

# Analyzing Program Results to Strategize for the Future of the Energy Trust New Buildings Program

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## ABSTRACT

Energy Trust of Oregon's New Buildings program serves the market for new construction and major renovations (replacing two or more building operating systems) in PGE, Pacific Power, NW Natural and Cascade Natural Gas territory in Oregon. Since the program began in 2004,<sup>1</sup> 55% of the program's electric savings and 67% of the program's gas savings have resulted from the installation of energy efficiency measures in large commercial new construction projects  $\geq 100,000$  ft<sup>2</sup>. These large projects constitute 14% of the total number of projects that have been completed to date. Since the program began in 2004 and as projected through the end of 2007<sup>2</sup>, the program's total mix of projects, including the large projects with their high concentrations of savings, have resulted in a very cost-effective program with levelized costs of \$0.019/kWh and \$0.12/Therm.

Program staff believes that the program has been able to successfully recruit and close large projects that emerge in the marketplace. However, the market for large new construction projects is cyclical and finite. In order to increase market penetration, the program has expanded its marketing tactics to recruit more small- to medium-size new construction and major renovation projects in addition to aggressively recruiting the large projects that do arise in the market. These tactics have resulted in a higher project enrollment rate than ever before in the program's history and staff believes that this will result in an increase in the program's overall savings. The resulting tradeoff may be that levelized costs for the program increase because the ratio of delivery dollars to savings claimed will increase as the average project size decreases.

## Introduction

The Energy Trust of Oregon began operation as a non-profit, charitable organization in March 2002 to fulfill a mandate to invest "public purposes funding" for energy efficiency, conservation and renewable energy resources in Oregon. The mandate emerged from 1999 energy restructuring legislation (Senate Bill 1149) that included a 3% public purposes charge to the rates of the two largest investor-owned utilities. Subsequent action by the Oregon Public Utility Commission encouraged the startup of a new non-profit organization to administer the funds created by the legislation. The state's largest natural gas utility voluntarily decided to participate. A portion of the funding also is dedicated to low-income housing energy assistance and K-12 school energy conservation efforts. Energy Trust is dedicated to changing how Oregonians use energy by promoting energy efficiency and clean renewable energy for Oregon customers of Pacific Power, Portland General Electric, NW Natural and Cascade Natural Gas.

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<sup>1</sup> Data analyzed is for projects completed through November 1, 2007.

<sup>2</sup> Unless otherwise noted, savings numbers in this paper are based on savings where "true-up multipliers" have been applied. "True-up multipliers" account for engineering realization rates and "free-rider" factors. Levelized cost metrics are based on savings numbers where "true-up multipliers" have been applied.

Energy Trust's Business Energy Solutions: New Buildings (NB) program (formerly the New Building Efficiency program) has been designed, and consistently implemented since the beginning of 2004 with a high degree of success, reliability, and innovation. Processes and systems for the Program have been proven reliable, and numerous enhancements are continually made to improve the Program operations, its offerings, and its delivered results. The NB program promotes higher energy efficiency, above the already aggressive State of Oregon Non-Residential Energy Code, for new and renovated construction projects through multiple levels of financial incentives, covering prescriptive measures to customized high performance building energy analysis and modeling. The Program opened for business in October 2003 but wasn't fully operational until January 2004. Science Applications International Corporation, SAIC, is the Program Management Contractor, performing the detailed design, management and implementation in cooperation with, and under contract to Energy Trust of Oregon, Inc. More details on the NB program may be found at: [www.energytrust.org/newbuildingefficiency](http://www.energytrust.org/newbuildingefficiency).

The purpose of the NB program is, in simple terms, to "buy" electric and natural gas energy savings from commercial new buildings. Acquiring energy savings is the leading objective, with market transformation and technology development taking secondary levels of importance with the program. Participants to the program include any new construction or major renovation of commercial, industrial and mixed-use buildings, as well as multi-family housing, located within the participating utilities' service territory.

Services offered by the NB program include financial incentives for energy-efficient design that exceeds Oregon's energy code requirements. The value of the incentive is dependent upon the amount of energy saved annually.

