greater value on the goal of attaining large quantities of cost-effective energy savings or on the goal of serving smaller or under-served customers. Although both goals can be furthered, when resources are scarce, staff and contractors must decide which objective to pursue. No one expects smaller or under-served customers to be a large source of cost-effective savings, especially when the higher marketing and administrative costs this sector necessitates are included in the cost-effectiveness calculation.

As another example, the Energy Trust launched the Production Efficiency program before it was fully developed. In order to quickly acquire large quantities of energy savings, with lower administrative costs, it hired a PMC instead of managing the program with in-house staff.

At the same time, the Energy Trust is committed to an open decision-making process involving the public. The Energy Trust's open decision process for any issue unfolds over months, often three or more. Yet in order to implement a program that is not fully developed, and to implement it with the high-intensity effort necessary to achieve ambitious goals, the PMC needs rapid-fire decision support from the Energy Trust. The Energy Trust Program Manager, charged with moving the program forward to attain the goals, sometimes improvises interim decisions that

7. Summary of Findings, Conclusions and Recommendations

are later revised. As the open decision process unfolds, Energy Trust staff revise their thinking on a topic in response to the feedback they have received. Other times, the Program Manager simply postpones decision-making, awaiting the organization's process to play out. In such cases, the PMC's ongoing program implementation activity *de facto* creates interim program policies and methods that are subject to change as the Energy Trust's decision process slowly moves forward. Most affected by delays are contracts, written communications about the program and policy decisions.

This program decision process has the effect of undermining the authority of the Energy Trust Program Manager and the PMC as they represent the program to customers. It also undermines program stability, as contractors and customers receive changing messages about what can and cannot happen under the program, and about how activities must happen. Ultimately, it inhibits the program's ability to serve customers, impedes the acquisition of energy savings and increases program administrative costs.

CONCLUSIONS

1. The Production Efficiency program is working well.

The Production Efficiency program is working well in terms of number of customers brought into the program, magnitude of energy savings, types of projects and the project development process, which uses short, focused technical studies. Many customers and contractors believe the Production Efficiency program differs in a number of respects from its predecessors and believe these differences have contributed to its success.

2. The success of the Production Efficiency program derives in part from the quality of the staff and contractors delivering it.

The professional reputations of program staff and contractors benefit the program, as do staff and contractors' extensive networks of relationships with firms in the industrial sector, which they pursue to encourage customer participation.

3. Program procedures have several times undermined customer-ATAC relationships.

The RFP for ATACs specified that ATACs were expected to market the program. Yet all four interviewed ATACs who had worked to interest customers in the

7. Summary of Findings, Conclusions and Recommendations

program and then referred the customers to a PDC, had lost at least one customer in the process. At stake for the ATAC is not simply the facility study to be conducted, but the ongoing relationship with a customer that might lead to numerous jobs over time. At stake for the Production Efficiency program is the loss of marketing opportunities and resources as ATACs feel a conflict of interest in bringing customers into it.

4. PDCs and ATACs request greater technical guidance.

The PDCs and ATACs request greater technical guidance than was forthcoming from the PMC Technical Manager. They would like guidance on the assumptions that underlie project benefits and costs, such as measure lives, customer energy costs, and non-energy benefits.

5. The Energy Trust's decision-making and contracting processes do not keep pace with the needs of the program and result in the undermining of program staff authority and program stability.

The Energy Trust's decision-making, legal and contracting processes move slowly, while the Production Efficiency program—launched as a concept not fully fleshed out—acquired over 100,000,000 kWh in savings within six months of its start. In the absence of final decisions produced by the formal processes, the Energy Trust Program Manager kept the program moving by improvising decisions and revising them as the formal process brought new views to light. As a consequence of this ad hoc approach, the authority of the Energy Trust and PMC program managers to implement the Production Efficiency program is weakened, contractors experience program instability, and the program is vulnerable to customers being adversely affected by the ongoing changes.

