# Energy Trust New Buildings Program
# Process Evaluation Report 2
# Final

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# Executive Summary

This report presents the findings of the process evaluation of the Energy Trust of Oregon New Buildings (NB) program for 2012. The NB program provides financial incentives and technical assistance to owners who install energy efficiency measures in new commercial construction and major renovation projects. During the 2012 program year, incentives were paid for 312 sites, as shown in Exhibit ES-1.

**Exhibit ES-1 – 2012 Electric and Gas Savings -- Total**

| Sector | Projects | Savings | |
|---|---|---|---|
| | | kWh | Therms |
| New Buildings | 266 | 55,320,564 | 478,771 |
| New Multifamily | 46 | 2,229,870 | 49,660 |
| Total | 312 | 57,550,434 | 528,431 |

The goal of this process evaluation was to obtain feedback on program design and implementation that can be used to more effectively and efficiently deliver energy efficiency in new buildings and improve customer satisfaction. Evaluation activities included a combination of secondary data and program document review and primary data collection, including attending early design meetings, accompanying NB program staff on post-installation inspections, and interviews with 50 participants. In addition, the 2012 results of Energy Trust's Fast Feedback data collection effort were incorporated into the current evaluation findings.

Key findings reported in this report as drawn from these data collection and analysis activities are summarized below.

## Conclusions

- The NB program continues to meet its goals and the needs of new building owners and trade allies. Savings come from a diverse mix of participants in terms of track, building type, fuel, utility, and geographic region.

- The NB program has evolved into a highly effective new construction program, achieving savings above and beyond one of the most stringent building codes in the country, and engaging most of the key designers, engineers and owners in the Oregon market. The program has been successful in finding above-code savings opportunities, with significant savings attributable to the NB team's ability to assist design teams that otherwise might have had trouble meeting code.

- However, finding savings above and beyond code will become more difficult as a) the remaining 2007 Code projects work through the pipeline and b) the next, even more stringent code is introduced.

- In addition to increasing participation, the NB program appears to be engaging with many of its participants relatively early in the design and construction process. This has helped encourage more design teams to conduct early design meetings and charrettes, resulting not only in adoption of more comprehensive energy efficiency measures on individual projects, but also in market transformation as more owners, architect and engineers are receptive to such meetings and the wider range of energy efficient options they cause to be brought to the table.

- In the face of a challenging commercial new construction market, the NB program has been successful at adapting to opportunities and capitalizing on them, as with data centers, which accounted for half of 2012 kWh savings. At the same time, the program has been effective in working with hard-to-reach projects, with design-build and other small projects well represented in the mix of overall participants.

- Although the NB program continues to record the various tracks that projects enroll in, participants – whether owners or other members of the design team -- are generally unaware of the participation options available to them. Most of these participants rely on NB program staff to help them identify the appropriate path to participation.

- Participants also rely heavily on program staff to help them through the details of application process, particularly use of the Lighting and HVAC calculators.

- Customers are generally very pleased with the NB program, NB staff and the level of communication and support they receive. Concerns focus on:

    - Uncertainty regarding incentives, which sometimes means projects cannot capitalize the incentive into the decision process. In very tight budgets, this may actually prevent the project from including some energy efficiency.

    - The amount of incentives relative to the paperwork involved (particularly for large projects with relatively small incentives).

    - The amount of paperwork, including the multiple numbered forms whose function in the participation process is not always clear.

    - Extensive back and forth between the program and participants, with the perception that there are multiple information requirements as part of the participation process.

- Length of time to receive the incentive, with more than one-third of Fast Feedback survey respondents rating this 3 or lower on a 1 to 5 scale.
- Turnover among NB staff and managers, which was mentioned by several participants as a factor that added to the time and effort required for participation.

## Recommendations

Most of the recommendations made in the 2011 process evaluation report and summarized in Section 2 of this report have been or are being implemented by the NB program. The program is continuing outreach and networking activities through its trade ally network, successfully engaging many projects early in the design phase and providing early design assistance (EDA), and helping prepare the market for future code evolution. Outreach manager changes appear to be happening smoothly, and we did not encounter significant concern or confusion regarding tax credits or other offerings relative to the NB program. Finally, as noted in the evaluation, participants who used the calculators and sought assistance were very satisfied with the help they received, and other interview respondents also pointed out that the application process would have been much more difficult without the application assistance provided by the program.

One recommendation that has not been implemented has been the offering of an innovation incentive that would reward architects, engineers, owners, developers and others who pursue aspirational, highly efficient design. The concern is that this would benefit primarily firms who already pursue such designs routinely as part of their standard practice, and who would be free riders when claiming such an incentive. We believe this concern can be partly addressed by offering this incentive for the first project on which a firm achieves a specific percentage gain in efficiency over its previous best practice. This might encourage firms who currently strive for small incremental gains to push for a larger efficiency increase to qualify for the incentive.

Based on the conclusions summarized above and other findings throughout the report, the following recommendations are designed to help ensure that NB program efforts remain on track and addresses any aspects of program delivery that may inhibit participation.

- The program should continue its outreach to smaller projects through the use of market-specific packages and working with design-build projects. To support the latter, the program tracking data should include information on whether a project is design-build so that the outcomes of these projects can be tracked separately.
- As the NB program strives to engage projects earlier in the design process, it should maintain the emphasis on supporting early design meetings and charrettes. To achieve optimal results from these meetings, a single member of the design team should be formally designated as having responsibility for ensuring follow-up. In addition to the

$2,500 incentive for holding the EDA meeting/charrette, consider adding a small ($500) bonus incentive for the architect, engineer, or green building consultant to prepare a follow-up report that details what measures were ultimately incorporated into the design and why. In addition to the Early Design Assistance Report Template, the program should provide a sample report with a more detailed description of the type of discussion, estimated savings and level of specificity desired.

- Since participants are often unaware that they received code compliance assistance consider providing more concrete documentation of the services provided, such as an invoice for the value of the services provided with a "paid by Energy Trust" and $0.00 due shown on the receipt.

- Participants recognize the need for Energy Trust to document all aspects of NB program participation, but would appreciate any streamlining of the paperwork process, which would have the added benefit of reducing participant reliance on NB staff to complete forms. To the extent possible, it would be helpful to refer to forms by name rather than by number as a means of making the application process more user-friendly.

- As another means to make the participation process (including the selection of a program track or options) more transparent, Outreach Managers or other program staff could provide a brief summary of participation options tailored to what they know about a project (e.g., size, building type) to help guide their discussion with the design team regarding how to proceed. After a decision has been made, both a leave-behind and follow-up emails could be used to clarify the participation options and measures selected. Such a summary should include a description of Code Assistance if provided, along with estimated savings.

- Consider providing participants with an "X plus or minus 10%" guaranteed incentive level to facilitate equipment selection and budgeting, as well as potentially greater influence on the decision-making process.

- To encourage "deep savings," highlight the fact the program offers tiered incentives for custom projects that increase according to the extent by which the project exceeds code. To encourage innovation, offer a bonus incentive for the first 5 or 10 projects using an emerging energy efficient technology.

- Be proactive when staff turns over. Make every attempt to have new staff thoroughly up to speed not only on the program, but on individual projects. Make sure that a project history is available to new OMs or others for every individual they are likely to make contact with. Also, have the NB Program Manager at PECI place a follow-up phone call to every member of the design team for each project affected by a staff member's departure or change in responsibilities.

# MEMO

**Date:** November 20, 2013
**To:** Board of Directors
**From:** Jessica Rose, Business Sector Manager, New Buildings Program
Sarah Castor, Evaluation Sr. Project Manager
**Subject:** Staff Response to the New Buildings Program Process Evaluation Report 2 (Program Year 2012)

This is the second of two process evaluation reports on the New Buildings program. The first report, completed in 2012, covered findings from staff interviews and included a review of documents and program activity. This report, focusing on 2012 activity, includes results of a second review of program data and Fast Feedback results, as well as findings from interviews with participants and program allies involved with 2012 and 2013 projects. The results of the 2012 New Buildings Process Evaluation confirm program design decisions that took effect in 2010 are supporting the market, and continue to indicate market transformation impacts.

As noted in the 2011 evaluation report, the program plans to continue outreach activities, support early design, provide tiered incentives to encourage deeper savings and institute simplified calculators for both HVAC and lighting. Also, CRM will be further leveraged to mitigate the impact of any staff changes using methods indicated in the 2011 report.

Many of the recommendations made in the 2012 evaluation report are to refine program delivery in areas that are working well, including:

- Support early design processes to influence decision making with the project team and owner through code compliance assistance, Early Design Assistance and a lighting design consultation. The program plans to enhance early design practices by introducing new tools to assess savings strategies early, and also to continue offering plan reviews at no cost to the project that typically result in design changes that meet or exceed code. Based on the recommendations provided in this report, we are unsure if providing a zero-dollar price tag for services would help the customer see the value; often the value becomes apparent when they enroll the next project and seek savings rather than just meeting code requirements.

- Consideration will be made for refining the reporting process for projects receiving Early Design Assistance and modifying the look and feel of forms, as our web platforms and IT systems allow. New Buildings will continue to enhance internal processes to streamline delivery and improve what data can be tracked in our IT systems. While it is not practical to track design-build projects and firms specifically, the program is continuing to expand outreach to small and regional firms that do design-build work.

- The program will continue to recommend the most optimal track for a project based on the nature and goals of a project (information for each program track is available on our website). By presenting a customer with multiple options that come with detailed requirements in early project stages, we risk losing the customer because program

participation feels complicated and costly to participate. Our objective is to keep participation simple and focus on the overall savings goal.

- New Buildings will expand Market Solutions – packaged incentives tailored by building type – targeting small commercial building owners and will roll out two more packages in 2014 for a total of eight packages.

- Outreach materials describing the tiered incentive framework are provided to custom projects and help continually pull custom projects further up the ladder.

