Energy Trust Board of Directors
Strategic Planning Workshop

June 7, 2013, 8:00am–5:15pm

421 SW Oak Street, Suite 300 Portland, OR 97204 1.866.368.7878 503.546.6862 fax energytrust.org

Board Strategic Planning Workshop

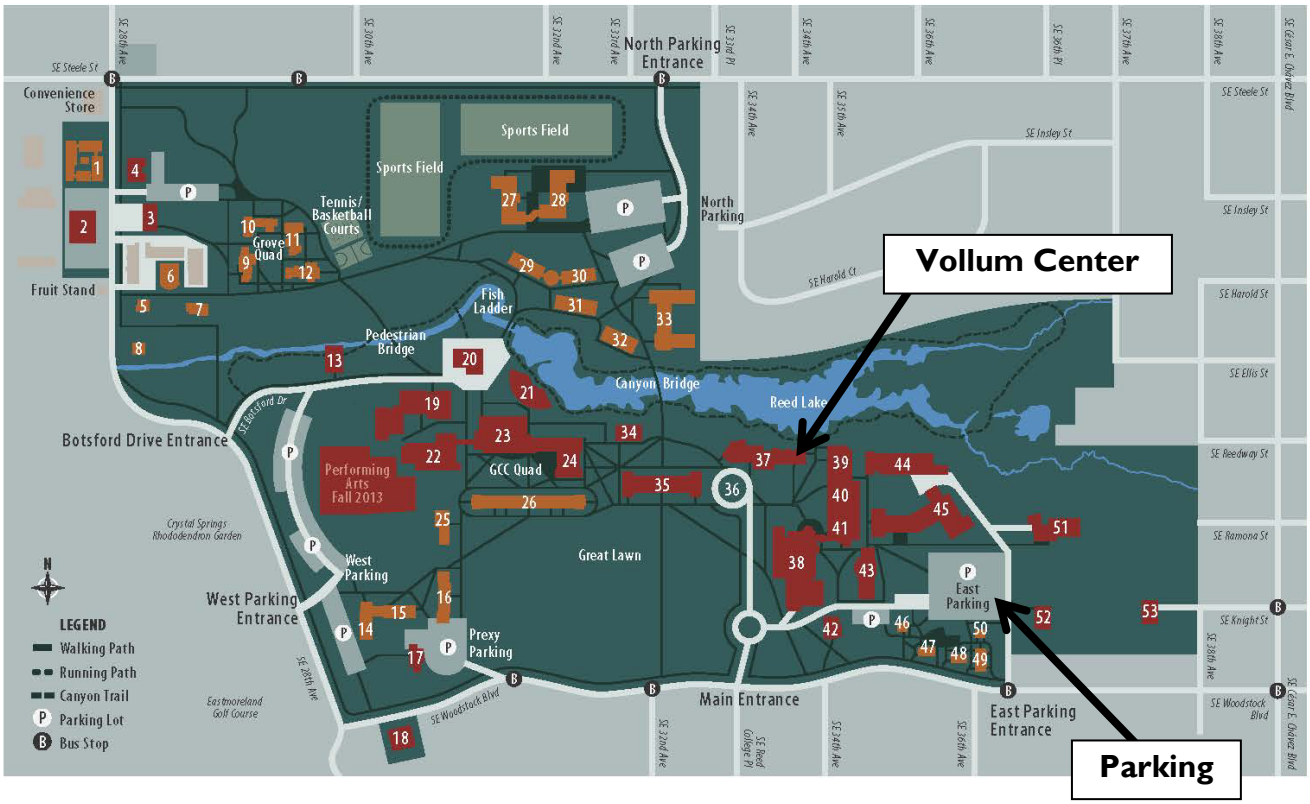
Friday, June 7, 2013, 8:00am–5:15pm
Reed College, 3203 SE Woodstock Blvd, Portland in the Vollum Lounge

	AGENDA	Tab
7:30am	**Arrival and Breakfast**	
8:00am	**Welcome, review agenda, introductions** *(President John Reynolds)*	
8:15am	**Meeting structure** *(Rick Applegate)*	
	Workshop ground rules *(Nick Viele, Facilitator)*	
8:30am	**Steve Nadel, ACEEE:** Bleeding Edge/Cutting Edge Issues in Energy Efficiency ..	*Steve Nadel Bio*
9:30am	**Stage-setting** *(Margie Harris)*	
10:00am	**Big Picture of the Energy Trust Efficiency Program** *(Fred Gordon and Elaine Prause)*	*EE Pgms Paper (Sections 1+2)*
11:45am	**Lunch**	
12:30pm	**Follow-up discussion of Big Picture Efficiency issues**	
	Introduction to the afternoon panels	
12:45pm	**Large Customer Electric Efficiency** Opportunities & Challenges.....	*EE Pgms Paper (Section 4)*
	Staff briefing on management options and implication *(Kim Crossman)*	
1:30pm	**New Technologies and Methods** Opportunities & Challenges.....	*EE Pgms Paper (Section 5)*
	Staff briefing on how Energy Trust and utilities model new technology *(Fred Gordon)*	
	Jeff Harris: NEEA's stage-gate process on technology identification and development	*Jeff Harris Bio*
2:30pm	**Effects of Low Gas Prices on Cost-Effectiveness** Opportunities & Challenges	*EE Pgms Paper (Section 3)*
	Staff briefing *(Diane Ferington)*	
	Weatherization contractor panel discussion **Jeremy Anderson** of Weatherization Industries Save Energy (WISE) **Robert Hamerly** of GreenSavers USA **Tom Kelly** of Neil Kelly Company **Don MacOdrum** of Home Performance Contractors Guild	
3:30pm	**Break**	
3:45pm	**Closing Board Discussion**	*2010-2014 Strat. Plan*
	Introduction to upcoming 5-year strategic planning process (*Rick Applegate)*	*Timeline*
5:00pm	**Closing Remarks** *(Margie Harris and John Reynolds)*	
5:15pm	**Adjourn**	
6:15pm	**Board Dinner**	

Energy Trust Board of Directors Strategic Planning Workshop

Reed College 3203 SE Woodstock Blvd, Portland OR

Friday, June 7, 2013 at 8:00am



REED COLLEGE

3203 SE Woodstock Blvd. Portland, Oregon 97202-8199

1. **Birchwood Apartments**
2. **Theatre annex, Reed warehouse**
3. **28 West**: community safety, residence life
4. **Health & Counseling Center**
5. **Garden House** (residence hall)
6. **Reed College Apartments**
7. **Canyon House** (residence hall)
8. **Farm House** (residence hall)
9. **Sequoia House** (residence hall)
10. **Sitka House** (residence hall)
11. **Bidwell House** (residence hall)
12. **Aspen House** (residence hall): Caffè Paradiso
13. **Theatre**
14. **Scholz** (residence hall)
15. **Foster** (residence hall)
16. **MacNaughton** (residence hall)
17. **Prexy** (music building)
18. **Parker House**
19. **Sports Center**
20. **Physical Plant**
21. **Cerf Amphitheatre**
22. **Kaul Auditorium**: Gray lounge
23. **Gray Campus Center**: bookstore, commons (dining hall), mail services, international student services, SEEDS
24. **Student Union**: Paradox Café
25. **Anna Mann** (residence hall)
26. **Old Dorm Block** (residence hall)
27. **Naito Hall** (residence hall)
28. **Sullivan Hall** (residence hall)
29. **Griffin** (residence hall)
30. **McKinley** (residence hall)
31. **Woodbridge** (residence hall)
32. **Chittick** (residence hall)
33. **Bragdon Hall** (residence hall)
34. **Student Center**: student activities, multicultural resource center
35. **Eliot Hall**: admission, chapel
36. **Eliot Circle**
37. **Vollum College Center**: lecture hall, lounge
38. **Library**: Cooley Art Gallery
39. **Physics**
40. **Biology**: auditorium
41. **Paradox Lost Café**
42. **Greywood**: alumni & parent relations, campus information, career services
43. **Educational Technology Center** (ETC)
44. **Chemistry**
45. **Psychology**: auditorium
46. **Russian House** (residence hall)
47. **German House** (residence hall)
48. **French House** (residence hall)
49. **Spanish House** (residence hall)
50. **Chinese House** (residence hall)
51. **Studio Art**: Feldenheimer Gallery
52. **Dorothy Johansen House**: academic and disability support services
53. **Center for Advanced Computation**

Steve Nadel Biography

June 7, 2013

Steve Nadel will talk with us about "Bleeding Edge and Cutting Edge" issues in energy efficiency around the country. His presentation will touch on a variety of topics including: targeting the largest customers, industrial process conservation, codes and standards, lighting design and lighting controls, and financing. Steve looks forward to a give and take discussion, learning as much from our work in Oregon as we do from him.