The NB program offers four options for new construction and major renovation projects:

1. Standard Track includes a set of prescriptive measures and incentives that are available after the program verifies installation. Historically, the incentive cap on the Standard Track topped out at \$50,000 but the program will be expanding the cap to \$100,000 in 2008 to encourage participants to install more efficiency measures in their projects. In addition, applications requesting incentives less than \$3,000 are not required to obtain pre-approval from the Program before implementing the project.
2. Custom Track offers a \$0.10/kWh and \$0.80/therm incentive for energy savings that exceed Oregon Energy Code as demonstrated by an energy model or calculation. In 2008, the incentive cap for the program will be raised from \$200,000 to \$300,000. Custom Track participants are able to access Technical Assistance incentives to help with design and modeling for the building design. These incentives are valued at 50% of the total incentive that the project will receive up to a cap of \$25,000. Historically, the Technical Assistance Incentive was received after the project modeling was complete and before the building was constructed. Beginning in 2008 the Technical Assistance incentive will be offered in addition to the eventual incentive that a project can receive for energy savings. Custom Track participants can also leverage incentives for commissioning valued at \$0.03/kWh and \$0.20/Therm and capped at \$40,000. For 2008, Custom Track can be combined with Standard Track for a total maximum incentive of \$465,000.
3. The Leadership in Energy and Environmental Design (LEED) - New Construction Track offers incentives based on the number of Energy and Atmosphere Credit One points, building size and occupancy type. This track was added to accommodate the market's desire to build to a LEED standard and pursue Energy Trust incentives without having to run two separate energy models: 1) one using ASHRAE 90.1 as the baseline to satisfy LEED, and 2) another using Oregon Non-Residential Energy Code as the baseline to satisfy NB program Custom Track requirements. Historically, this track has only been able to accommodate

- savings and pay incentives for buildings with a maximum size of 100,000 ft<sup>2</sup>. In 2008, this track is being expanded to accept the same energy analyses that are used for LEED<sup>®</sup> certification to streamline participation for buildings of any size.
4. In 2007 NB program added an ENERGY STAR<sup>®</sup> track to encourage buildings that have already participated in the Standard Track or did not participate in the program to acquire energy savings by achieving an ENERGY STAR rating. The ENERGY STAR<sup>®</sup> option offers incentives to eligible new building projects that achieve the ENERGY STAR building performance certification from the U.S. Environmental Protection Agency (EPA). ENERGY STAR incentives provide \$1,000 to \$15,000 per eligible project. Based on the space type, geographical location, and level of business activity, a facility may use EPA's national energy performance rating system, Portfolio Manager, to obtain a rating on a scale of 1 to 100. Facilities that meet certain criteria and achieve a rating of 75 or higher are eligible to apply for the ENERGY STAR incentive option through Energy Trust.

## **Program Results**

Since the program began it has managed to acquire substantial electric and gas savings. Table 1 and Table 2 illustrate electric and gas program accomplishments respectively since 2004. In the years 2002 and 2003 Energy Trust worked closely with electric utilities PGE and PacifiCorp to close commercial new construction projects that the utilities had been working with before the legislation and action by the Oregon PUC that formed the Energy Trust.<sup>3</sup>

In Tables 1 and 2 it is clear that the program acquired limited electric or gas savings in 2004 and 2005. This is representative of the long life-cycles of projects in the commercial new construction sector. Many of the projects that closed in 2006 and 2007 were enrolled in the program in 2004 and 2005. Moreover, many of the large new construction projects that were enrolled in the program closed in 2006 resulting in a very cost-effective year as indicated by the low levelized costs for 2006.

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<sup>3</sup> For the purpose of examining savings ramp-ups and the cost-effectiveness of New Buildings program efforts these 2002 and 2003 projects are not be considered in the discussion in this section. In 2004, some of these "utility transition" projects closed and Energy Trust claimed 2,363,549 kWh for these projects (these utility transition projects are excluded from the analysis in the next section of this paper).

**Table 1.** New Buildings Program Electric Results by Year through 11/1/07

<b>Electric</b>					
	<b>Savings</b>	<b>Total Costs</b>	<b>Incentives</b>	<b>Weighted Average Measure Life</b>	<b>Levelized Cost 3% DR (\$/kWh)</b>
2004	2,884,006	\$1,347,184	\$57,616	12.3	\$0.046
2005	6,567,848	\$2,421,939	\$784,144	16.2	\$0.029
2006	17,474,636	\$3,449,182	\$1,944,271	18.1	\$0.014
Projection for 2007	19,908,711	\$4,750,000	\$2,553,233	19.0	\$0.017
<b>2004-2007</b>	<b>46,835,201</b>	<b>\$11,968,305</b>	<b>\$5,339,264</b>	<b>17.9</b>	<b>\$0.019</b>