# 1. Introduction

This report presents the results of the process evaluation of Energy Trust of Oregon's New Buildings (NB) program for 2012. The NB program provides financial incentives and technical assistance to owners who install energy efficiency measures in new commercial construction and major renovation projects. The program began in August 2003 and is currently administered for Energy Trust by its program management contractor (PMC), Portland Energy Conservation Inc. (PECI), which took over the program's administration in 2009.

To be eligible to receive electric incentives from the NB program, a site must be served by Portland General Electric or Pacific Power. To be eligible to receive natural gas incentives, a site must be served by NW Natural or Cascade Natural Gas. Commercial building types eligible to receive incentives include but are not limited to office, retail, healthcare, warehouse, storage, restaurant, manufacturing, grocery, hotels, motels, public and private schools or colleges, mixed-use, high-rise multifamily residential (more than three stories), and parking garages.

For several years extending into the 2012 program year, the program has been adjusting to the 2010 Oregon Energy Efficiency Specialty Code for new commercial construction in Oregon, which increased baseline efficiency approximately 15% over the 2007 code. This has required Energy Trust and its PMC to develop new program offerings that encourage building owners and developers to construct even more efficient buildings than required by the new code. However, given the long lead time in construction, about 12 percent of the buildings participating in the NB program in 2012 were subject to the 2007 energy code, and the program has been working simultaneously with projects subject to the two different codes and respective program offerings even as it prepares for the next code cycle.

The overall goals of the 2012 NB program process evaluation are: to obtain feedback on program design and implementation that can be used to improve the design and delivery of the current program, help it more effectively achieve energy savings in new buildings, and improve customer satisfaction – particularly in light of the changing code requirements in 2010 and a code change anticipated to take effect within the next year or two. For this phase of the evaluation, activities focused on:

- Documenting program implementation activities and changes in program design in response to market and code requirements
- Describing the distribution of 2012 participation by fuel type and across:
    - Code requirements
    - Utilities
    - Market segments

    - Measures/end uses
    - Program participation options
    - Geographic location.

- Observing or attending early design meetings to better understand how they are structured and how design team interaction at these meetings influences choices regarding building options and program participation.

- Riding along with program staff on several site visits to observe the process by which installed measures are verified and inspected.

- Interviewing participants, focusing on how early design assistance has influenced building designs and on how the NB program influences participants' design choices, particularly for those who were initially undecided about what program options to pursue.

- Analyzing results of 2012 Fast Feedback surveys and comparing them to the results of interviews conducted as part of this evaluation.

# 2. Evaluation Methodology

To address the above goals, the evaluation team relied on secondary data, program document review and in-person and telephone interviews with program staff. Each of these data sources is discussed below.

### *DOCUMENT REVIEW AND SECONDARY DATA*

Review and analysis of NB program data and documents helped provide an understanding of how the program was implemented in 2012 and supported the analysis of participation patterns, including their evolution over the past several years. Secondary data sources included:

- Participant tracking dataset
- Monthly reports and the Energy Trust Annual Report
- Write-ups of charrettes and early design meetings
- Fast Feedback results
- Other market research conducted for the New Buildings program

### *PRIMARY DATA*

Primary data collection comprised both in-person visits and meetings as well as telephone interviews.

### *EARLY DESIGN MEETINGS*

Members of the evaluation team attended early design meetings to observe the interaction between the design team and owner representative. This gave us a better understanding of how these meetings influence decisions regarding building options and program participation.

We attended, either by telephone or in person, four design team meetings, including one of each of the following building types:

- grocery store
- medical clinic
- university campus machine shop building
- off-campus student housing

### *SITE VISITS*

Evaluation staff accompanied NB program staff on four site visits to observe the process by which installed measures are verified and inspected. Sites included a supermarket, a mixed use apartment building, and two schools.

### *PARTICIPANT INTERVIEWS*

To obtain feedback from participants, we conducted telephone interviews with a total of 50 individuals representing 40 projects. While owners and their representatives made up most of the respondents, we also obtained feedback from architects, engineers and consultants, as shown in Exhibit 2-1.

**Exhibit 2 - 1 –Completed Interviews, by Function**

| Project Role | Completes |
|---|---|
| Owner/owner's representative | 31 |
| Architect | 10 |
| Engineer | 3 |
| Consultant | 6 |
| Total | 50 |

The current evaluation is meant to build upon the results of the 2011 process evaluation report (http://energytrust.org/library/reports/121001_NB_Process_Evaluation.pdf). That evaluation found that the NB program was running smoothly and effectively enrolling enough participants to meets its goals. The 2011 evaluation contains the following recommendations to ensure that these efforts remain on track:

- Continue outreach and networking activities, with a particular emphasis on working with trade ally networks to keep them informed not only about program updates (e.g., new market-specific offerings) but also about relevant code and tax credit developments.
- Early Design Assistance appears to have both direct savings and market transformation effects, and should be pursued whenever possible by engaging projects early in the design process.
- The NB program is already taking steps to prepare the market for the next code through the requirements of the Oregon Reach Code (ORC), and should continue these efforts through work with trade ally networks and other organizations such as AIA, Cascadia,

and the Building Energy Simulation Forum (formerly the Building Simulation Users Group).

- In light of the number of new people in Outreach Manager (OM) positions who serve as the primary point of contact between participants and the NB program, the program should take steps to ensure a smooth transition. While the initial emphasis is naturally on transitioning currently active projects to the new OMs, it would be worth following up with past participants and other market actors in the affected market or geographic territory to establish or re-establish ties with the NB program through the new OM.

- Provide customers with accurate and timely information both on the status and requirements of tax credits and other incentives and on how to apply for them – especially for those credits that may be awarded using a competitive process -- even though these credits are wholly separate from the NB offering.

- Offer an Innovation Incentive that rewards architects, engineers, owners, developers and others who pursue aspirational, highly efficient design. This incentive would enhance the NB program's role as a key player in supporting high performance building design in Oregon.

- OMs will need to continue to provide application assistance given the increasing complexity of design tools (e.g. calculators) used to participate in the program under the 2010 code requirements, particularly as product offerings target markets with smaller buildings and perhaps less sophisticated design teams.

# 3. Results

## 3-1 – Current Program Status

For 2012, the NB program made a number of changes before and during the year to address market trends and participant concerns.

- To better serve the most common types of small commercial buildings, the program developed and began offering market-specific packages with tiered incentives for restaurant, multifamily, office, school and retail buildings. The offers are comprehensive packages of measures with modeled savings that eliminate the need for more costly integrated design for small projects, which typically use a design-build approach.

- The number of firms in the New Buildings program allies group grew from 56 at the start of 2012 to 71 at the end of the year, broadening the program reach to more easily serve new customers. Program allies include architects, engineers, green building consultants, developers and others.

- For the year, the NB program and its Lighting Designer subcontractor achieved a total of 30 design reviews for design-build projects with trade allies.

- New Buildings helped prepare the market to meet more stringent requirements of the Oregon Energy Efficiency Specialty Code and future code upgrades through work with trade and program ally networks and organizations such as the American Institute of Architects and Cascadia Green Building Council.

## 3.2 -- 2012 Program Participation

The New Buildings Program's performance for calendar year 2012 as presented in the Energy Trust annual report is summarized in Exhibit 3-1. In all, the program closed 312 projects in 2012, a 4 percent increase over 2011; it enrolled another 385 projects for future completion.

**Exhibit 3-1 – 2012 Electric and Gas Savings -- Total**

| | | Savings | |
|---|---|---|---|
| Sector | Projects | kWh | Therms |
| New Buildings | 266 | 55,320,564 | 478,771 |
| New Multifamily | 46 | 2,229,870 | 49,660 |
| Total | 312 | 57,550,434 | 528,431 |

Savings and goals for 2012 are presented in Exhibit 3-2, which shows that the program achieved 194% of its overall kWh stretch goal and 102% of its gas stretch goal. Savings achieved as a percentage of goal were highest for Pacific Power and lowest for NW Natural.

**Exhibit 3-2 – 2012 Electric and Gas Goals and Savings**

| | 2012 Savings (net) | 2012 Stretch Goal | % Stretch Goal Achieved |
|---|---|---|---|
| **Electric** | **kWh** | **kWh** | **%** |
| PGE | 26,691,978 | 17,364,848 | 154% |
| Pacific Power | 30,858,456 | 12,337,947 | 250% |
| **Total Electric** | **57,550,434** | **29,702,795** | **194%** |
| **Gas** | **therms** | **therms** | **%** |
| NW Natural | 419,578 | 475,321 | 102% |
| NW Natural DSM | 63,895 | | |
| Cascade Natural Gas | 44,959 | 42,792 | 105% |
| **Total Gas** | **528,431** | **518,113** | **102%** |

As noted earlier, the program continues to work with projects that are being built to both the 2007 and 2010 codes, with the percentage of projects conforming to the 2010 code naturally increasing over time. The number of projects closing in 2012 that had used various participation options or "tracks" – including the 2007 and 2010 code baselines – is shown in Exhibit 3-3.

**Exhibit 3-3 – Projects by Type, Option and Code**

| New Building Project Type | 2012 |
|---|---|
| **Commercial Buildings Projects** | **266** |
| 07 Custom | 5 |
| 07 LEED | 10 |
| 07 Standard | 8 |
| 07 Standard / Custom | 5 |
| **TOTAL 2007 CODE** | **28** |
| 10 LEED | 5 |
| 10 Prescriptive & Analysis | 19 |
| 10 Prescriptive Only | 195 |
| 10 Analysis Only | 8 |
| 10 Undecided | 5 |
| **TOTAL 2010 CODE** | **232** |
| Core Performance Pilot | 4 |
| Net Zero Pilot | 2 |
| **Multifamily Projects** | **46** |
| 07 Standard | 8 |
| 07 Standard / Custom | 1 |
| **TOTAL 2007 CODE** | **9** |
| 10 LEED | 1 |
| 10 Prescriptive & Analysis | 1 |
| 10 Prescriptive Only | 32 |
| 10 Undecided | 2 |
| **TOTAL 2010 CODE** | **36** |
| LRM ESTAR | 1 |
| **All Projects** | **312** |

The results show that even in 2012, 37 of the projects that closed (about 12% of the total) participated using the 2007 code baseline, reflecting many projects that were still eligible to use this code because of the date their permit was filed. Although they accounted for about one-eighth of the total projects, participants subject to the 2007 code accounted for more than 57% of kWh and 42% of therms savings.