Prior to his promotion to Executive Director in 2001, Steven Nadel served as Deputy Director of the organization and Director of ACEEE's Utilities and Buildings programs. He has worked in the energy efficiency field for more than 30 years and has over 100 publications. He has testified many times before Congress on energy efficiency subjects and also testified before multiple state legislatures. He was a major contributor to national energy legislation passed by Congress in 1987, 1992, 2005, and 2007. His current research interests include utility-sector energy efficiency programs and policies, state and federal energy and climate change policy, and appliance and equipment efficiency standards. He joined ACEEE in 1989.

Prior to ACEEE, Steve planned and evaluated energy efficiency programs for New England Electric, a major electric utility; directed energy programs for the Massachusetts Audubon Society, Massachusetts' largest environmental organization; and ran energy programs for a community organization working on housing rehabilitation in the poorest neighborhoods of New Haven, CT.

Steve earned a Master of Science in Energy Management from the New York Institute of Technology and a Master of Arts in Environmental Studies and a Bachelor of Arts in Government from Wesleyan University.

Expertise:

- Energy policy
- Appliance standards
- Utility programs and policies
- Developing country issues

Briefing Paper
Energy Efficiency Programs
June 7, 2013

Introduction
This paper reviews how Energy Trust efficiency programs have performed to date, what it will take to achieve our 2014 Strategic Plan goals, and strategic opportunities and challenges beyond 2014. The paper is meant to inform the board's discussion of efficiency issues, help shape the Energy Trust 2014 annual budget and two-year action plan, and help identify issues to explore in the 2015-2019 strategic plan.

Contents

Summary

The first section of the paper provides context and vocabulary: how Energy Trust programs fit into the context of Energy Trust strategic plans, utility/OPUC resource plans, and utility funding for Energy Trust programs. This section of the paper is strictly background, it poses no questions for the board. We attach a copy of the 2010-2014 strategic plan to this paper, because much of the discussion documents our performance in relationship to the plan.

The second section analyzes how Energy Trust programs are performing in relation to various metrics. We compare program performance to: our five-year strategic plan, Energy Trust and utility annual goals, Governor Kitzhaber's Ten-Year Energy Plan, longer-term energy savings and cost trends, and the track records of energy efficiency programs in other states. We also review how Energy Trust has coordinated with state agencies, and opportunities for improved collaboration. We provide this information to give the board a sense of where we are. It does not pose specific board questions, but provides an opportunity for board members to probe these important questions.

The third section discusses a major course-correction stemming from historically low natural gas prices, which raise questions about the cost-effectiveness of our gas programs. This section discusses steps we are taking to control costs to maintain cost-effectiveness, which may create tension with Energy Trust's equity goals. We have been managing the issue and briefing the board on it for about a year, and so this is not a new issue. It poses a policy question for the board: whether our steps toward cost-containment maintain an appropriate balance with the board's equity concerns.

The fourth section discusses an issue that the board identified in the 2009-2014 strategic plan, and which now is on our doorstep: Customers using more than one average megawatt (1 aMW) of electricity may benefit only from efficiency investments using the public-purpose fund originally allowed under the 1999 law, SB 1149. Additional electric efficiency funds may be collected from customers using less than 1 aMW, and these funds may not be used for large-customer projects. We expect to reach the limit of large-customer funding in the next year or so. In the fourth section, we discuss management tools we plan to use to manage for this limitation, and ask the board for a "gut-check" on whether these options seem appropriate. This section is also meant to heighten the board's awareness of potential impacts on Energy Trust's customer relationships, and identify aspects of this issue you would like to explore in the 2015-2019 strategic plan.

Finally, the fifth section of the paper provides background on how we are incorporating new technologies into resource planning. This discussion, and presentations by staff and Jeff Harris at the retreat, should help the board determine if the steps we are taking appropriate steps to encourage new energy conservation techniques to meet strategic goals.

Discussion

1. Big Picture of the Energy Trust efficiency program: Energy Trust goals, utility integrated resource plans, and Energy Trust funding

Energy Trust assesses energy conservation resource potential and develops deployment scenarios designed to acquire all cost-effective energy efficiency measures over 20 years. The assessments and deployment scenarios help shape Energy Trust five-year strategic plans, two-year action plans and annual budgets. The deployment scenarios are projections, while actual savings depend on customer decisions rather than Energy Trust decisions. For this reason, Energy Trust has characterized its annual goals, which guide budgets, as a range: "stretch" goals reflect an optimistic projection; "conservative" goals represent savings that can be achieved with the highest level of confidence, considering variable market conditions and customer choices. Nomenclature describing Energy Trust goals and performance measures, funding levels and their relationship to utility and Oregon Public Utility Commission (OPUC) integrated resource planning are being revisited and clarified with the board and stakeholders.

Energy Trust resource assessments and deployment scenarios inform utility integrated resource plans. The utility resource plans, "IRPs," are developed in a process that is guided by the OPUC. Energy Trust provides 20-year deployment scenarios to IRP planners, and helps update utility IRPs approximately every two years.

IRPs in turn provide a foundation for supplemental funding agreements between the utilities and Energy Trust. The two electric utilities, PGE and Pacific Power, are required by law (SB 1149) to pay three percent of their revenues for energy conservation, market transformation and renewable energy projects. Energy Trust receives about 74% of these funds. In 2007, the legislature authorized the OPUC to permit electric utilities to collect "supplemental" funding for cost-effective energy conservation for customers, with the exception of the largest energy users. The utilities and Energy Trust determine this supplemental funding annually, and it has significantly increased funding for efficiency programs. This same practice has been extended to both NW Natural and Cascade Natural gas utilities.

Energy Trust's strategic plans reflect these interactions between Energy Trust planning, utility planning and utility-Energy Trust funding agreements.