6. Program contractors report they are struggling to make appropriate decisions in the absence of clear direction from the Energy Trust regarding the numerous program goals and distinguishing features that are in tension with each other.

Production Efficiency program goals and features are in tension with each other and the Energy Trust has yet to provide its contractors with clear guidance for negotiating the conflicts. One example of this are the goals to acquire a large quantity of cost-effective savings and to serve smaller and under-served customers; the latter sector has smaller, less cost-effective savings and reaching them requires higher marketing and administrative expenditures than needed for other

7. Summary of Findings, Conclusions and Recommendations

customers. Another example: rapid, low-cost program delivery requires that projects be identified as efficiently and inexpensively as possible, whereas high confidence in program savings requires high analytical precision in identifying projects and verifying the performance of installed equipment, both of which are expensive and time consuming. Program contractors report they are struggling to make appropriate decisions in the absence of clear direction from the Energy Trust.

RECOMMENDATIONS

1. **Congratulate program staff and contractors for a job well done.**
2. **Clarify for ATACs the current process for selecting an ATAC for a project. Continue to investigate the experiences of ATACs in marketing the program and bringing customers in.**

Clarify and communicate to ATACs how the decision is made to award a project to an ATAC. Assess during the program's second year the number of customers ATACs believe they have brought to the program and lost. For each claim, investigate the ATAC's support for the claim and the circumstances from the perspectives of the PDC and PMC.

3. **Provide increased technical guidance for PDCs and ATACs.**

Work with PDCs to establish additional technical parameters and guidelines for evaluating project costs and benefits. The parameters and guidelines will need to balance consistency with flexibility, as each industrial production process is unique.

4. **Conduct a preliminary investigation of program impacts.**

The Energy Trust should evaluate the first one or two dozen projects to be completed by the program to ensure that the data necessary to support a comprehensive impact evaluation are available. The investigation should address the desirability of activities to be conducted at the completion of the project, such as project commissioning and final savings verification audit.

7. Summary of Findings, Conclusions and Recommendations

5. Seek ways to expedite contracts, communications with the market, and program policy decisions.

The Energy Trust is committed to its open decision-making process, yet it needs to recognize that the current approach of postponing decisions or making ad hoc judgements to fill the void during process development is detrimental to the program. The Energy Trust needs to develop a decision support system that will meet the program's need for rapid response times for contracts, market communications, and policies.

6. Prepare for potential participants written materials detailing steps for program participation.

Prepare a brochure describing the steps for program participation, or perhaps a FAQ (frequently asked questions) leaflet. The information could identify the forms in use and the turn-around time the customer might expect for activities conducted by ATACs and PDCs.

7. Give clear guidance to contractors as to how to pursue conflicting objectives.

Were program budgets and timeframes infinitely expandable, the Energy Trust would not need to set priorities among the program objectives. However, contractors are asking what customers they should be seeking, whether they should pursue very large projects, what level of technical rigor they should be ensuring, and so on. The Energy Trust needs to recognize the tensions within the innovative Production Efficiency program—recognizing, too, that the program breaks new ground (according to many contacts)—and that the program's ultimate success hinges on the clarity of the instructions that the program's many competent contractors receive. The Energy Trust should actively debate the implications of program features that are in tension with each other and give clear guidance to contractors on how to prioritize efforts when the contractors are faced with tough decisions.

APPENDICES

Appendices

APPENDIX A

Survey Instruments

Appendix A

SURVEY INSTRUMENTS

PRODUCTION EFFICIENCY DISCUSSION GUIDE PROGRAM STAFF (PMC, ENERGY TRUST)

Overview

1. What is your role?
2. What's working well with the program? Anything else?
3. What are the biggest challenges that face the program now? Anything else?
4. What changes are being considered?
5. What questions remain about how the program is working or will unfold? About how well the model is working?