The proportion of kWh and therms savings accounted for by each track is shown in Exhibit 3-4. Savings per project were about 16% higher in 2012 than they were in 2011, despite the challenges faced by the NB program as codes become more demanding.

**Exhibit 3-4 – Savings by Track and Code**

| Track | No. of Projects | % of Projects | % of kWh | % of therms |
|---|---|---|---|---|
| 07 Custom | 5 | 1.6% | 40.8% | 14.8% |
| 07 LEED | 10 | 3.2% | 10.3% | 19.1% |
| 07 Standard | 16 | 5.1% | 1.1% | 3.8% |
| 07 Standard/Custom | 6 | 1.9% | 5.4% | 4.6% |
| 10 Analysis only | 8 | 2.6% | 14.9% | 1.0% |
| 10 LEED | 6 | 1.9% | <.1% | <.1% |
| 10 Prescriptive & Analysis | 20 | 6.4% | 10.6% | 10.2% |
| 10 Prescriptive only | 227 | 72.8% | 15.7% | 42.9% |
| 10 Undecided* | 7 | 2.2% | 0.0% | 0.0% |
| Core Performance Pilot | 4 | 1.3% | 1.2% | 1.6% |
| LRM Estar | 1 | 0.3% | <.1% | <.1% |
| Net Zero Pilot | 2 | 0.6% | 0.1% | 1.9% |
| **Total** | **312** | **100.0%** | **100.0%** | **100.0%** |

* Undecided participants received incentives for design assistance, with no associated savings in 2012

The program's 2012 program tracking data provide several breakdowns of savings by end use and sector. Exhibit 3-5 below shows the declining importance of LEED measures in the overall savings, as well as the dramatic increase in the share of "other" end uses. An analysis of 2012 program tracking data shows that lighting accounted for about 18.5% of estimated kWh savings – up from 14% in 2011 – while motors and other measures accounted for nearly two-thirds of kWh savings. Two data centers accounted for approximately 25 million kWh, or some 40% of all 2012 kWh savings.

**Exhibit 3-5 – kWh Saving by Measure Group**

| Measure Group | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|
| LEED | 11,823,955 | 11,276,835 | 5,409,556 | 6,168,408 |
| | 48.2% | 24.6% | 15.3% | 10.3% |
| Lighting | 8,308,790 | 7,123,645 | 4,805,032 | 11,090,915 |
| | 33.9% | 15.5% | 13.6% | 18.5% |
| HVAC | 3,765,883 | 1,291,811 | 4,410,172 | 3,933,563 |
| | 15.4% | 2.8% | 12.5% | 6.6% |
| Motor and Other | 633,287 | 26,119,437 | 20,789,434 | 38,702,646 |
| | 2.6% | 57.0% | 58.7% | 64.6% |

A breakdown of savings by building type for 2012 calculated from program participation data, shown in Exhibit 3-6, illustrates the dominant role that data centers have played in enabling the NB program to attain its ambitious kWh growth targets. Note that none of the other building

types accounted for more than 10% of kWh savings. Gas savings were more evenly distributed; schools and universities contributed 32% of therms savings, hospitals/health care, multi-family and other buildings all accounted for at least 10% of the total.

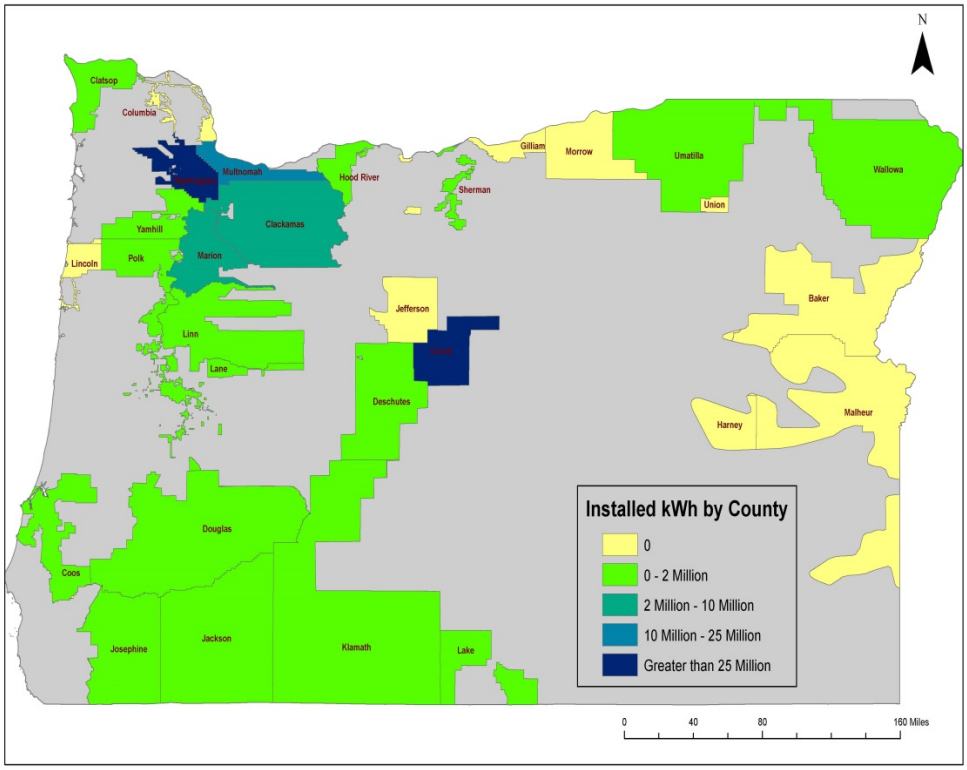
**Exhibit 3-6 –Savings by Building Type**

| Sector | Savings | 2010 | 2011 | 2012 |
|---|---|---|---|---|
| Schools & universities | kWh | 4% | 11% | 8% |
| | therms | 22% | 26% | 32% |
| Offices | kWh | 6% | 5% | 5% |
| | therms | 20% | 13% | 8% |
| Data centers | kWh | 0% | 45% | 51% |
| | therms | 0% | 0% | 0% |
| Hospitals/health | kWh | 2% | 15% | 6% |
| | therms | 1% | 26% | 16% |
| Multifamily & high rise | kWh | 7% | 6% | 1% |
| | therms | 21% | 7% | 10% |
| Infrastructure | kWh | 66% | <1% | <1% |
| | therms | <1% | <1% | 0% |
| Grocery | kWh | 3% | 5% | 8% |
| | therms | 4% | 2% | 6% |
| Lodging/hotel/motel | kWh | 2% | 0% | <1% |
| | therms | 2% | 1% | <1% |
| Restaurants | kWh | 0% | 1% | 1% |
| | therms | 4% | 7% | 9% |
| Retail | kWh | 3% | 5% | 8% |
| | therms | 3% | 5% | <1% |
| Other | kWh | 6% | 7% | 10% |
| | therms | 24% | 14% | 17% |
| **TOTAL** | **kWh** | **100%** | **100%** | **100%** |
| | **therms** | **100%** | **100%** | **100%** |

In terms of project size, 85 percent of all projects in 2012 were small commercial buildings -- defined as 70,000 square feet or smaller (excluding small data centers.) These buildings accounted for 30 percent of electric savings and 50 percent of gas savings. Data centers, which accounted for over half of kWh savings, ranged in size from 52,000 to 203,000 square feet.

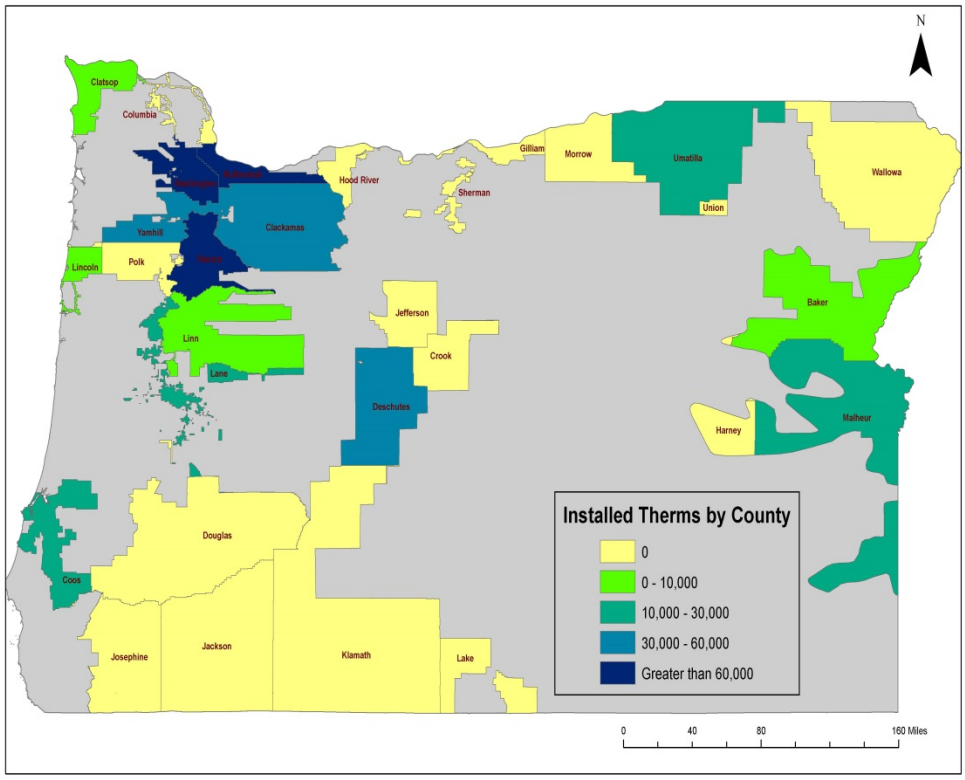
Finally, we analyzed the geographic distribution of program savings for 2012. Not surprisingly, most savings for both gas and electric continue to be located in the greater Portland area. For electric savings, however, the map in Exhibit 3-7 shows the effects of a few data center project located well away from major cities, such as the high level of savings in Washington County and Marion County. The map also shows some electric savings in the Northeastern part of the state, where there were none in 2011. Therms savings were highest in the northern part of the state, but were also significant in Deschutes County, as shown in Exhibit 3-8.