2. Big Picture of the Energy Trust efficiency program: How are we doing?[1]

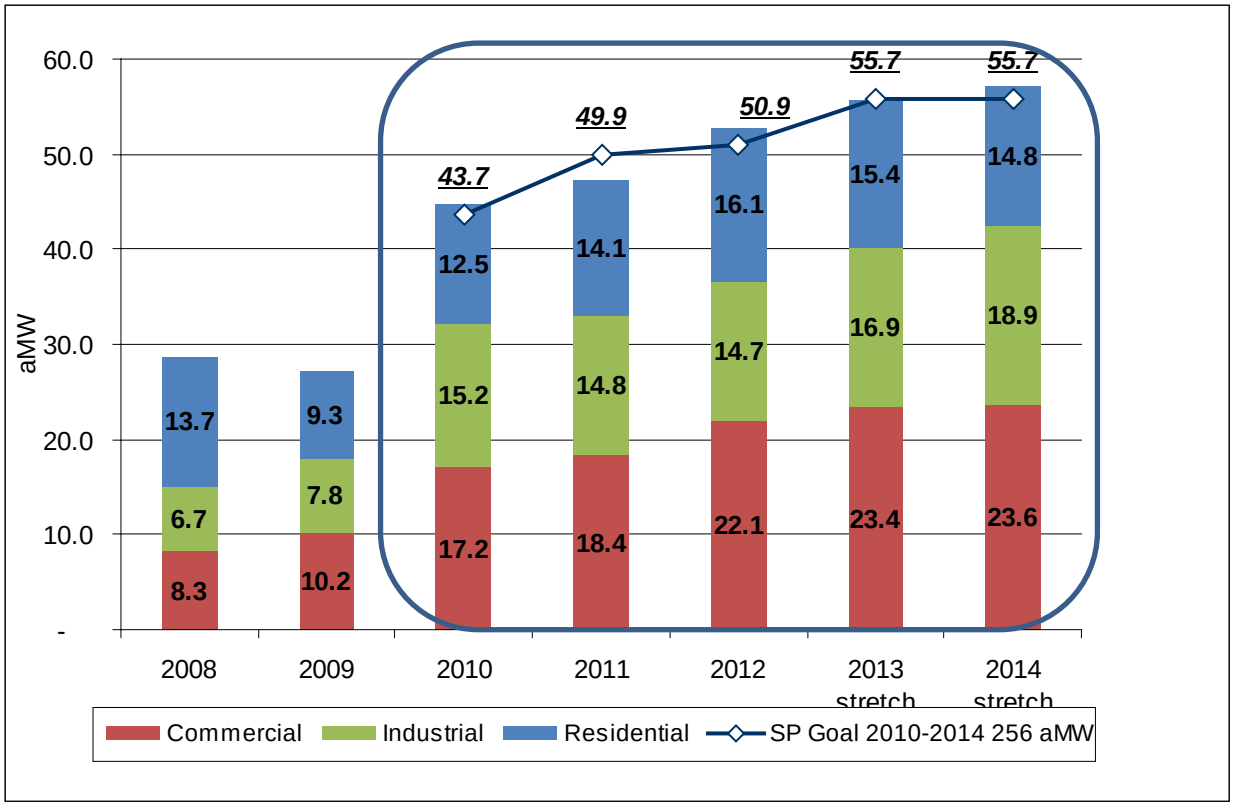
This section analyzes how Energy Trust energy efficiency programs have performed relative to various measuring sticks.

A. Compared to 2010-2014 strategic plan goals

Electric savings. We appear to be on track. In 2009, we set a five-year goal of 256 average megawatts (aMW) of electric savings between 2010 and 2014. If we meet our "stretch savings" (optimistic) goals for 2013 and 2014, we will slightly exceed that goal, with 258aMW projected (figure 1).

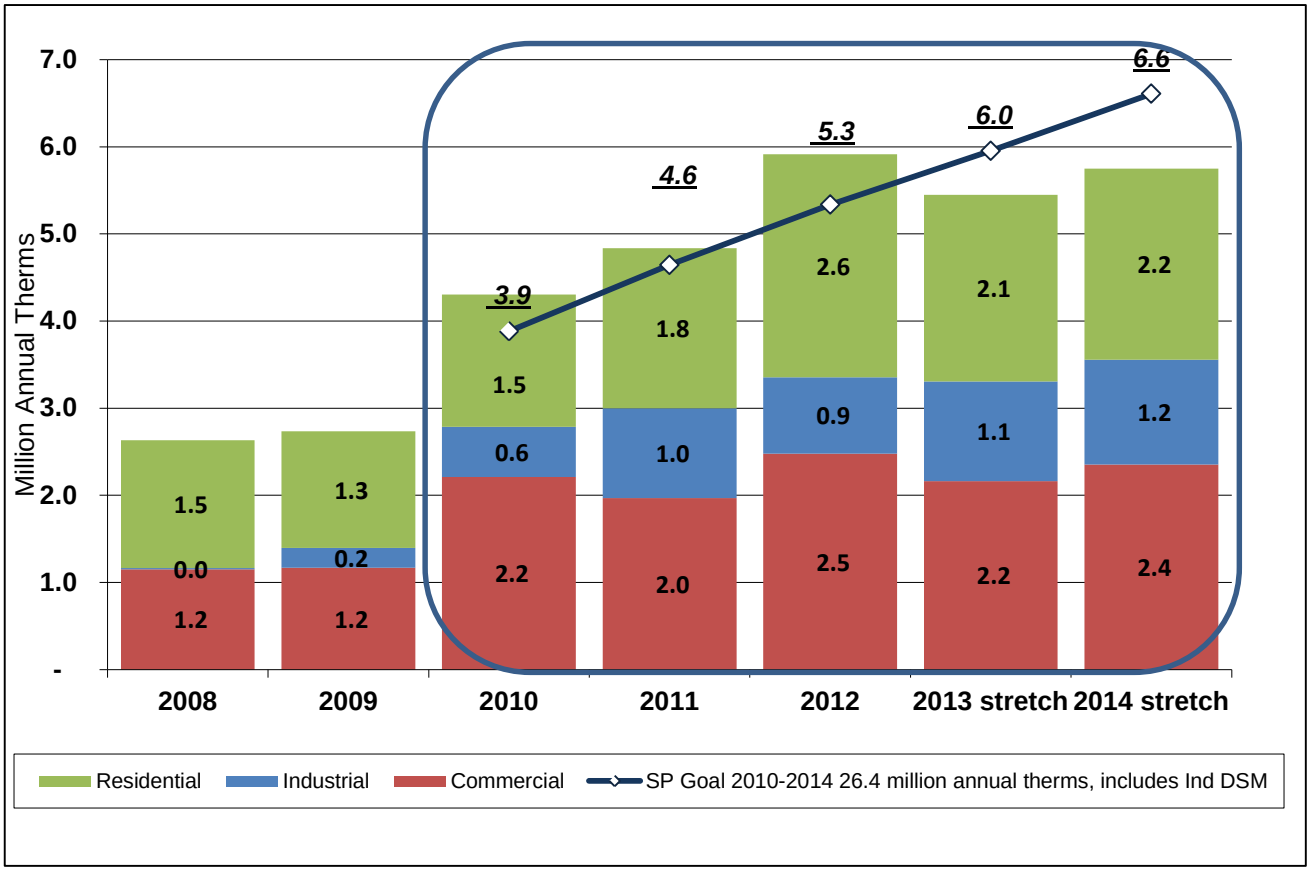
[1] For consistency with planning documents, the goals and results presented in this section are for Oregon only. Washington represents about 10% of our gas efficiency market.

Figure 1. Annual Energy Trust Electric Savings by Sector



Gas savings. In 2009 when we set the current gas efficiency strategic plan goal at 26.4 million annual therms, it was unclear whether our industrial gas efficiency pilot for NW Natural customers would continue. The plan therefore included separate goals with and without industrial gas savings. In fact, the industrial gas pilot was successful and has become an established program. As with electric, if we meet 2013 and 2014 stretch goals for gas, we will exceed the 2010-2014 goal by 3%, saving 27.3 million annual therms over the five-year period (figure 2).

Figure 2. Annual Energy Trust Gas Savings by Sector



B. Compared to annual budget and IRP goals

The strategic plan goals analyzed above span a five-year horizon, and are based on our best estimate of what is needed to meet IRP goals over that time. We aim to reach those goals via our **annual budget and IRP goals**. Annual goals and budgets are based on a closer perspective on energy loads and market opportunities.

i. Gas programs

The annual performance of gas programs represents significant annual growth in savings between 2009-2012 in existing commercial buildings, industry and homes (figure 3, figure 4).