Policies/Decisions/Agency

6. The mid-year evaluation of the Building Efficiency program concluded that the program was adversely affected by Energy Trust delays in making key policy decisions and in contracting. Has the Industrial program experienced any similar delays? [If so:] What policy decisions and contracts have been needed? How timely has the turnaround been?
7. How did the contracting with the PDCs go? Any difficulties? Any delays? [If so:] What was the source of the delay?

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8. How are the customer contracts working out? Has any evolution/ modification of the contracts occurred?
9. Have any delays occurred in customer contracting? [If so:] What delays/ what issues? Whose actions led to the delays? How long were the delays? How were they resolved?
10. How are the application forms working out? What revisions have been needed, if any?
11. At the time of the mid-year interviews, the Energy Trust had just formulated a policy of “non agency” with respect to its PMCs. How is this policy working with respect to the Industrial program? Any issues unique to the industrial program with respect to the implementation of this policy? How are the PDCs affected, if at all?

Marketing

12. Please describe the roles of the PDC, Aspen and Energy Trust in carrying out the program marketing strategy? What does each party do, what is expected of each or what are they responsible for, and what resources do they each have to work with?
13. Does the current marketing approach seem to be working? Are the resources sufficient? The allocation of responsibilities? The fulfillment of responsibilities?
14. What else needs to be done?

15. Given that each of the PDCs have different approaches, are each of the market sectors responding equally well? Does any approach seem to work better?
16. Are any customers coming to the program independently of the PDC (who are then assigned to a PDC)?
17. Are there any marketing issues that touch on PGE or PacifiCorp in the role as the customers' utilities?

Database

18. What project tracking occurs for the Industrial program?
19. How are marketing contacts and prospective participants tracked? What follow-up is done?
20. What overall tracking occurs of PDC activities in terms of their contacts?

Technical Studies

21. Tell me about the three-tiered approach to identifying and developing projects? How extensive is each tier? How is this approach working out from a marketing perspective? From a technical perspective (i.e., missed opportunities)?
22. Do the technical studies ever address non-energy benefits such as productivity, reliability, or product quality? If so, how often, and how are these results perceived by the customer?

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23. How are customers responding to the technical studies? What follow-up happens with a customer that's received a study?
24. Have any problems emerged? How have they been resolved?
25. Who assigns projects to ATACs? Who manages their work?
26. Are there any problems with the work of the ATACs? Have any ATACs received additional training in the industrial program (formal or informal)?

Project Implementation

27. Can you describe the project implementation process?
28. Have any issues arisen in project implementation?
29. Is the customer typically under any time constraints for implementation?
30. How long does it typically take—just ballpark estimates—for projects to be implemented?
31. Do any program representatives do anything to try to keep a project on track?
32. Is the incentive paid at the end of the project, or in installments? Are installation contractors ever paid directly, or are all payments made to the customer?

33. Is there any tracking or comparison of measures recommended in the studies versus measures installed? If not, is there any way to do this retroactively?
34. Are savings re-estimated at the end of the project, such as based on final equipment selection, configuration, or commissioning results?
35. Is there any on-going monitoring of the project performance (both process effectiveness and energy efficiency)?
36. Is there any way to assess opportunities that might not be captured in the technical study? Is this done? Could it be done retroactively?

Coordination/ Cooperation

37. What coordination or cooperation occurs among the PDCs? Is there any sharing of lessons learned, or marketing approaches, and so on?
38. Is their view of each other competitive or cooperative?

Additional Program Goals

39. What other goals does the program have in addition to direct resource acquisition?

Other Agencies/ BETC/ Self-Direct Funds

40. Are there any components to program delivery that are outside the control of the Energy Trust/ Aspen/ PDCs?

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41. [If yes:] What, and who is responsible? What is the status of these components? What remains to be done? Has getting the components on board taken longer than anticipated? Any problems? Any problems resolved; if so, what led to the resolution? Who in the other agencies have you been working with on this?
42. Are any of the participants benefiting from BETC? [If yes:] How is that process working? Are you able to track the number of projects that submit the forms to the Department of Energy? Is BETC included in the financial analyses the customers receive for the proposed projects?
43. What's the policy for self-direct firms? What type of interactions have you had with customers about self-direction?
44. At one point this fall there was concern voiced by some in ODE about the industrial program and self-direct funds. Are there any ongoing concerns, if so what are they and how are they being addressed?