**Table 2.** New Buildings Program Gas Results by Year through 11/1/07

<b>Gas</b>					
	<b>Savings</b>	<b>Total Costs</b>	<b>Incentives</b>	<b>Weighted Average Measure Life</b>	<b>Levelized Cost 3% DR (\$/Therm)</b>
2004	22,296	\$151,338	\$28,005	11.8	\$0.69
2005	80,078	\$257,639	\$403,916	10.6	\$0.36
2006	604,742	\$696,962	\$383,829	16.9	\$0.09
Projection for 2007	530,000	\$820,000	\$535,623	17.7	\$0.11
<b>2004-2007</b>	<b>1,237,116</b>	<b>\$1,925,939</b>	<b>\$1,351,373</b>	<b>16.8</b>	<b>\$0.12</b>

Large projects are highly cost-effective because of the economies of scale associated with these projects. These projects are largely visible in the market and are easy to target. This reduces marketing expenses associated with applying program staff for outreach efforts. Many of these projects have leveraged the Custom Track and some have even reached the incentive cap, resulting in an overall reduction in the program expenditures per unit savings. Conversely, these projects are inherently more complex than smaller projects and they require more attention to process through the program. Regardless, extra staff time does not outweigh other economies and large projects have functioned to bring down the cost associated with incremental savings gains.

In its first years, the program encountered a surge in large new construction projects that yielded large savings gains. Based on periodic reviews of publications listing new construction projects, the program believes that it has historically done a good job of recruiting the large projects that have arisen in the marketplace. For example, in April 2007, Portland Business Alliance put out a publication titled “Central City Development and Redevelopment Projects” (Portland Business Alliance 2006). Under the section in this report listed as “Under Construction – Westside”, which encompasses some of the larger projects in downtown Portland, 14 of the 18 larger projects listed are enrolled in New Buildings program.

Of particular note in the program’s success are a number of hospital and healthcare projects that were constructed during the first few years of the program’s existence; although it is not likely that the program will see another health care related growth spurt for some time. Hospitals are larger facilities and some have beds and surgical facilities and operate around the clock. Consequently, these facilities have large demand with tremendous potential to bring large electric and gas savings gains. Other project types that have yielded large savings include warehouses, hotels, multifamily living in the form of condos and apartments and data centers. Measures categories that brought in substantial electric savings include lighting, HVAC, and Custom electric measures which encompass a broad category of applications. Measure

categories that brought in substantial gas savings include Custom HVAC, Radiant Heating and Custom gas measures that also encompass a wide variety of applications.

In 2006 the program closed many of the large projects that filled the pipeline. The program will continue to aggressively enroll large projects but there are not many projects that are slated for completion in 2007. Regardless, in 2007, the program is expected to bring in more electric savings than the previous year and the program will bring in somewhat fewer gas savings. However, in 2007 levelized costs for both fuels are expected to be higher than they were in 2006.

The reason for the increase in levelized cost can be attributed to the program’s push to build the foundation of the program pipeline with small- to medium-size projects. Each of the small- to medium-size projects will yield fewer savings on average due to a set administrative expense associated with having program staff work with and process these projects. There is also an increased per unit marketing cost associated with trying to educate and enroll small- to medium-size projects in the program.

Regardless of a potential reduction in overall cost-effectiveness, the program needs to move to enroll more small- to medium-size projects in order to expand its reach. Indeed there is a direct correlation between the number of projects enrolled in the program and the total acquired savings that the program has achieved (see Figure 1).