## Exhibit 3-7 – kWh Savings by County – 2012




Produced by Wirtshafter Associates Inc.,

## Exhibit 3-8 – Therms Savings by County – 2012




Produced by Wirtshafter Associates Inc.,

## 3.3 -- 2012 Participant Feedback

Several aspects of program participation were of particular interest in obtaining and analyzing feedback from participants for the evaluation of the 2012 NB program. We outline the ways in which we obtained feedback from NB participants in 2012 below.

- To assess participant perceptions of the early design assistance process, we attended early design meetings or charrettes and conducted interviews with some of the participants in these meetings, as well as other individuals involved in projects that received early design assistance.

- Because program participation data identified more than 90 projects as having received the measure "Code Assistance" with no associated incentives but savings of 2.8 million kWh and 16,000 therms, we wanted to understand how participants perceived this assistance and whether they recognized its value as a separate program service.

- In order to investigate how participants decide what program options or tracks to pursue, we interviewed 17 people associated with projects that were identified in the tracking data as "undecided" regarding which track they were going to pursue as of the end of calendar 2012.

- We wanted to obtain general feedback from the overall participant population, including those who used the various participation options, such as analysis only, prescriptive only, and prescriptive plus analysis.

- We had hoped to target participants who had used the market-specific packages with tiered incentives for restaurant, multifamily, office, school and retail buildings to determine how well this relatively new program offering is being received by the market, but we were unable to contact any representatives of the few projects using this option in 2012.

There was no formal sampling plan with statistical precision goals. Instead, we sought feedback from a mix of participants so that the various participation options were represented, but with a particular emphasis on: 1) participants who received code assistance, 2) participants who received early design assistance and held a charrette, and 3) participants who were described as "undecided" about their participation option in the program database. Throughout the analysis, we were mindful of how feedback might vary among participants who had different roles on projects or used different features of the program, looking in particular at differences between owner representatives and other members of the design team.

## Program Awareness and Participation

About two-thirds of respondents said they had first heard of the NB program in 2010 or earlier; those who had found out about it more recently typically did so through a colleague on the project or from a NB program representative.

Of the 50 respondents, 21 (42%) said their project was in the programming[1] or conceptual design phase when they first made contact with the NB program, while another 21 said they were in schematic design or design development, indicating that the program is generally becoming more successful in getting involved with new projects relatively early in the design and construction process. As shown in Exhibit 3-9, the remainder were either in construction drawings/specification (8%) or in construction (8%).

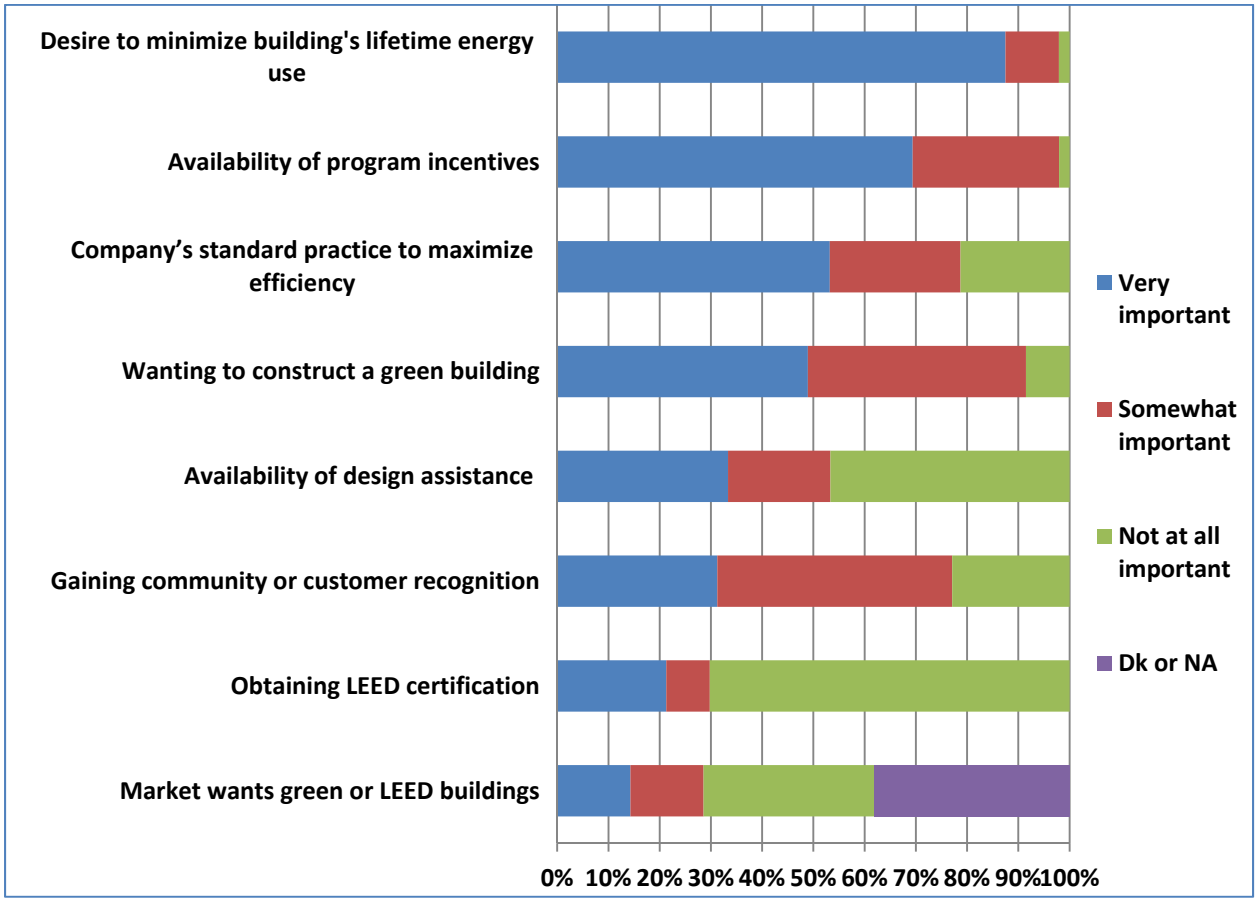
**Exhibit 3-9 – Project Stage at Time of Program Contact**

| Stage at time of program contact | No. of Responses |
|---|---|
| Programming | 12 |
| Conceptual design | 9 |
| Schematic development | 11 |
| Design development | 10 |
| Construction drawings, specification | 4 |
| Bidding and bid review | 0 |
| Construction | 4 |

When asked to rate the importance of various influences on their decision to participate in the NB program, respondents assigned the highest importance to the desire to minimize their new building's lifetime energy use, followed by the availability of incentives and then by the desire to construct a green building and their organization's standard practice of maximizing efficiency of new buildings. Results are presented in Exhibit 3-10.

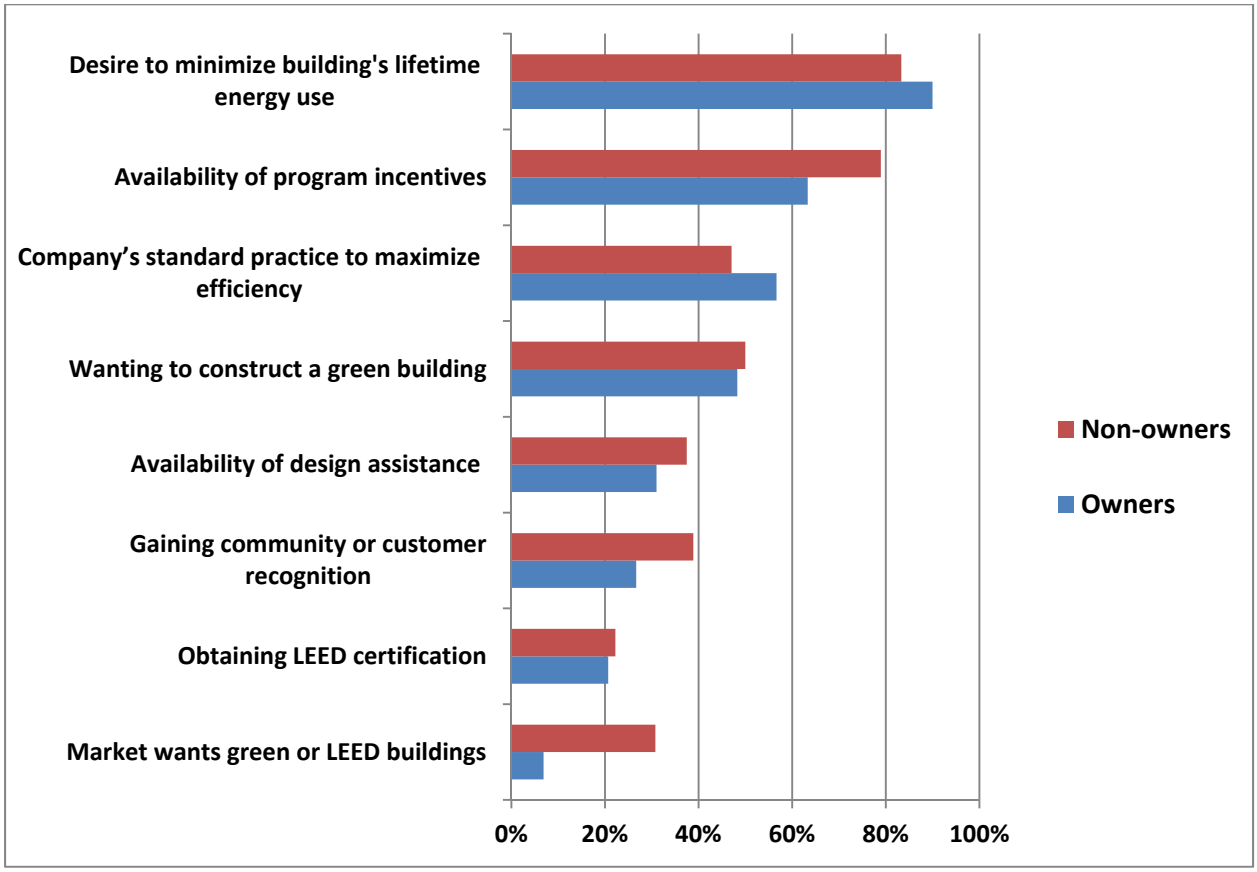
[1] In this context, programming is the design phase where the design team establishes the criteria on which the design is based, and by which it is later evaluated.