Figure 3. Annual Gas Savings by Program (2002-2012)

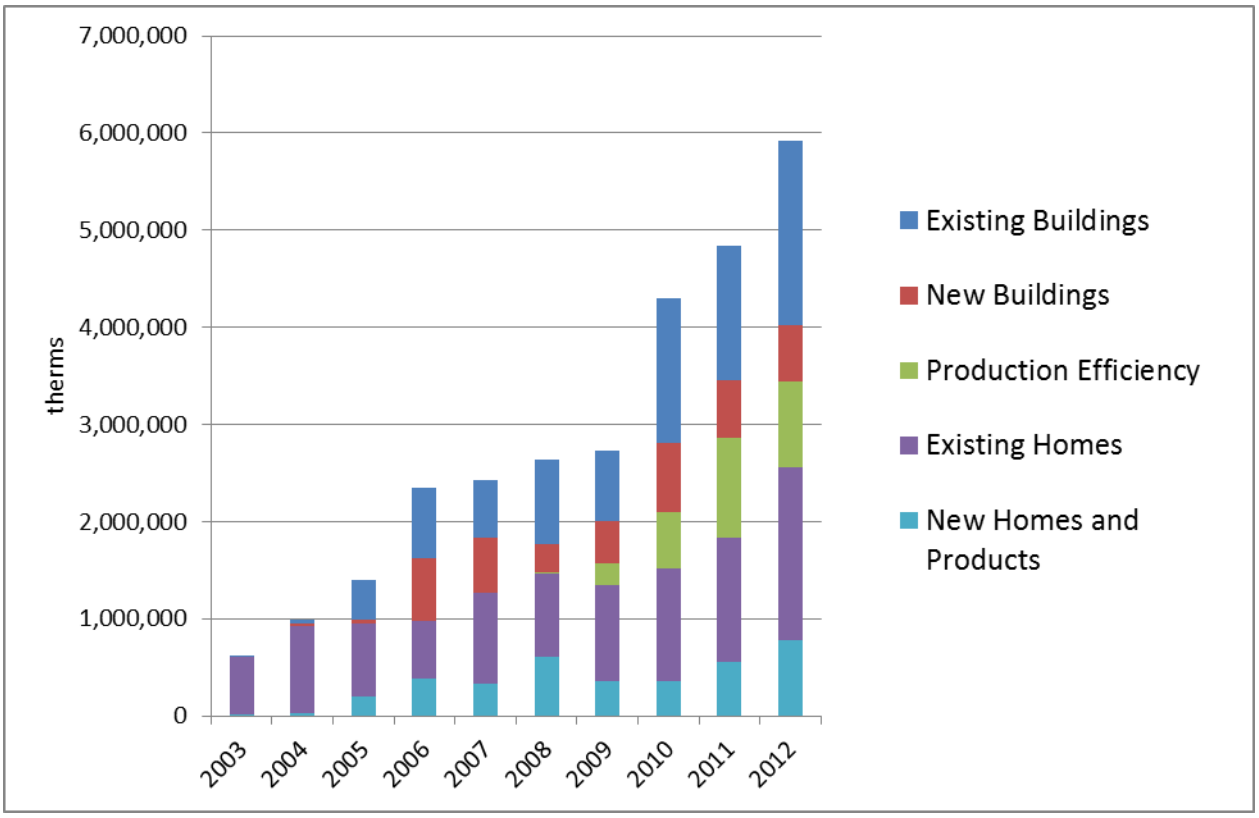


Figure 4. 2012 Gas Savings by Program in Annual Therms

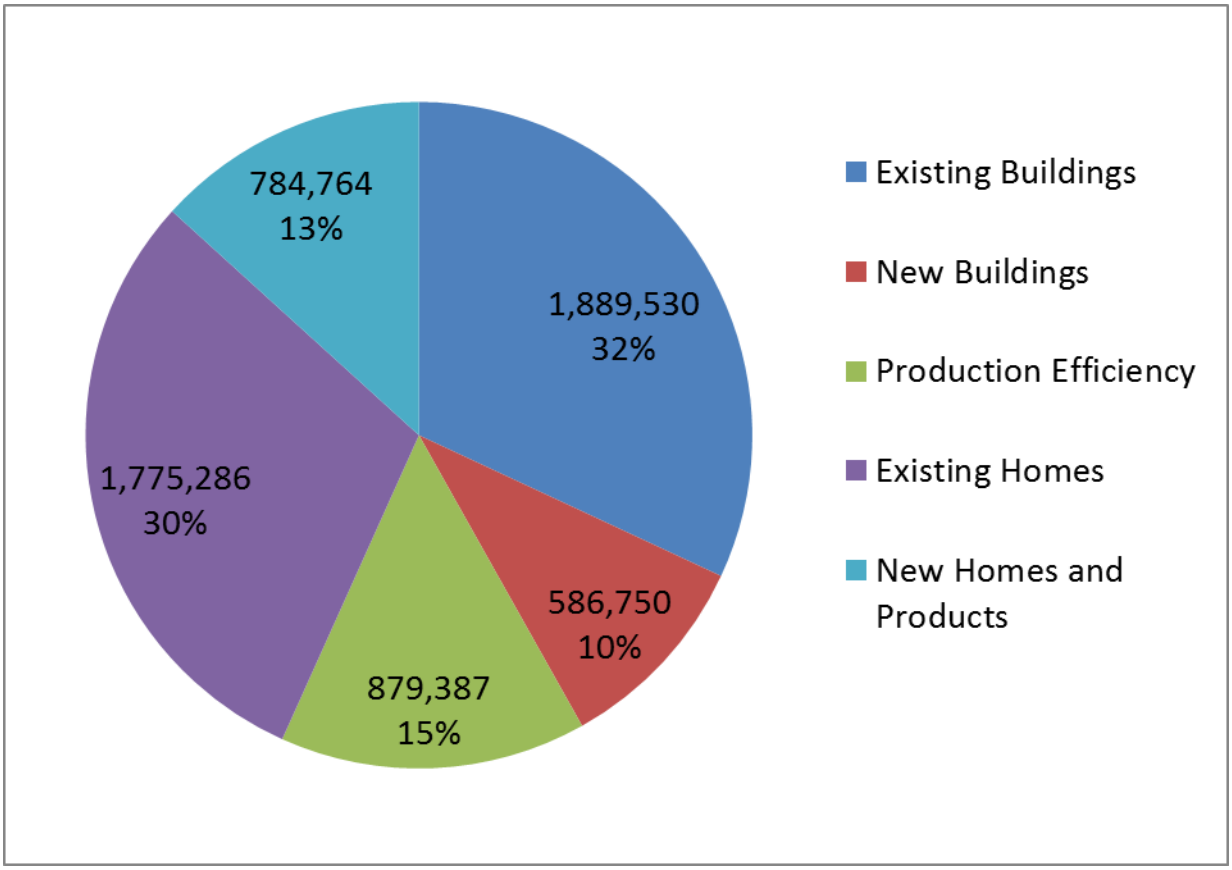
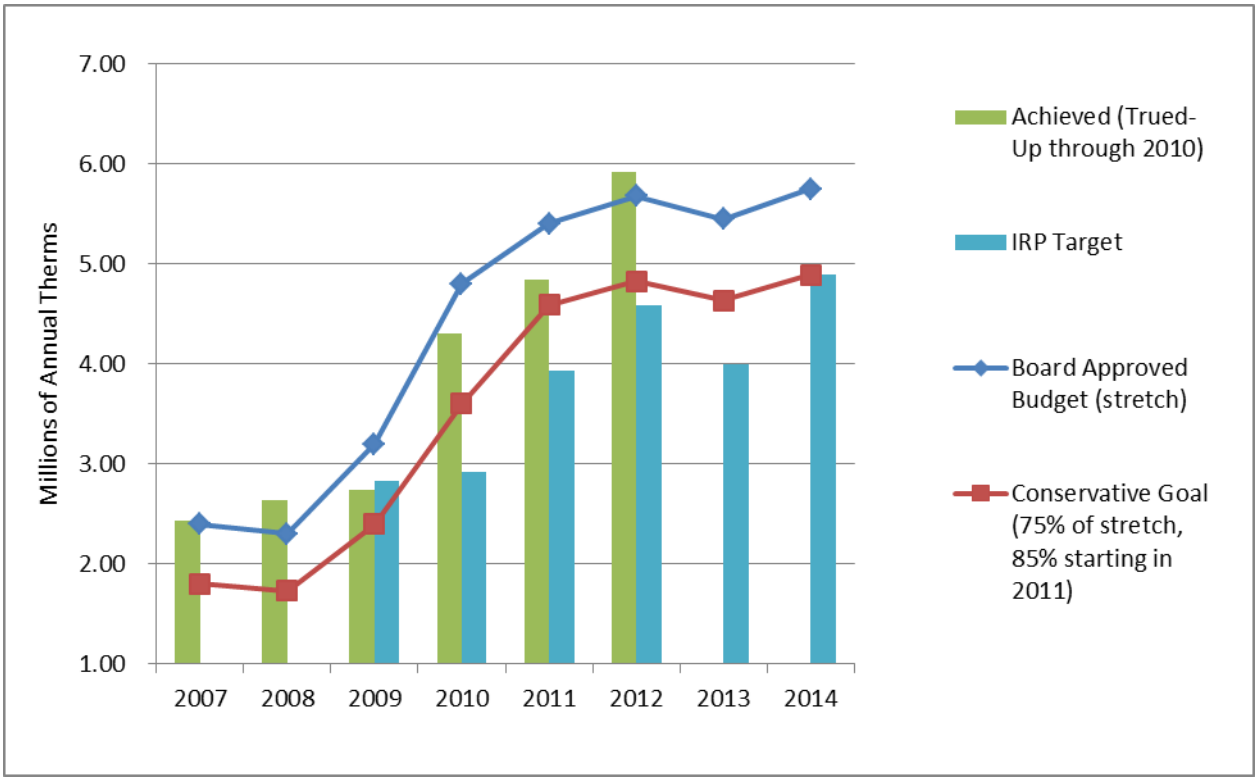