Summary

45. Have I missed anything that's important to an evaluation of how the program is working?
46. What would you say are the greatest strengths of the program?
47. What would you say are the greatest current weaknesses of the program?

PRODUCTION EFFICIENCY DISCUSSION GUIDE PROGRAM DELIVERY CONTRACTORS

1. What are your responsibilities in the Industrial program? What are your key market sectors? (Probe into submarkets: Size. Industrial processes. Urban/rural.)

Getting on Board

2. Let's touch on your experience in getting under contract with Aspen to be a PDC. Did any issues or problems emerge as you responded to the RFP, prepared your proposal, negotiated with Aspen, or signed the contract? [If so:] What were they and how were they resolved?
3. Did the process of getting on board meet your expectations (consider time it took, process, outcome)? Is there anything you would have liked to be different, or any feedback you want to give Aspen or the Energy Trust?
4. When did you begin work on the program?

Project Development/ Technical Studies

Let's talk about getting a project from first inkling of an opportunity to a commitment. Then we'll back up and talk about your marketing efforts.

5. About how many customers have you worked with to date on any stage of project development?
6. Tell me about the scoping and technical study approach to identifying and developing projects. Is this the approach you use? [Explain]

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7. Can you trace out for me the path that a project takes through a company, from inkling of idea to commitment to do the project? I'm interested in learning the position of the person in the company you usually speak with first and how the idea moves on from there.
8. Are ATACs conducting any studies for you? [If so:] Are there any problems with the ATAC work?
9. Do the technical studies ever address non-energy benefits such as productivity, reliability, or product quality? If so, how often, and how are these results perceived by the customer?
10. Have any problems arisen in the project development process? How have they been resolved? Do you have any suggestions that might improve the identification and development of projects?

Marketing (Skip questions whose answers are already apparent)

11. What resources from your firm (FTE, skills, methods) are devoted to marketing?
12. Please describe the roles of the PDC, Aspen and Energy Trust in carrying out the program marketing strategy? What does each party do, what is expected of each or what are they responsible for, and what resources do they each have to work with?
13. Are the resources sufficient? Are you receiving the support you need from Aspen?
14. Does the current marketing approach seem to be working? [explain]

15. What reasons do customers give for participating, or not participating, at this time?

Project Implementation

16. Can you describe the project implementation process? Have any issues arisen in project implementation?
17. Do you do anything to try to keep a project on track? (Probe: Do you monitor its status? Seek commitments? Try to solve problems?)
18. Is there any tracking or comparison of measures recommended in the studies versus measures installed?
19. Are savings re-estimated at the end of the project, such as based on final equipment selection, configuration, or commissioning results? Is there any on-going monitoring of the project performance (both process effectiveness and energy efficiency)?

Coordination/ Cooperation

20. How well has Aspen provided direction and support for your work?
21. Have there been any problems? [If so:] How were they resolved? Any outstanding issues?
22. What status information do you report to Aspen? How often do you communicate with them?

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23. How is the division of the market among the PDCs working out?
24. What coordination or cooperation occurs among the PDCs? Is there any sharing of lessons learned, or marketing approaches, and so on? Do you formally or informally meet or converse via conference call?
25. Do you have any suggestions or feedback for Aspen or the Energy Trust on the role of the PDCs and how they work to deliver the program?

Database/ Tracking

26. Do you track or maintain a database on your activities, contacts, etc?
27. Are marketing contacts and prospective participants tracked? How? Is the tracking system used to trigger follow-up work?