**Exhibit 3-10 – Importance of Reasons for Program Participation (n=50)**




To investigate whether owners had different reasons for participating than non-owner respondents, we compared each group's percentage of "very important" responses for the various factors. Results, shown in Exhibit 3-11, indicate that owners consider minimizing lifecycle costs as more influential and incentives as less influential than non-owners. This may be because architects, engineers, and consultants see incentives as helping to compensate them for extra time associated with program participation. Note also that fewer owners considered community recognition or the market's desire for green building as very important – the latter because most owners were participating with buildings their organization would occupy.

**Exhibit 3-11 –Owners (n=29) and Non-Owners (n=19) Rating Reasons to Participate as "Very Important"**




When asked if there was a specific factor that was the most important or that pushed them "over the edge" to participate, most respondents said their decision was based upon multiple factors, but 19 specifically mentioned the incentives, while 7 cited energy savings over the lifetime of the project.

To analyze barriers to participation, respondents were asked if they had any concerns about participating in the program or encountered any barriers. More than 80% (41) said they had none. For the remainder, concerns centered on the paperwork and administrative requirements involved in participation, along with the associated cost. One facility manager who has participated in the program multiple times noted that, "*We do encounter some resistance from firms that they do not want projects involved in the NB program, as it is both costly and time consuming, and the design support funds do not cover the entire costs of participating….The perception is there's a lot of back and forth; that the New Buildings program keeps coming back for more info. They need a more concise process to counter this perception.*"

Several other respondents mentioned the uncertainty surrounding the amount of incentive they would receive. The program cannot provide a definite incentive amount during the planning

stage, which is the time that many projects need to know for budgeting purposes. Without the assured funds, the projects cannot capitalize the incentive into the decision process. In very tight budgets, this may actually prevent the project from including some energy efficiency. Even in projects with a more secure or available funding stream, the uncertainty of the incentive means the incentive does not greatly influence the decision process. In the case of a school project, incentive money that the project manager wanted to use to install more energy efficiency could not be used for that purpose because the amount of incentive was unknown at the time decisions needed to be made. The project manager reported that when the incentive money was finally sent to the school, it was too late to incorporate more energy efficiency so it was used to buy playground equipment.

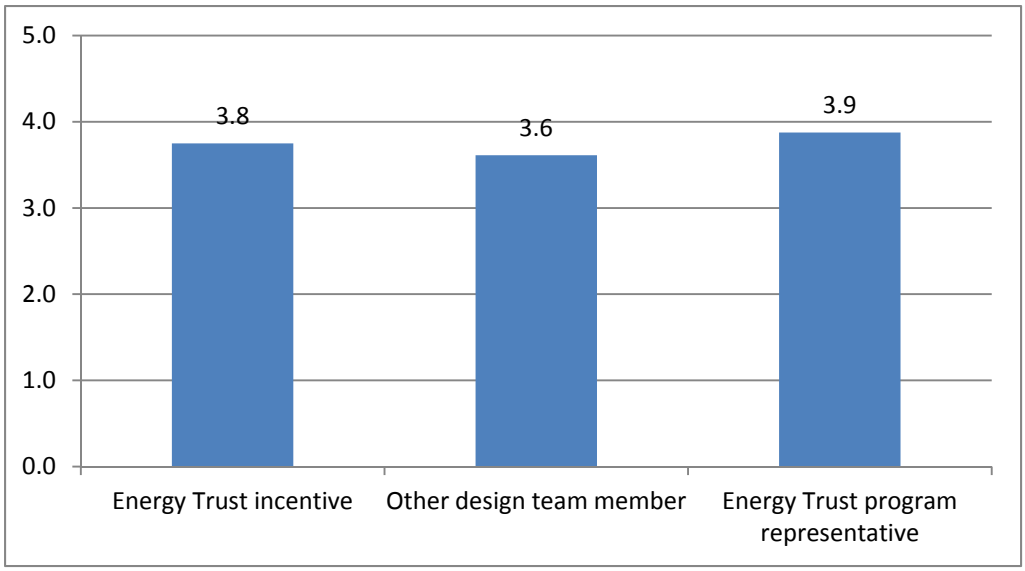
Regarding their satisfaction with the application process, 80% of respondents provided a rating of 4 or 5 on a 1 to 5 scale, with a mean rating of 4.3 (n=47). Despite concerns regarding the complexity of the process, no respondents provided a rating lower than 3, and several commented favorably on the assistance provided by program staff to facilitate the application process. One participant did suggest, *"to streamline the process, call forms by relevant names in addition to their numbers."*

## Code Compliance Assistance and Early Design Assistance

According to the 2012 participation records, 12 of the individuals we interviewed were involved with projects that received Code Assistance. When asked about their experience with this aspect of the program, however, only a few specifically recalled receiving code assistance, suggesting that the NB program needs to be much more diligent in letting participants know that they did, in fact, receive this assistance, and that there were specific energy savings associated with it. Only two respondents recalled the code assistance in enough detail to be able to rate their satisfaction with the help they received; one rated it a 4, the other a 5. One of the two specifically recalled that the program suggested the use of LEDs to meet code, and pointed out that his organization is now *"using LEDs on all projects."*

A separate set of questions was asked of the 21 participants who had used the Early Design Assistance (EDA) option of the NB program. First, respondents were asked about the extent to which several factors influenced their decision to hold a charrette or design team meeting, using a 1 to 5 point scale, where 1 is no influence and 5 is a great deal of influence. Results, shown in Exhibit 3-12, indicate that the program incentive was more influential than suggestions from other design team members, but slightly less influential than the NB program representative. These differences are not statistically significant.

**Exhibit 3-12 – Influences on Decision to Hold Early Design Meeting, 1-5 scale (n=18)**




When asked to describe their experience and any changes that emerged from the EDA, the respondents gave an array of answers. Illustrative responses include an owner's representative who said that the charrette produced a reduction in lighting levels, more use of lighting controls, and a more efficient HVAC system; an architect who noted lights and daylighting; and a facilities manager who attributed the adoption of LED lights and economizers to the charrette. An architect on a project not yet finished with design recalled that during the charrette they discussed whether the new HVAC equipment would be a water or air system.

Several respondents praised the EDA. One experienced architect felt that Energy Trust always helped them push sustainability by guiding the design team and suggesting measures. He admitted that clients usually only accept 75% of these recommendations. Another architect noted that EDA was an intense half day, which was helpful because it brought all the parties together to put the full range of options on the table for everyone from the community to consider. An owner's representative found that the charrette provided a benchmark for possible goals and energy savings that was identified before the charrette. They were able to use the charrette to discuss a variety of measures, eliminating many of those measures, and focusing in on those that made the most sense. This idea was echoed by another participant, a green building consultant, who felt that the charrette was an efficient way to establish priorities.

Several respondents said that the more concrete the information available regarding savings and incentives for specific measures, the more productive the charrette. One owner commented that the detailed information the NB program representative at the meeting was able to provide greatly facilitated the discussion. In cases where specific information is, of necessity, not available at the time of the charrette, providing such information as soon as possible after the meeting ensures that it can be incorporated into the design discussion.

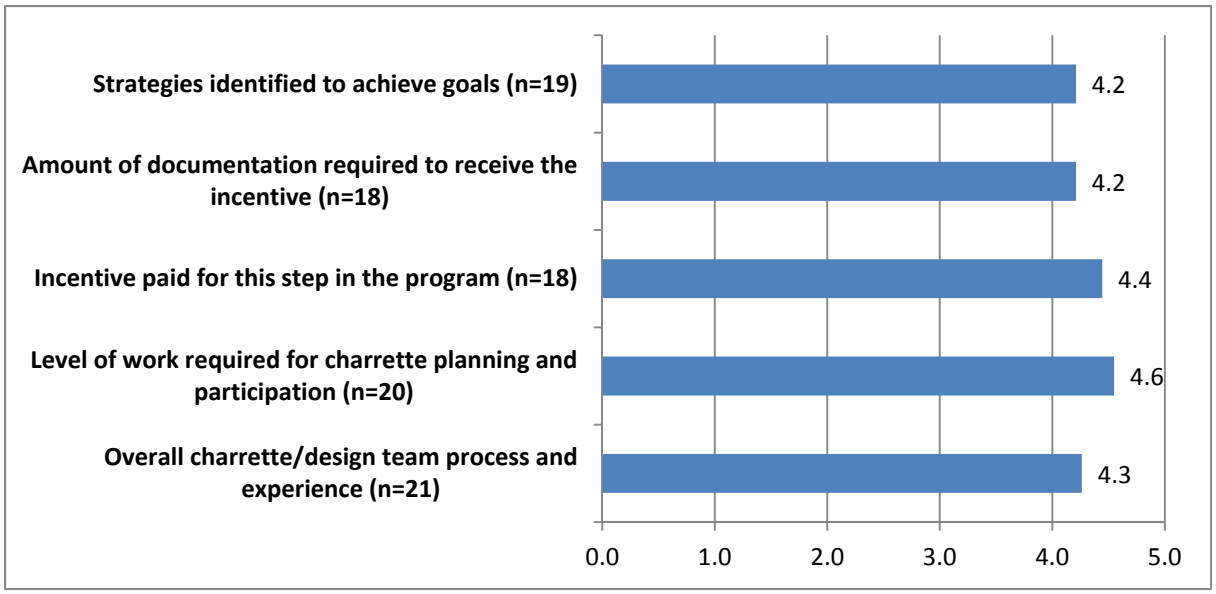
EDA participants were also asked whether they would have held the design meeting or charrette if the Energy Trust incentive and information had not been available. Of the 18 who responded, 7 (39%) said they would have held the exact same meeting; the rest either said they would not have held such a meeting at all (39%) or held it on a smaller scale (22%). One architect commented that the meeting would have consisted of *"me and the engineer."* Another architect noted that this type of charrette is standard practice for her firm, which holds these kinds of charrettes with the owner and design team on fire sprinkler systems, structural equipment, and green building services for all their larger (more than 500,000 square foot) buildings. Three other respondents also said they hold energy efficiency charrettes all or some of the time, but two said they never have charrettes, with one adding that they would not have held the one for this project without the incentive available from the NB program. It should be noted that all four of the EDA meetings we observed or attended by phone focused almost exclusively on aspects of design related to energy use.