Figure 5. Annual Gas Savings Compared to Goals



Gas performance so far has consistently exceeded our conservative and stretch goals (figure 5). Existing commercial projects surpassed expectations due to a combination of expanded business development, outreach and growing customer confidence in the stabilizing economy.

In 2013, IRP targets decline due to uncertainty about whether efficiency measures will be cost-effective when compared to historically low gas prices. However, our expectations for gas savings are favorable in spite of low gas prices because of market indicators and the Oregon PUC's short-term grant of an exception from cost-effectiveness considerations. Accordingly, our conservative gas savings goal exceeds the IRP goal for 2013.

For 2014, we expect to have geared our portfolio and program measure mix to aggressive IRP targets, so goals increase again.

ii. Electric programs

Like gas programs, electric savings nearly doubled between 2009 and 2012. Existing Buildings and Production Efficiency account for the largest growth with steady increases in New Buildings and Existing Homes as well (figures 6 and 7).

Figure 6. Annual Electric Savings by Program (2002-2012)

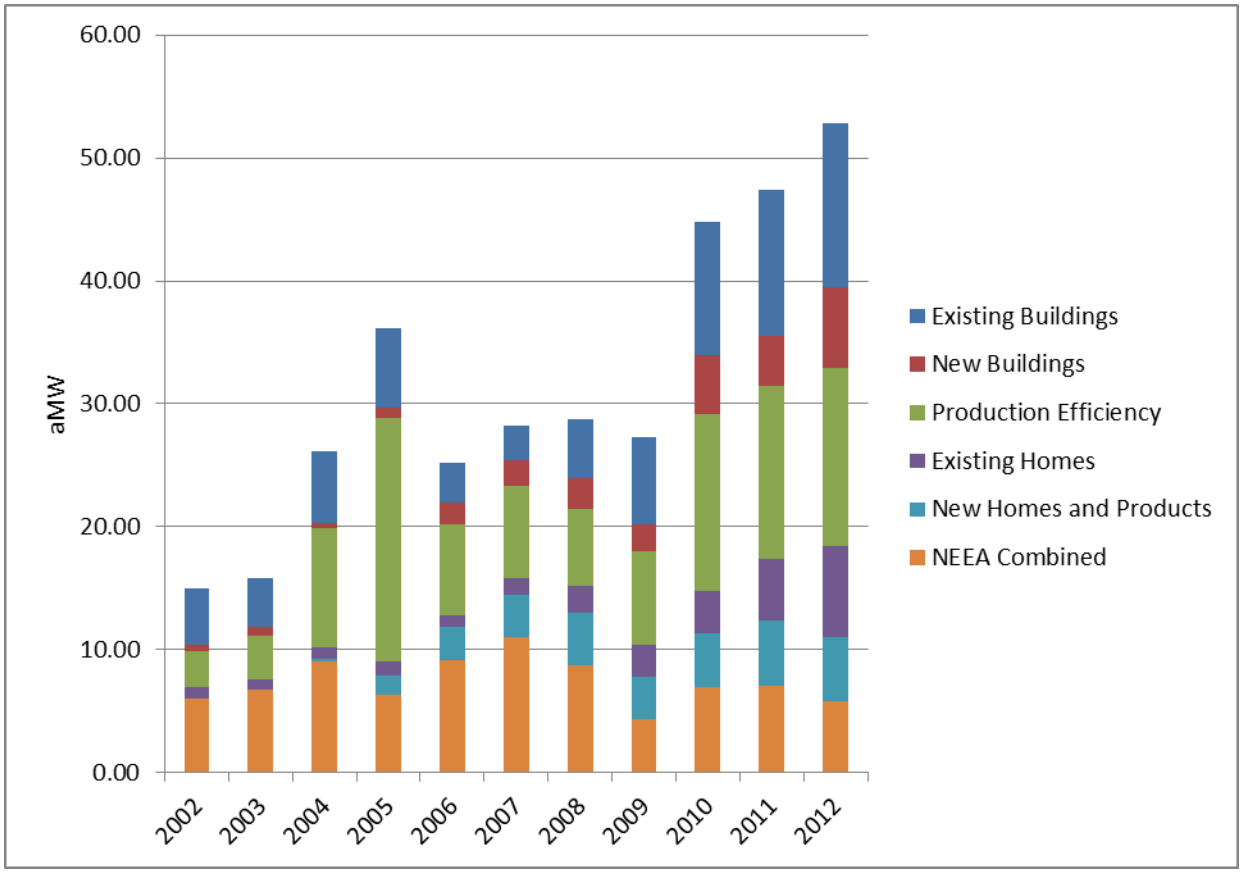


Figure 7. 2012 Electric Savings by Program

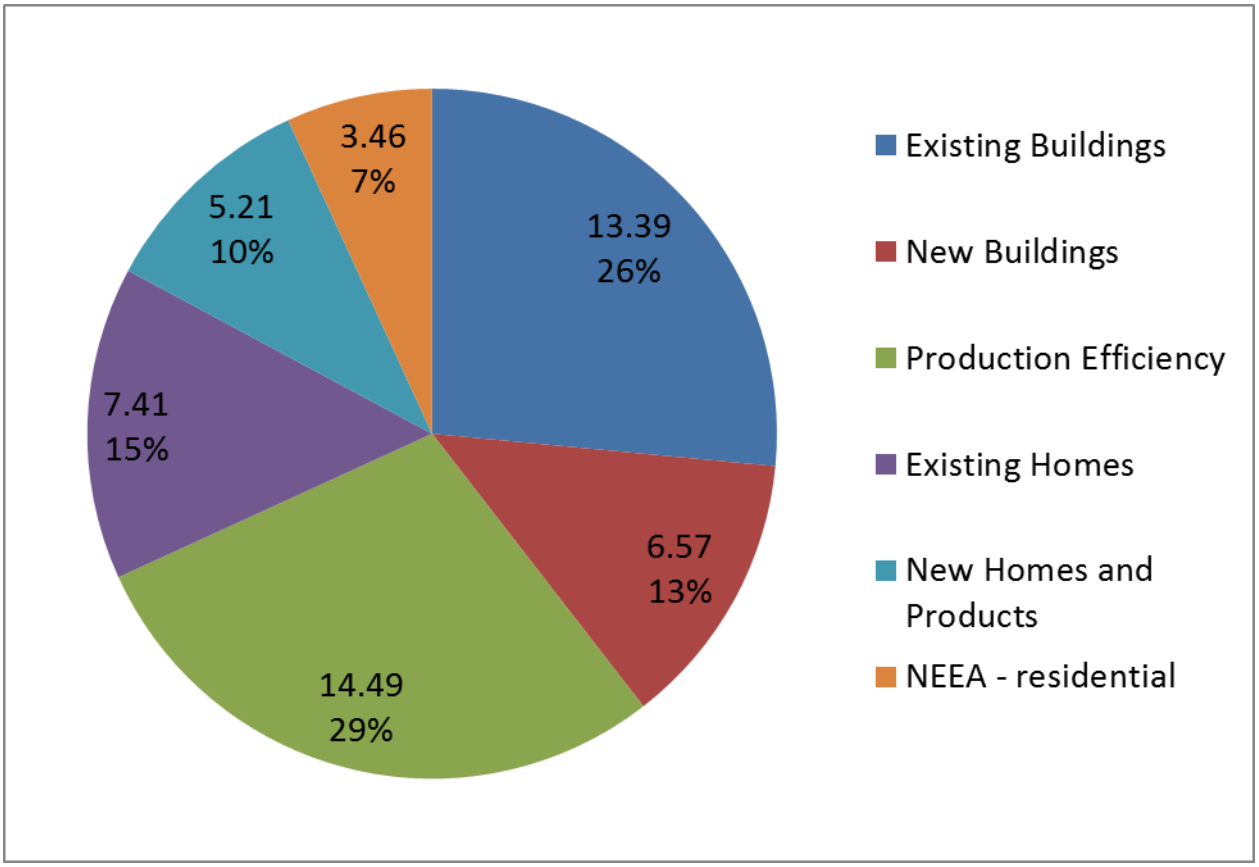
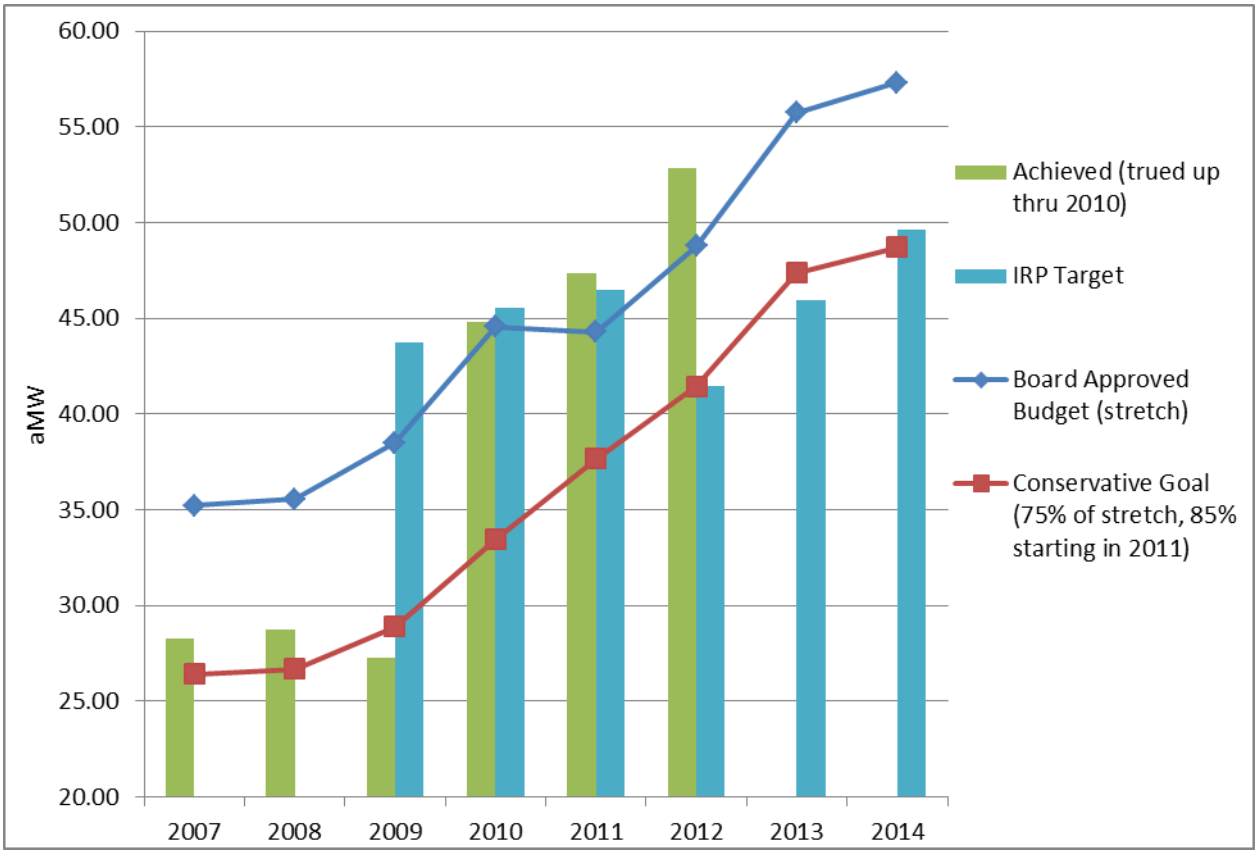


Figure 8. Electric Savings Compared to Goals



2010-2012 have seen significant growth, and met or exceeded stretch goals (figure 8). We expect annual savings will continue to increase through 2014, and then stabilize.

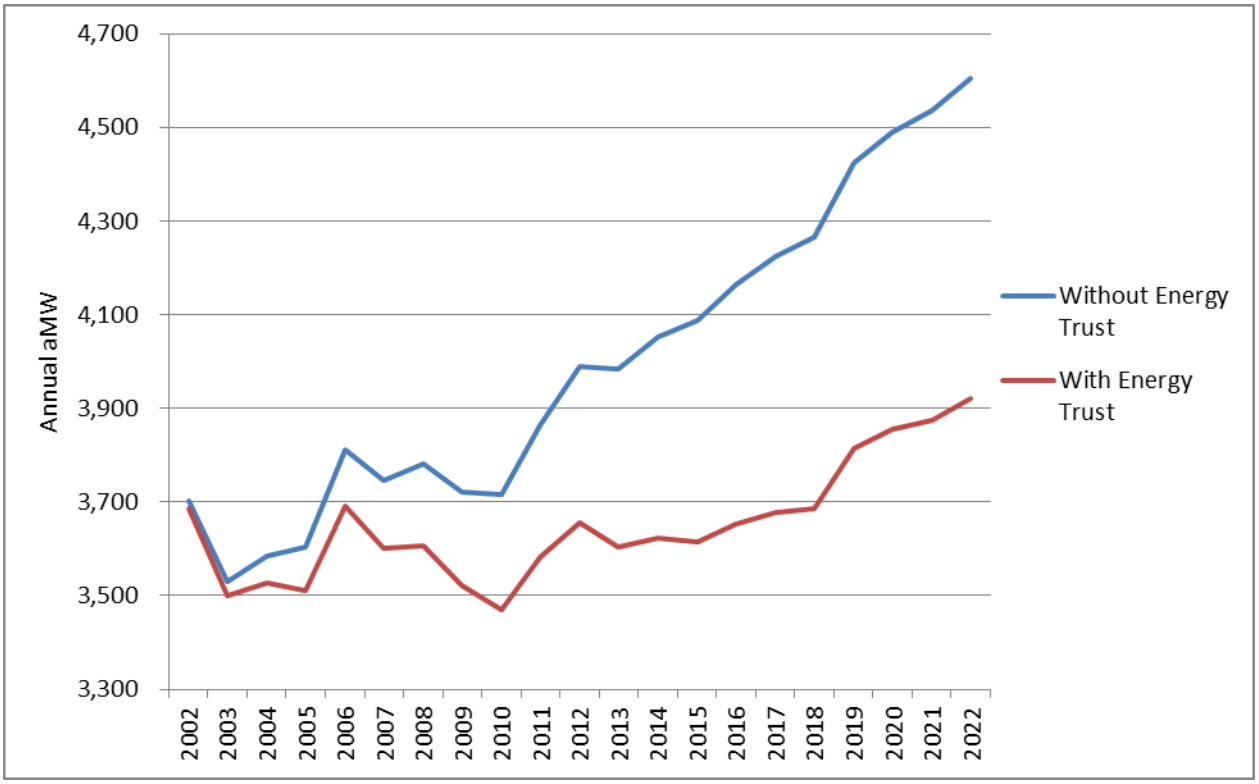
C. Compared to the Governor's 10-year plan objectives