BETC/ Self-Direct Funds

28. Are any of the participants benefiting from BETC? [If yes:] How is that process working? Are you able to track the number of projects that submit the forms to the Department of Energy? Is BETC included in the financial analyses the customers receive for the proposed projects?
29. Customers who come to the industrial program may also have the option of self-directing funds. What type of interactions have you had with customers about self-direction?

Summary

30. What's working well with the program? Anything else?
31. What are the biggest challenges that face the program now? Anything else?
32. What questions remain about how well the model is working?
33. What's different about this program than about other industrial sector programs you've worked with? How do these differences contribute to its success?
34. How are customers responding to the role of the PDC in the Industrial program? What are the benefits of using PDCs to implement the program? Any drawbacks? How does the "PDC approach" compare with past utility approaches to the industrial sector?
35. For customers that have participated in a utility offered program, do you have any feeling about how they might perceive differences between the ETO offering and the utility?
36. Have I missed anything that's important to an evaluation of how the program is working?

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PRODUCTION EFFICIENCY DISCUSSION GUIDE ALLIED TECHNICAL ASSISTANCE CONTRACTORS

1. Please describe your firm's services and products. Does your firm have a specialty with particular equipment or industrial processes?

Getting on Board

2. Let's begin with your experience in getting under contract with Aspen to be an ATAC. Did any issues or problems emerge as you responded to the RFP, prepared your proposal, negotiated with Aspen, or signed the contract? **[If so:]** What were they and how were they resolved?
3. Any other feedback you want to give Aspen or the Energy Trust?

Technical Studies

4. Have you ever done the initial scoping (walk through) of a project? Please describe your work. What opportunities do you look for?
5. Have you ever done technical studies? What are the steps?
6. How do "short" studies differ from "detailed" studies?
7. How do you develop estimates of project costs?

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8. How do you estimate equipment usage patterns (Is there monitoring or metering)?
9. Does the customer's billing history enter into the short studies you do? How? Do you use any other baseline data?
10. What energy rates do you use to calculate customer cost savings?
11. How do you determine the expected lifetime of equipment? Does the measure lifetime depend on the customer's application?
12. Do you estimate the cost-effectiveness of the proposed measures? Do you include program incentives to show what payback the customer would see?
13. Do your studies ever address non-energy benefits such as productivity, reliability, or product quality? *[If so]* How? Do you quantify non-energy benefits?
14. Have you had guidance regarding what the Energy Trust wants on issues like measure lives, description of peak savings, or other technical details regarding the studies? *[If so]* Was that guidance adequate?
15. Is the work you are asked to do for studies appropriate to the type of study? For example, have you been asked to do a short study for a complicated project, or a detailed study for something relatively simple?
16. Is the compensation for your services working out reasonably and adequate?

17. Do you think these studies provide investment-grade information for customer and Energy Trust decisions regarding capital investments for efficiency?
18. Have you been asked to do things outside your range of expertise? If so, what? Do you feel comfortable with the result?
19. Have there been situations where the absence of gas incentives for industry has affected the viability of electric efficiency projects? If so, please describe.
20. *[If not already addressed]* Have you been involved with a project in any way after you've submitted the technical study?

Program Design, Operation and Administration

21. How are customers responding to the role of the ATAC in the Industrial program?
22. Have you worked with more than one PDC? Any comments on their differences?
23. How is the assignment of projects to the ATACs (and to the PDCs) working out?
24. What coordination or cooperation occurs among the ATACs? Is there any sharing of lessons learned, or marketing approaches, and so on? Do you formally or informally meet or converse via conference call? Do you think this would be valuable?