A facility manager with a portfolio of buildings said he used EDA a little late in their first effort, so they were only able to incorporate a portion of the ideas that were discussed in the design assistance charrette through the NB program. Since that effort, the facilities manager is now incorporating energy decisions into the process from the earliest design, and larger savings are being realized. This suggests that EDA support has perhaps helped generate market transformation, or at least spillover.

The levels of satisfaction with various aspects of EDA are presented in Exhibit 3-13. The overall high level of satisfaction is noteworthy, with 87% rating it 4 or 5 out of 5, or a mean rating of 4.3 out of 5. Comments offered by the few respondents who offered low ratings include:

- *"It's a good exercise, but the incentive does not cover cost. Also, there is no mechanism to make sure that things discussed are followed up."(Architect)*
- *"The HVAC sub-contractor was not creative and there were few options to discuss."(Architect)*
- *"The EDA did not go as I hoped because the designs were not very efficient. But the charrette did communicate the level of care about energy efficiency by the owner, and now the A&E firm sees this and cares more."(Owner)*

**Exhibit 3-13 – Satisfaction with Early Design Assistance, 1-5 scale**




In the charrettes and early design team meetings attended or observed by the evaluation team, the level of follow-up was directly related to the diligence of the individual responsible for organizing the meeting – typically an engineer, efficient building consultant or staff member responsible for efficient/green building design for multiple facilities. While the NB program requires that the meetings be documented and a written report provided to claim the $2,500 incentive, the level of detail provided in the reports varies, with some of those observed by the evaluation team providing a summary of what was discussed, but lacking detail regarding actions considered and likely to be implemented. The program does provide an Early Design Assistance Report Template, but this template does not provide information on how much detail is required.

On the other hand, most of the charrettes generated a series of follow-up emails where individual actions were discussed, investigated and ultimately accepted or rejected by the owner. In these cases, the charrettes seem clearly to have expanded the range of options considered for the design and heightened both the awareness of energy efficient options and the design team's perception of the importance of including them wherever possible. One owner's representative noted that the charrette had been instrumental in keeping high quality, highly efficient equipment from being value-engineered out of the design. The program can reinforce this benefit of the charrettes by helping provide timely data on specific savings and other benefits associated with qualifying measures. The key seems to be the willingness of one team member to take the lead in following up on the design meetings. To facilitate that, one individual should be designated by the design team and tasked with generating follow-up within a specific time after the meeting.

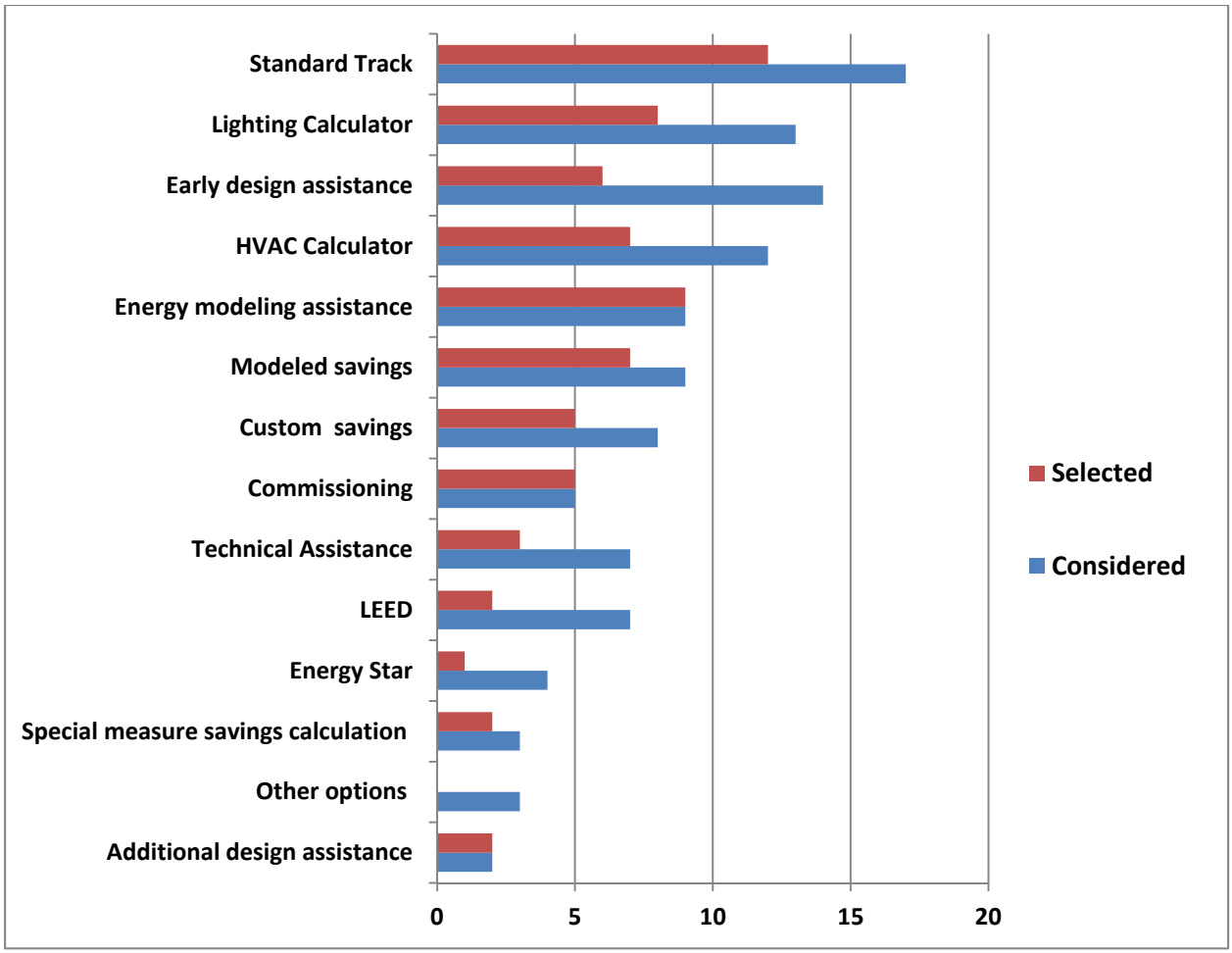
## Selection of Participation Options

Because one area of interest was the process by which participants select among the numerous NB program options, we asked respondents which options they had discussed with program staff

or considered, and which ones they had selected. Many respondents struggled with this question because they did not recall discussing various participation options in these terms. Several offered comments that they basically had no idea of what option they chose, but that they had discussed alternatives with the Outreach Manager in general terms and had chosen what was best for their project.

Those who were aware of the options they considered typically offered multiple responses for both questions, although it must be noted that only 17out of 50 respondents offered answers to these question. Results, presented in Exhibit 3-14, show that while multiple options were considered participants most often considered the standard or prescriptive track.

**Exhibit 3-14 – Number of Participants Considering and Selecting Various Options**




In general, more participants considered, rather than selected the option, but all those who considered either energy modeling assistance (n=9) or additional design assistance (n=2) ended up selecting that option as well. The greatest disparity between the number that considered an option and the number that selected it was for early design assistance, technical assistance, LEED and Energy Star. It is important to bear in mind that of the full interview sample, 21

actually used early design assistance. All respondents said either that they were satisfied with their decision regarding the options selected, or that they were waiting to see how the project would turn out.

## Undecided Participants

Almost half of the 17 respondents for whom the "track" was listed as "undecided" in the program data said they still had not determined which path they would use to participate in the NB program. Most of those who had not decided said they were currently in construction drawings and specifications, and two noted that they would be making this decision within the next several weeks. Two did not specify what stage their project was in.