The Governor's 10-year plan ("the Plan") was in draft during last year's board retreat. Since then, the Plan has been released, with three main goals: (1) maximize energy efficiency and conservation, (2) enhance clean energy infrastructure, and (3) accelerate transformation to clean transportation.

The Plan's first goal is to "maximize energy efficiency and conservation to meet 100% of new electric load growth." This is where Energy Trust programs figure most prominently. Based on load forecasts, an assessment of the resource potential and achievability, and our deployment scenarios, we project that we can meet 60% of electric load growth in the territories we serve, 2012-2022.[2] Combining our electric savings achievements from 2002-2012, we estimate that we reduced 2012 loads by 8.4% (Figure 9).

[2] This is based on the combined utilities' medium forecast of load growth of 1.7% per year for the next 10 years. Load growth has proven quite difficult to predict, as it is dependent on trends in economic and population growth, fuel prices, and equipment saturations that themselves have proven difficult to predict. So the ability to "meet load growth" depends on how these load drivers grow.

Figure 9. Impact of Energy Trust Efficiency Programs on Electric Loads



The Plan's efficiency goal is not an objective for Energy Trust *per se*. In addition to Energy Trust, load growth reduction is expected to come from:

- Savings achieved by consumers taking initiative on their own;
- Increased state appliance standards via legislative action;
- Advances in state building energy codes;
- State efficiency programs, including tax credits, loans, technical assistance, and other efforts;
- Up to 4 million square feet of state building retrofits;
- Efficiency programs managed by consumer owned utilities, covering about 30% of the energy load in Oregon;
- Efficiency investments by school districts and low income programs.

Energy Trust is expected to play a key role in several other aspects of the Governor's Plan, some of which may be affected by actions in the 2013 legislature:

- The Plan calls for a State Building Innovation Lab to conduct energy audits, identify cost effective retrofit and complete the retrofits for every occupied state-owned building over the next ten years. Energy Trust is one of seven entities to form a public-private team to

lead the Lab and the larger effort to address broader regulatory issues. A bill supporting the Lab is in the legislature.

- The Plan calls for expansion of the Energy Trust "charter" to allow us to leverage existing infrastructure to pursue carbon reduction and economic goals. No legislation has been proposed to this effect.
- The Plan proposes to build on the Energy Performance Score (EPS) tool to provide scores state-wide. The legislature has such a bill under consideration.
- The Plan calls for a new energy efficiency financing tool. The legislature is considering a limited expansion of utilities to finance non-cost-effective measures by agreement with a customer.
- The Plan calls for the state to work with market transformation programs to update codes and standards. Several bills addressing building codes and appliance efficiency standards are under consideration.

We anticipate that some of these ideas may be addressed by initiatives through the Governor's office over the next year. Energy Trust's role in many of these areas will be clearer when the State has concrete plans.

D. How are Energy Trust efficiency program funding and savings trending?

With supplemental energy efficiency funds in recent years, efficiency funding has grown as a share of ratepayer bills, from just over two percent to more than four percent (Figures 10 and 11). Funding for low-income, conservation in schools, and renewable energy programs brings collections to more than five percent of electric bills.

Figure 10. Electric Efficiency Revenue

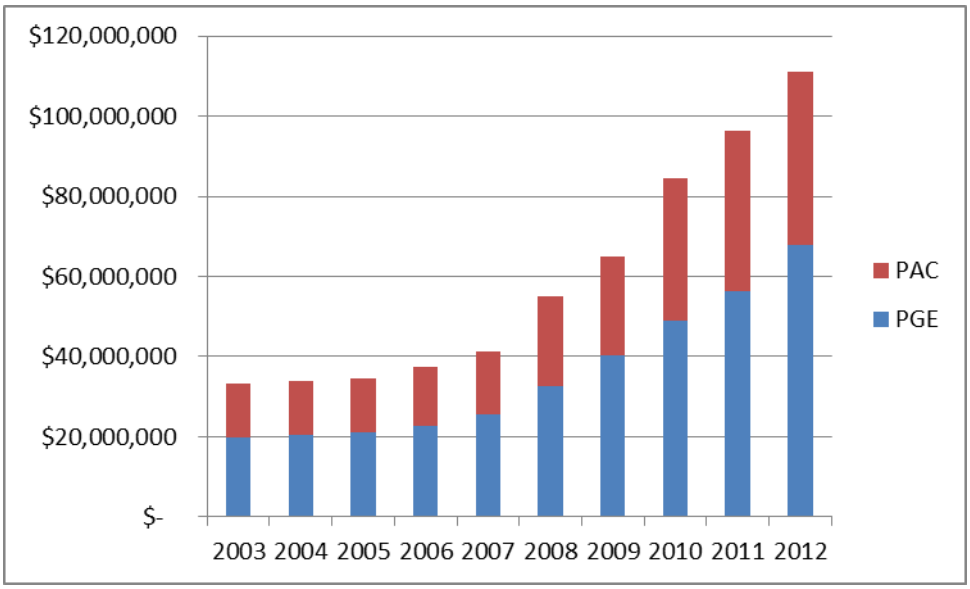
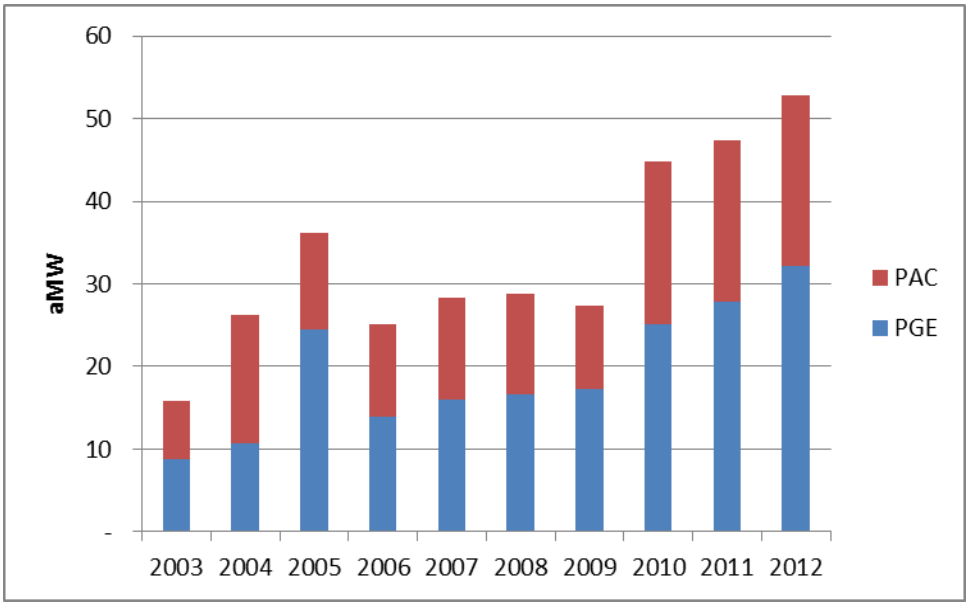
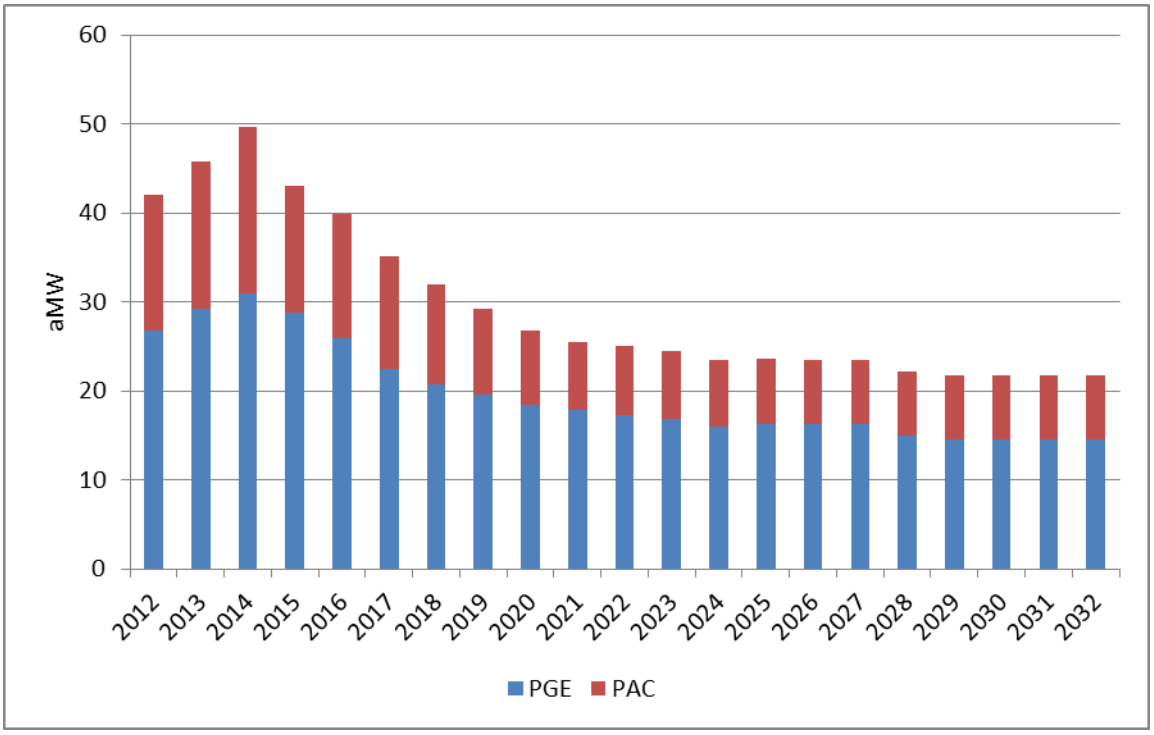