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25. Have you encountered any problems in working with ETO, Aspen, any of the PDCs, or other ATACs? How have they been resolved?
26. Do you have any suggestions or feedback for Aspen or the Energy Trust on the role of the ATACs and how they work to deliver the program?
27. Are the study quality control reviews (feedback from the program's technical manager) reasonable and constructive?
28. How has the ATAC role changed your relationship (or created one) with the participating customers?
29. Has the program policy for customers that can self-directing their efficiency funds caused any confusion or problems? Explain.
30. Have you discovered facility efficiency improvements or renewable energy (other program) opportunities in the course of your work? If so, what have you done with this information?
31. Have you run into projects where one of the efficiency measures is heat recovery from cogeneration? If so, do you have clear guidance regarding how to look at these projects? Have there been any problems with the study of such projects?
32. Have the PDCs proposed study of any measures that you think would likely be pursued regardless of Energy Trust support? If so, please describe.

Summary

33. In your experience, how does this program differ from what you've experienced previously? Elaborate.
34. Do you have any sense of whether customers who have participated in a utility program perceive differences between the ETO program and the utility's program?
35. What's working well with the program? Anything else?
36. What's not working well with the program?
37. Does the Production Efficiency project development approach seem to be working better with one type of efficiency project than another?
38. Are there types of projects that aren't happening? I.e., missed opportunities? *[If so]* Why?
39. What questions remain about how the program is working or will unfold?
40. Have we missed anything that's important to an evaluation of how the program is working?

Appendix A

PRODUCTION EFFICIENCY DISCUSSION GUIDE CUSTOMERS

Communication

1. With whom have you worked as a representative of the Energy Trust's Production Efficiency program? (Probe for PMC, PDC, ATAC, vendor, ETO, utility rep; number of different people at each organization.)

2. Did everyone you worked with seem to have a clearly defined role?

Did any one ever seem to change roles? (If so:) What happened?

Do you feel that the number of people you dealt with was too few, the right amount or more than necessary? Why do you say that?

Was there any duplication in the information or services provided? (If so:) What happened?

Was there any contradiction in the information or services provided? (If so:) What happened?

Was it always clear to you who had authority to address a given issue?

3. Who else in your firm has been a key decision maker for the project? (Probe technical, financial, senior management; get names and titles; ask if we can call; get phone number or extension)

- a. Do you know which of these key decision makers were in communication with program representatives?

- b. Are there any key decision makers that program representatives did not speak with? (*get names, titles, ph numbers*)

- i. *{If yes:}* Do you think the project would have benefited had program representatives been talking directly with these key decision makers? {Elaborate}

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4. Did the program representatives communicate clearly with each of the decision makers? Did any confusion ever occur? (If so:) What happened?
5. Do you have any other comments to add about how the various program representatives worked with you and the other decision makers?
6. Do you have any suggestions to improve the process by which program representatives worked with you and your colleagues? (Probe: Perhaps how the representatives are organized or directed?)
7. How did you hear about the program or how were you first contacted about it?
8. Would any other information have been useful – written program descriptions, brochures, information provided on the Internet?
9. Had your firm participated in previous efficiency programs offered by your utility? (*Probe number of projects over how many years.*)

Energy Savings

10. Have the prospective energy savings from your project been presented to you in writing?
 - a. {If so:} Who presented them to you?
11. Do you feel that you understand the basis of the estimated energy savings? Do you feel comfortable with the savings estimates? Why do you feel that way?

12. Do you feel comfortable with the project cost estimates? {Elaborate}
13. Are there any non-energy benefits that you expect from this project? (*Probe productivity, reliability, product quality, safety, etc.*) Were these described to your satisfaction in the energy study? Was a monetary value estimated?
14. Do you use payback, return on investment or some other criteria for making capital investments in the plant?
15. What is the payback/ROI or other guidelines your firm is currently requiring for its investments? (*Probe whether the cut-off is greater or lower than 18 months.*)
16. What was it about the program or energy study that got management's attention and willingness to pursue the project?

Program Overview

17. What do you think is working well about the program?
18. What do you think is not working well about the program?
19. Is there anything you would change about the program?
20. Is this program something that you would participate in again?
21. Is this program something you would recommend to other industrial firms?

Appendix A



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