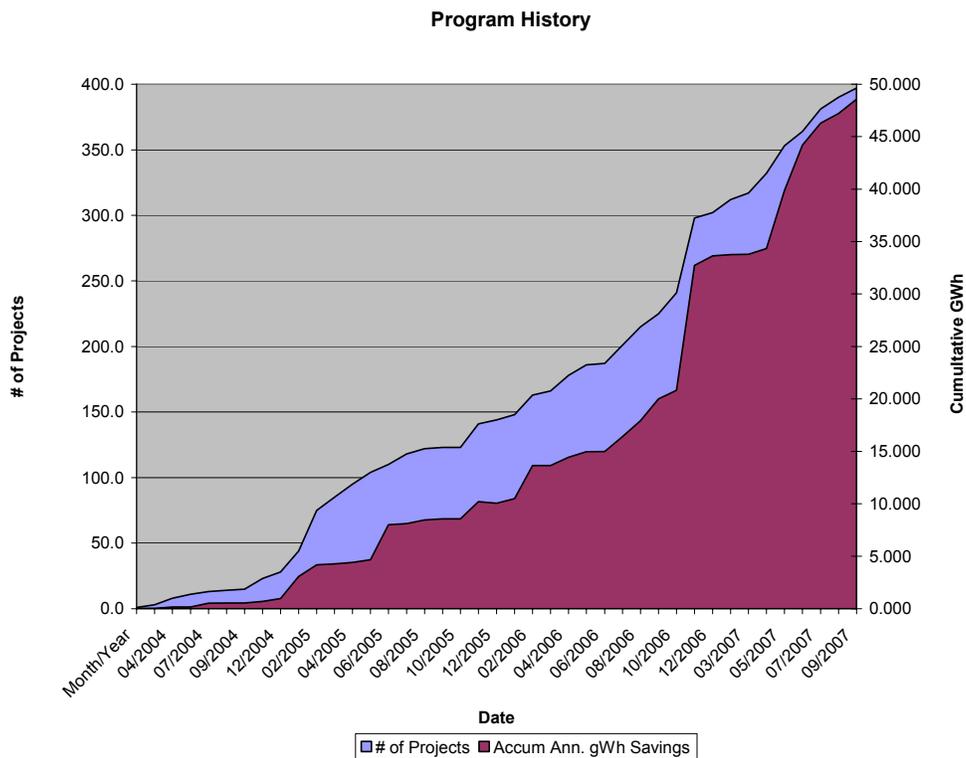


Figure 1: Program History<sup>4</sup>

<sup>4</sup> Savings numbers in Figure 1 are gross numbers before savings before “True-up multipliers” that account for engineering realization rates and “free-rider” factors are applied.

Efforts appear to be paying off and the program has already enrolled more projects this year than any other year since the program began. As of November 12<sup>th</sup>, 2007 the program had enrolled 256 projects compared to a total of 225 projects enrolled in all of 2006.

Thus far, the program appears to have achieved about 16% penetration in the total square footage of new construction starts. If we assume that the program is consistently enrolling large projects, then that leaves a substantial universe of small- to medium-size projects that the program has yet to address. To address potential markets across all types of projects, it is useful to take a step back and look at how different size projects have responded to the program’s offerings to date and reconsider the program offerings to try and enroll more projects.

### Examining Program History to Understand the Future<sup>5</sup>

Table 3 demonstrates that 76% of the program’s total number of projects to date has been less than 100,000 ft<sup>2</sup> in size. However, half of the program’s total electric savings and 66.7% of total gas savings have come from projects over 100,000 ft<sup>2</sup>. This relationship serves to illustrate how important large projects have been in helping the program to deliver savings to date. In order to deliver the most cost-effective savings it makes sense for the program to recruit large projects when they are available until either the resource of large projects is exhausted or program resources are exhausted. Generally, the resource of large projects has been depleted before the program has drained incentive budget making it possible for the program to bring in more, although less cost-effective savings, on the margin.

**Table 3.** Program Savings by Participating Building Size from Program Inception through 11/1/07

Building Area (sq. ft.)	Total number of buildings	Percentage of total buildings	Electric Savings (kWh)	Percentage of Total Electric Savings (kWh)	Gas Savings (Therms)	Percentage of Total Gas Savings (Therms)
<5,000	30	9%	128,595	0.4%	13,383	1.2%
5,000 - 19,999	126	36%	1,979,207	5.4%	27,513	2.6%
20,000 - 49,999	104	30%	9,482,720	26.1%	190,661	17.8%
50,000 - 99,999	45	13%	6,577,298	18.1%	125,024	11.7%
100,000 - 499,999	45	13%	15,763,142	43.3%	652,030	60.9%
≥ 500,000	2	1%	2,454,163	6.7%	62,248	5.8%
	<b>352</b>	<b>100%</b>	<b>36,385,125</b>	<b>100%</b>	<b>1,070,857</b>	<b>100%</b>

It is not surprising that average savings increase as building size increases (see Chart 2). Chart 2 further highlights that the program should pursue large projects in order to achieve a low program levelized cost. Large projects tend to be high profile in the market and this makes them easy to target. Likewise, projects that are placing an emphasis on environmental prowess are often positioned to receive a suitable dose of public recognition. This makes them easy and desirable targets for the New Buildings program. There are, however, a substantial lot of other projects that are not as easily contacted and recruited. To date the program has not been able to differentiate marketing strategies for the majority of projects that are neither large nor high-profile for other reasons. Instead the program has used a blanket approach to reach the market for such projects.