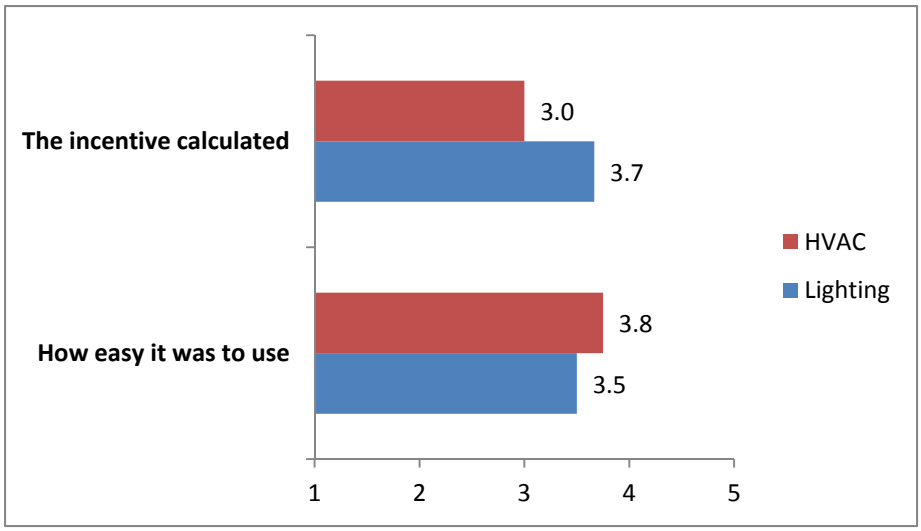
As with the overall sample of participants, many undecided respondents were not aware of the specific alternatives that they were choosing from. Again, many were counting on NB program staff to guide them through the participation process. There is clearly no need to burden participants with additional program-specific jargon regarding options, but there did not seem to be an understanding among respondents that there might be pros and cons associated with the various tracks. In addition to relying on program staff for assistance, some participants explained that they either had or would *"balance the effort required versus getting the best incentives for the project."*

If Energy Trust in fact wants participants to be better informed about the attributes of specific program options, it may be worth summarizing those in a handout that the design team can review as decisions are being made. Similarly, once the team – either independently or with input from NB program staff – has made a decision, participants would benefit from a summary statement describing the path selected.

## Lighting and HVAC Calculators

Since 2012 was the first full year in which the former "prescriptive" track was replaced by the use of calculators for both lighting and HVAC measures, we wanted to ask participants about their experience with this new approach. In all, we obtained feedback from four respondents for each of these tools. In addition, several participants said they would or might be using the calculators on their projects, but had not done so yet. As shown in Exhibit 3-15, users of both lighting and HVAC calculators were moderately satisfied.

**Exhibit 3-15 – Satisfaction with Calculators, 1-5 scale (n=4)**



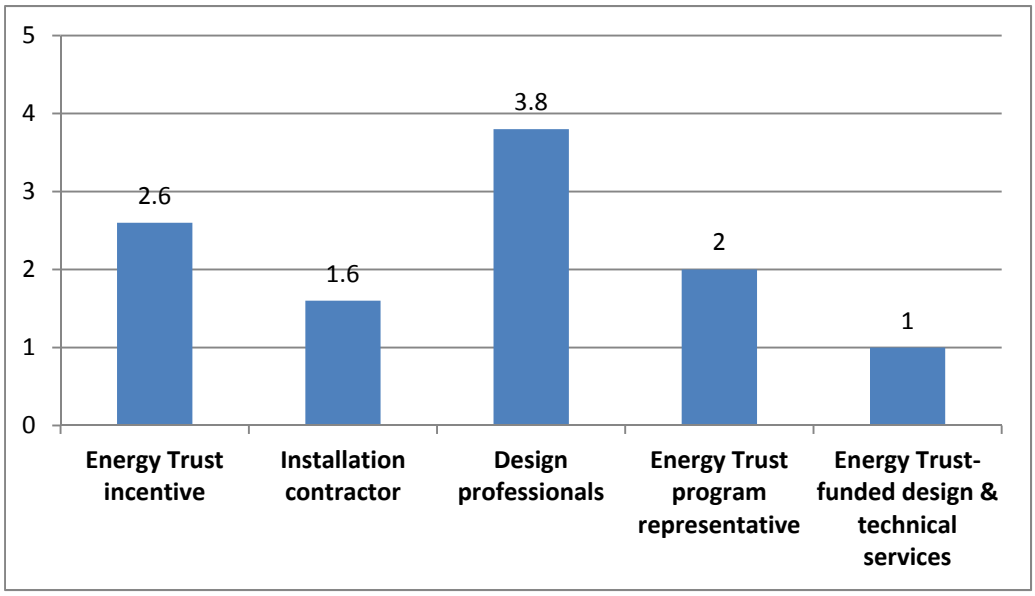

Since incentives for HVAC measures tend to be relatively low because the stringent requirements of the 2010 code limit opportunities for incremental efficiency gains, it is not surprising that the satisfaction with HVAC incentive levels was relatively low. Regarding the ease of using the calculator, two participants said they received help from NB program staff in filling out the lighting workbook and two received help with the HVAC workbook. All were very satisfied with the assistance they received, and it makes sense for the NB program to continue to provide such support until engineers and lighting designers become thoroughly familiar with these new tools.

Specific lighting measures mentioned by participants as having been under consideration included more efficient indirect lighting and controls and a hybrid mix of LEDs and high performance fluorescents. Specific HVAC measures mentioned include a variable refrigerant flow heat pump and use of natural ventilation.

## Solar

A total of six respondents were involved with projects installing solar measures. Most participants said they were far more motivated by state requirement to include solar on new publicly owned buildings and by the advice of design professionals than by Energy Trust programs. Responses regarding the importance of various factors in motivating the incorporation of solar into participants' new construction project are presented in Exhibit 3-16 below.

**Exhibit 3-16 – Influences on Incorporation of Solar, 1 to 5 scale (n=5)**

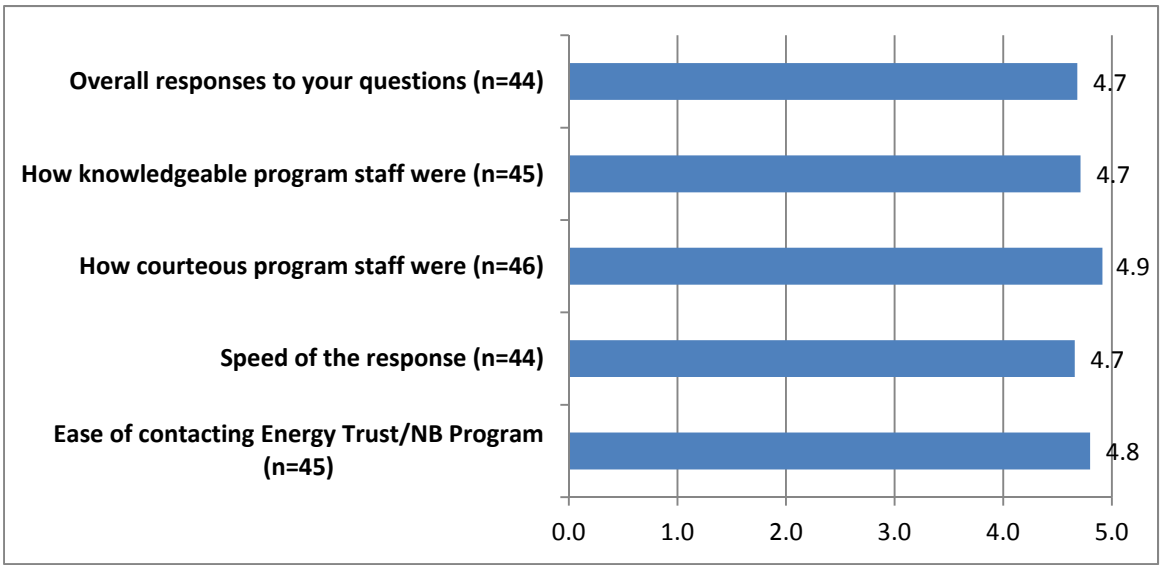



Most respondents reported little or no confusion regarding the roles of the NB and solar programs in supporting their project. Whether the Energy Trust incentive actually influenced the incorporation of solar, however, is doubtful in most cases. Of the six solar participants who responded to a question regarding what they would have done in the absence of the program, three said they would have installed the exact same system, while two said they would have installed a smaller system. Only one respondent said they would not have installed solar without the incentive. Similarly, 4 of 5 participants said their organization would have made available the funds needed to cover the entire cost of the solar thermal or PV system. One of these noted that if they had not gotten the solar incentives, they would have had to take out some energy efficiency measures they did do, in order to fund the solar project required on state buildings.

## Communications

Participants said they communicated frequently with NB program personnel, and most were very pleased with the quality of their communications. Respondents gave mean ratings of 4.5 or higher on a 1 to 5 scale for each of 5 aspects of communications, as summarized in Exhibit 3-17 below. There were no responses below 3 for any of the items. These results are supported by the many comments offered regarding the high quality of the assistance offered by program staff.

**Exhibit 3-17 – Satisfaction with Communications, 1-5 scale**




## Inspection

Of the 50 participants interviewed, 11 said they recalled receiving a post-installation inspection for their new construction project, with others replying they were not sure, had not been involved in that, or that the project had not yet reached that stage. All 11 who answered a question regarding their satisfaction with the inspection process gave it a rating of 5.

## Overall Program Satisfaction and Suggestions

Finally, respondents were asked about their overall satisfaction with the New Buildings program, and were then asked to give an explanation for their rating. Overall program satisfaction averaged 4.5, with 88% of the 43 respondents providing 4 or 5 ratings. This is higher than the 80% of Fast Feedback respondents answering the same question, which is discussed in the following section.

While most of the reasons offered for the ratings reiterated the respondents' satisfaction with the program and its staff, several participants expressed concerns.

- Two referred to a high rate of turnover among program management and staff, commenting that *"they have had a revolving door of Energy Trust program managers,"* and *"there has been too much staff turnover."*

- A second set of concerns related to the time and effort required to participate, an issue mentioned earlier as a barrier to participation. One owner's representative on a 650,000 square foot project that received a $25,000 incentive said that *"the level of effort it takes to get through the program's administrative paperwork makes it hard to justify on a large project like this, on which the incentive will be so small."* Another respondent noted that *"it is extra work for a project, but not (very much), and it's usually worth it."*

- Two participants questioned the program's allocation of resources. One said that *"incentives are not high enough; too much money is spent on support contractors."* Another praised the support provided by NB program staff, but commented that he was *"not satisfied with the way the program is structured; as structured it is not doing enough; a lot of their programs spend a lot of funds, but don't accomplish anything, and resources are not always put to where they could make a real difference."*

- An issue frequently raised, even among participants who were very satisfied with the program overall, was the uncertainty about the incentive they would receive. As discussed previously in the context of early design assistance, the uncertainty of the incentives can mean the incentive does not greatly influence the decision process and some efficiency measures may not be implemented. One participant suggested that the program commit money upfront, perhaps by putting money in an escrow account and specifying that it will be paid when the building is constructed using a design that comes within a given percentage of the specified savings.

## 3.4 Results – Fast Feedback

As a point of comparison for the process evaluation results, we analyzed the results of Energy Trust's Fast Feedback survey of a sample of recent program participants to assess participant satisfaction and program influence, with results reported internally on a quarterly basis. We combined results from 79 respondents surveyed in 2012, as shown below.

**Exhibit 3-18 – 2012 Fast Feedback Survey Respondents**

| Project Role | Count | Percent |
|---|---|---|
| Owner | 26 | 33% |
| Consultant | 9 | 11% |
| Other | 44 | 54% |
| **Total** | **79** | **100%** |

A key metric for which the Fast Feedback surveys collect data is program satisfaction. Participants are asked to rank their satisfaction with various program elements and the overall experience of working with the New Buildings program on a 1 to 5 scale, where 1 is not at all satisfied and 5 is very satisfied. Energy Trust typically reports the percentage of 4 and 5 responses for each question as an indicator of the percentage of very satisfied participants, calculated for all who provided a response other than "don't know."

Results for all of 2012, presented in Exhibit 3-19 below, show that 81% of respondents were somewhat or very satisfied with their overall participation experience – a lower figure than the 88% found among respondents to the process evaluation interview, although the difference is statistically significant at only the 70% confidence level. Satisfaction was highest with the

performance of installed equipment and the New Buildings program representative, and lower with the incentive amount, turnaround time to receive the incentive, and to the ease of applying for the incentive.

**Exhibit 3-19 – 2012 Fast Feedback Results: Participant Satisfaction**

| Program Attribute | % 4 or 5 | N |
|---|---|---|
| Interaction with program representative | 92% | 75 |
| Performance of your equipment | 96% | 67 |
| Ease of applying for incentive | 75% | 71 |
| Incentive amount | 69% | 72 |
| Turnaround time to receive your incentive | 69% | 70 |
| **Overall experience** | **81%** | **79** |

*N excludes Don't Know responses

The Fast Feedback survey also asked about participant experience with Design Assistance; just 21 of the 79 respondents reported receiving such assistance. Their satisfaction with the help they received (presented below) is higher than the overall program satisfaction of all participants, reinforcing the overall positive response to design assistance provided through the New Buildings program, as discussed in section 3.3.1 above, where we reported that 87% of 21 EDA participants provided responses of 4 or 5.

**Exhibit 3-20 – 2012 Fast Feedback Results: Design Assistance Satisfaction**

| Satisfaction With Design Services | % 4 or 5 | N |
|---|---|---|
| Q1 | 100% | 4 |
| Q2 | 83% | 6 |
| Q3 | 75% | 4 |
| Q4 | 86% | 7 |
| **All 2012** | **86%** | **21** |

Fast Feedback survey respondents were also asked about the importance of various factors influencing their decision to incorporate energy efficient features into their new construction projects. Responses indicate that Energy Trust incentives are more influential than input from design professionals in the decision to pursue energy efficiency (Exhibit 3-21). The lower N for design professionals may reflect project architects and engineers who were surveyed but did not answer that question, since they are the design professionals.

**Exhibit 3-21 – 2012 Fast Feedback Results: Influence on Efficient Design**

| Design Influences | % 4 or 5 |
|---|---|
| Energy Trust-funded design services (n=283) | 36% |
| Energy Trust incentives (n=77) | 48% |
| Design professionals (n=40) | 35% |
| Energy Trust program representative (n=72) | 35% |

*N excludes Don't Know responses

# 4. Conclusions and Recommendations

## Conclusions

Key findings reported elsewhere in this report are summarized below.

- The NB program continues to meet its goals and the needs of new building owners and trade allies. Savings come from a diverse mix of participants in terms of track, building type, fuel, utility, and geographic region.

- The NB program has evolved into a highly effective new construction program, achieving savings above and beyond one of the most stringent building codes in the country, and engaging most of the key designers, engineers and owners in the Oregon market. The program has been successful in finding above-code savings opportunities, with significant savings attributable to the NB team's ability to assist design teams that otherwise might have had trouble meeting code.

- However, finding savings above and beyond code will become more difficult as a) the remaining 2007 Code projects work through the pipeline and b) the next, even more stringent code is introduced.

- In addition to increasing participation, the NB program appears to be engaging with many of its participants relatively early in the design and construction process. This has helped encourage more design teams to conduct early design meetings and charrettes, resulting not only in adoption of more comprehensive energy efficiency measures on individual projects, but also in market transformation as more owners, architect and engineers are receptive to such meetings and the wider range of energy efficient options they cause to be brought to the table.

- In the face of a challenging commercial new construction market, the NB program has been successful at adapting to opportunities and capitalizing on them, as with data centers, which accounted for half of 2012 kWh savings. At the same time, the program has been effective in working with hard-to-reach projects, with design-build and other small projects well represented in the mix of overall participants.

- Although the NB program continues to record the various tracks that projects enroll in, participants – whether owners or other members of the design team -- are generally unaware of the alternative participation tracks available to them. Most of these participants rely on NB program staff to help them identify the appropriate path to participation.

- Participants also rely heavily on program staff to help them through the details of the application process, particularly use of the Lighting and HVAC calculators.
- Customers are generally very pleased with the NB program, NB staff and the level of communication and support they receive. Concerns focus on:
    - Uncertainty regarding incentives, which sometimes means projects cannot capitalize the incentive into the decision process. In very tight budgets, this may actually prevent the project from including some energy efficiency.
    - The amount of incentives relative to the paperwork involved (particularly for large projects with relatively small incentives).
    - The amount of paperwork, including the multiple numbered forms whose function in the participation process is not always clear.
    - Extensive back and forth between the program and participants, with the perception that there are multiple information requirements as part of the participation process.
    - Length of time to receive the incentive, with more than one-third of Fast Feedback survey respondents rating this 3 or lower on a 1 to 5 scale.
    - Turnover among NB staff and managers, which was mentioned by several participants as a factor that added to the amount of time and effort required for participation.

## Recommendations

Most of the recommendations that were made in the 2011 process evaluation report and summarized at the beginning of this report have been or are being implemented by the NB program. The program is continuing outreach and networking activities through its trade ally network, successfully engaging many projects early in the design phase and providing early design assistance, and helping prepare the market for future code evolution. Outreach manager changes appear to be happening smoothly, and we did not encounter significant concern or confusion regarding tax credits or other offerings relative to the NB program. Finally, as noted in the evaluation, participants who used the calculators and sought assistance were very satisfied with the help they received, and other interview respondents also pointed out that the application process would have been much more difficult without the application assistance provided by the program.

One recommendation that has not been implemented has been the offering of an innovation incentive that would reward architects, engineers, owners, developers and others who pursue

aspirational, highly efficient design. The concern is that this would benefit primarily firms who already pursue such designs routinely as part of their standard practice, and who would be free riders when claiming such an incentive. We believe this concern can be partly addressed by offering this incentive for the first project on which a firm achieves a specific percentage gain in efficiency over its previous best practice. This might encourage firms who currently strive for small incremental gains to push for a larger efficiency increase to qualify for the incentive.

Based on the conclusions summarized above and other findings throughout the report, the following recommendations are designed to help ensure that NB program efforts remain on track and address any aspects of program delivery that may inhibit participation.

- The program should continue its outreach to smaller projects through the use of market-specific packages and working with design-build projects. To support the latter, the program tracking data should include information on whether a project is design-build so that the outcomes of these projects can be tracked separately.

- As the NB program strives to engage projects earlier in the design process, it should maintain the emphasis on supporting early design meetings and charrettes. To achieve optimal results from these meetings, a single member of the design team should be formally designated as having responsibility for ensuring follow-up. In addition to the $2,500 incentive for holding the EDA meeting/charrette, consider adding a small ($500) bonus incentive for the architect, engineer, or green building consultant to prepare a follow-up report that details what measures were ultimately incorporated into the design and why. In addition to the Early Design Assistance Report Template, the program should provide a sample report with a more detailed description of the type of discussion, estimated savings and level of specificity desired.

- Since participants are often unaware that they received code compliance assistance consider providing more concrete documentation of the services provided, such as an invoice for the value of the services provided with a “paid by Energy Trust” and $0.00 due shown on the receipt.

- Participants recognize the need for Energy Trust to document all aspects of NB program participation, but would appreciate any streamlining of the paperwork process, which would have the added benefit of reducing participant reliance on NB staff to complete forms. To the extent possible, it would be helpful to refer to forms by name rather than by number as a means of making the application process more user-friendly.

- As another means to make the participation process (including the selection of a program track or options) more transparent, Outreach Managers or other program staff could provide a brief summary of participation options tailored to what they know about a project (e.g., size, building type) to help guide their discussion with the design team

regarding how to proceed. After a decision has been made, both a leave-behind and follow-up emails could be used to clarify the participation options and measures selected. Such a summary should include a description of Code Assistance if provided, along with estimated savings.

- Consider providing participants with an "X plus or minus 10%" guaranteed incentive level to facilitate equipment selection and budgeting, as well as potentially greater influence on the decision-making process.

- To encourage "deep savings," highlight the fact the program offers tiered incentives for custom projects that increase according to the extent by which the project exceeds code. To encourage innovation, offer a bonus incentive for the first 5 or 10 projects using an emerging energy efficient technology.

- Be proactive when staff turns over. Make every attempt to have new staff thoroughly up to speed not only on the program, but on individual projects. Make sure that a project history is available to new OMs or others for every individual they are likely to make contact with. Also, have the NB Program Manager at PECI place a follow-up phone call to every member of the design team for each project affected by a staff member's departure or change in responsibilities.