<sup>5</sup> Projects without square footage information were removed from the dataset prior to performing this analysis.

**Chart 2. Average Savings per Project vs. Building Size**

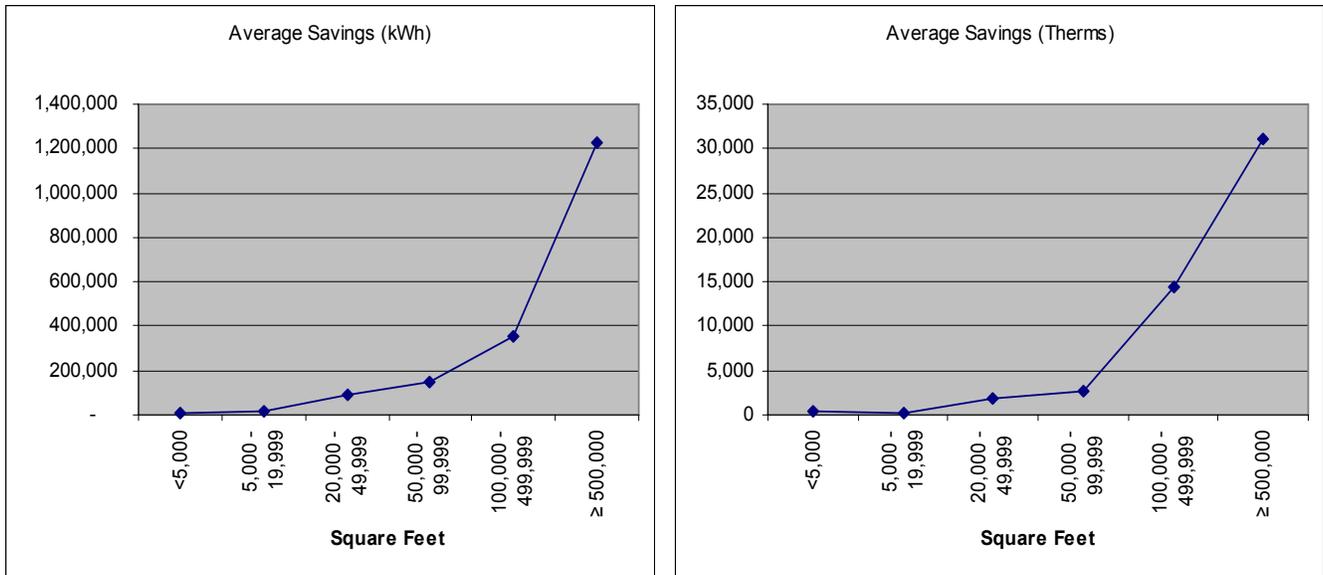


Table 4 provides an overview of how various buildings sizes stack up within each program track.

**Table 4. Building Size Compared with Number of Projects and Savings for Each Program Track through 11/1/07**

Building Area (sq. ft.)	Custom Track			Standard Track			Standard-Custom Track			LEED-NC Track		
	#	kWh	Therms	#	kWh	Therms	#	kWh	Therms	#	kWh	Therms
<5,000	0	0	0	30	128,595	13,383	0	0	0	0	0	0
5,001 - 19,999	15	502,087	237	108	1,274,225	19,632	3	202,895	7,645	0	0	0
20,000 - 49,999	34	4,328,227	49,319	59	2,149,034	16,749	9	2,893,628	118,674	2	111,831	5,919
50,000 - 99,999	18	4,301,965	72,764	21	1,907,311	8,966	5	188,186	35,923	1	179,836	7,370
100,000 - 499,999	15	8,177,341	594,302	23	2,419,831	51,194	7	5,165,970	6,534	0	0	0
≥ 500,000	2	2,454,163	62,248	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>84</b>	<b>19,763,783</b>	<b>778,869</b>	<b>241</b>	<b>7,878,996</b>	<b>109,923</b>	<b>24</b>	<b>8,450,679</b>	<b>168,775</b>	<b>3</b>	<b>291,667</b>	<b>13,290</b>
Percent of whole	24%	54%	73%	68%	22%	10%	7%	23%	16%	1%	1%	1%

**Custom Track.** One obvious distinction is that more than half of the electric savings and almost  $\frac{3}{4}$  of gas savings have come from projects that participated in the custom track even though only about  $\frac{1}{4}$  of the number of projects represent this substantial contribution of savings. It is not surprising that the average savings per project increases as the building size increases. Projects of all sizes have leveraged the Custom Track for energy efficiency projects. Projects over 100,000 ft<sup>2</sup> have yielded the most substantial savings return that the program because of the flexibility that it allows project owners to address energy efficiency in their applications. For natural gas, the Custom Track has been critical for helping the program to achieve gas savings. In general, Energy Trust has found it difficult to find and promote prescriptive cost-effective measures in the gas arena. The Custom Track provides a forum for new construction projects to bring large custom gas savings applications into play.

**Standard Track.** Standard Track participants also run the gamut of size, except for the very large projects. Standard Track projects constitute 68% of the total projects that the program has brought in the door but their savings total only adds up to 22% of the program's acquired electric and 10% of gas savings. More

than half of the total number of Standard Track projects is under 20,000 ft<sup>2</sup>. However, projects over 20,000 ft<sup>2</sup> constitute the vast majority of total Standard Track savings. This data demonstrates that small projects are more likely to use the Standard Track, and in general, the Standard Track is a useful starting point with projects under 50,000 ft<sup>2</sup>.

**Standard-Custom Track.** Standard-Custom Track projects are significant because they represent almost ¼ of the program's electric savings and 16% of gas savings even though the number of projects is less than 10% of the program's total. These projects have representation from buildings of all sizes except for the very small and the very large projects. Projects between 50,000-99,999 ft<sup>2</sup> have a noticeable dearth of electric savings when compared to project size on either side of their own range. Natural gas savings from projects in this range are noticeably more significant. It is expected, however, that these gaps will fill in as the number of participants increases over time. Average electric savings for the projects that leverage the Standard-Custom Track seem to be relatively high compared to other tracks. Average gas savings for this cohort is better than Standard Track but not as substantial as the Custom Track. Some of the projects that leverage this combined option do so because they have capped out on either the Custom or Standard Track and their project goals take them in pursuit of incentives via the other track. Conversely, some projects decide to use modeling techniques for a portion of their project but steer clear from modeling for measures that are offered prescriptively via the Standard Track.

**LEED-NC Track.** Thus far, LEED-NC Track projects have not played a substantial role in contributing to the program's overall savings acquisition. However, this should be changing as there are many projects presently enrolled in this program track. The three projects that have been completed via this track don't demonstrate remarkable energy savings. Staff expects that future project trends may sway this average upwards.

## **Program Modifications to Increase Market Penetration**

Program staff believes that the New Buildings program can increase annual savings acquisition. The strategy to do so is threefold:

- 1) Continue to enroll large projects in the program
- 2) Encourage projects that do participate in the program to implement more energy savings measures in their buildings
- 3) Increase penetration in small- to medium-size projects

Beginning in 2008, program staff will implement tactics to perpetuate this threefold strategy.

## **Continue to Enroll Large Projects in the Program**

As discussed previously, New Buildings program has achieved a high level of success in recruiting large projects. These projects help to bring in large amounts of cost-effective savings. In general, these projects are high profile and many are located in and nearby the Portland metropolitan area. Program staff has established good rapport with many of the architecture and engineering firms that work on large new construction projects. Staff is able to leverage these relationships to encourage project owners to take steps to implement efficiency measures in their new projects.

Portland and surrounding areas have earned a reputation as being rich in environmental ethos and this philosophy extends into the building market. This "buzz" encourages project owners to consider efficient building practices and the program serves as a financial vehicle to help them to overcome the obstacle of increased costs associated with more efficient technologies.

## **Encourage Participating Projects to Go Further**

Perhaps one of the most cost-effective channels to allow the program to acquire more savings is to encourage projects that are already participating in the program to adopt even higher levels of energy savings. Historically, the program has successfully relied on the owner's design team to identify and assess energy efficiency options. Going forward, the program will be making changes in incentive offerings and program structure to encourage participants in expanded markets to do more with their projects, including special technical assistance funding, technical assistance services in small and medium projects, and integrating the Energy Trust's solar incentives. Harvesting more savings per project will increase cost-effectiveness by reducing the administrative costs, associated with individual project outreach, per unit savings.

It is believed that the 2008 incentive changes discussed in the introduction will go a long way towards accomplishing this objective. Staff hopes that incentive increases in both Standard and Custom Tracks as well as the combine Standard-Custom Track will encourage participants to push the envelope for efficiency technologies for their projects than they would have otherwise if other incentive opportunities had been exhausted.

## **Increase Outreach to Small- to Medium-Size Projects**

As discussed previously the number of large projects is finite in the marketplace and construction trends are cyclical. The program believes that it has been successful in recruiting large projects. In order to increase market penetration and build a consistent base of annual savings the program believes that it needs to expand its penetration in the small- to medium-size project market. Staff believes that targeted media marketing and especially direct outreach are key to accomplishing this goal. The program has already taken steps to achieve this objective.

Media marketing channels such as ad placement and case studies are used to create a "buzz" in arenas that directly touch building owners. Media marketing has been constant throughout the program's history. However direct outreach has been the mainstay for establishing relationships that bring in the majority of the programs' savings. Architecture, engineering and project consulting firms (A&E firms) have been and remain the primary target market for the program. Working directly with these firms has proven to be the most cost-effective use of resources because most new construction projects employ their services. These firms have direct relationships with project owners and are able to communicate the benefits of energy efficiency to their clients. In addition to working with A&E firms, the program makes concerted efforts to reach out to municipalities, school districts, college campuses, health systems, individual project owners, etc. These relationships have been largely responsible for yielding savings from many of the large projects that have come through the program to date. Moreover, these same relationships have yielded significant numbers of moderate-size projects with savings that sum to substantial totals.

The program has undertaken two direct outreach campaigns that sent program staff in the field. The first campaign came soon after the program's inception. Campaign one was designed to familiarize the market with the program and its offerings. This campaign was staged throughout Energy Trust's service territory in Oregon. This campaign did create an early awareness of the program. As a combined effort of media advertising and this first wave of direct outreach the program has enjoyed success with projects throughout the state.

Campaign two began early in 2007 and it also took place throughout Energy Trust's service territory. This outreach effort was targeted to address existing relationships. Marketing and outreach personnel scheduled appointments throughout the state. Staff was careful to include savvy entities in the Portland

Metropolitan area as well as making efforts to reach out to entities that had historically had less participation in the program. This most recent effort was honed to bring entities that were already aware of the program up-to-speed on program updates and to inform others about the programs' offerings. During this wave New Buildings program staff specifically spent time processing applications with several firms that had multiple projects pending. These sessions proved to be time well spent as they yielded over 120 project leads and saved New Buildings program staff and A&E firm staff resources associated with continuous project iteration.

In 2008, the program will double the number of active program staff. Staff expects that this doubling will serve to expand direct marketing and outreach efforts in 2008. Program staff will expand to include: a) 4.5 more Outreach Program Managers, two of which will serve the southern, central and eastern sides of the state b) a full time staff member to focus on serving vendors and contractors and c) a staff member focused on technical support to help support a higher flow of applications. The majority of the additions of staff will be focused on direct outreach. Management expects that this tactic will enable the program to interact more directly with the market and recruit small- to medium-size projects that the program has historically missed. Moreover, part of this direct outreach effort will be tailored to address the design-build market to reach out to this largely untapped market.

## Conclusion

Ultimately, New Building program cost-effectiveness is dependent on the mix of projects that the program manages to enroll in the program. Program history demonstrates that projects of many sizes have leveraged the options available through the various program tracks. As such, program staff should work with individual projects to help them to determine which track best suits their project needs. The program staff will continue to recruit large projects, however, while it is expected that the total participation from large projects will begin to decrease over time, it is anticipated that the energy savings will persist well past the recruitment of these large projects. This necessitates efforts to recruit more small- to medium-size projects. Projects in this cohort may raise levelized costs because of the increased expense associated with recruiting and ushering projects through the program. Energy Trust supports investment in savings for the small- to medium- size demographic since new construction projects deliver opportunities for energy efficiency that exist for the decades of lifetime of the building. Investing in commercial new construction projects on the front end is a sound business decision.

Finally, the New Buildings program continues to refine and adapt both its incentive and service offerings to approach and capture different sectors of the new building market.

## References

Portland Business Alliance, Prepared by Heritage Consulting Group April 2007. *Central City Development and Redevelopment Project*