Figure 11. Electric Efficiency Savings



Although cost-effective energy efficiency is demonstrably the best customer value, further increases in electric funds appear unlikely, as discussed more fully below. Without large infusions of new technical opportunities, the need for electric funds is expected to decrease after approximately 2015 (Figure 12). Moreover, we are mindful of concerns about cost impacts on ratepayers.

Figure 12. Forecasts of Annual Added Electric Savings by Utility



Because there is still a very large supply of available gas efficiency, Energy Trust can continue to acquire gas savings at the current or an accelerated pace for several years. The key question for gas, as discussed below, is how to deliver savings cost-effectively given low natural gas price forecasts.

To get a sense for how well we're doing in electric resource acquisition compared to what we saw as potential resource when we began programs in 2002, we compared actual acquisition results to our original resource assessment (table 1).

Table 1. 2002-12 Energy Savings Compared to Initial Resource Assessment.

Sector	2002 10 yr Technical Potential (aMW)	2002 10 yr Achievable Potential (aMW)	2002-2012 Actual (aMW)	Actual % of 2002 Achievable Potential
Residential	408	347	121	35%
Commercial	364	309	114	37%
Industrial	306	260	112	43%
TOTAL	1078	916	347	38%

The original resource assessment indicated a large untapped resource, 916 aMW of achievable supply, divided across sectors. The highest potential was residential. We now estimate that we have acquired 35-43% of this potential, depending on the sector. Our most recent resource assessment estimates that 670aMW of achievable resource remains for acquisition over the next 20 years. These assessments and our results fit together relatively well. We have made a sizeable dent in what was seen as a huge resource.

E. Compared to programs in other states

Comparing the performance of different energy efficiency programs can be challenging because the way in which various programs report results is not standardized. For example, Energy Trust reports net savings adjusted for evaluation results and includes line-loss adjustments, while other states and programs may not. Retail energy rates vary from area to area. Efficiency of existing buildings can greatly impact participation, incentive design, and resource potential. Evaluation practices vary greatly, and drive how organizations report savings.

Nevertheless, we can provide a high-level view of performance and a general sense of how our work compares to others.

i. ACEEE State Energy Efficiency Scorecard

The ACEEE State Energy Efficiency Scorecard is another way to compare performance. Although Energy Trust is just one part of the Oregon energy puzzle, we are responsible for the majority of energy savings reported to ACEEE. For 2012, Oregon ranked 4th nationally, the sixth year Oregon has been in the top five.

Will Oregon maintain its preeminence? Efficiency investment in other states is rising fast. In ACEEE scoring, Oregon tends to come up short in areas where Energy Trust's role is limited: Energy Efficiency Resource Standards (similar to renewable portfolio standards, but for efficiency), combined heat and power (CHP) and transportation policies, and appliance efficiency standards. In this legislative session, appliance standards are being addressed. ODOE recently announced an $8M pool for tax credits for CHP. However, the scoring system is largely based on results for the year that ends 20 months before the score is reported. We'll see how we fare when the 2012 scorecard results are revealed this October.

ii. Peer comparison

The following tables and graphs compare Energy Trust, Puget Sound Energy and National Grid (Rhode Island and Massachusetts), investor-owned utilities[3] with electric and natural gas energy efficiency programs. The categories displayed in Tables 2 were reported similarly enough to render a rough comparison, recognizing that there are unknowns about the methodologies used to calculate savings and costs.[4] Overall, we attempted to use reported costs and savings that most closely reflected Energy Trust's methodology.

Puget represents the best direct comparison to Energy Trust due to its similar size, climate zone and regional proximity. National Grid-Rhode Island was chosen because it has similar programs, temperate climate and excellent track record in delivering efficiency programs. Both have publicly available annual reports with extensive performance results.

[3] Because Energy Trust serves investor-owned utilities, the Board Strategic Planning Committee suggested comparison to other major investor-owned utilities who deliver their own programs.
[4] All source documents (annual reports) were searched for references to 'Free riders' and 'transmission line loss.'

Table 2. Comparison of Costs, Savings, and Sales Between Utilities

Electric program performance, 2010 & 2011

Yr	Organization	Total Program Expense ($M)	Savings (MWh)	$M/aMW savings	# of Customers	Program $ /customer	Total Retail Sales (aMW)	Savings % of Load
2011	Energy Trust of Oregon	$ 98.7	410,756	$ 2.1	1,381,892	$ 71	3,581	1.3%
	Puget Sound Energy	$ 79.5	348,926	$ 2.0	1,083,378	$ 73	2,454	1.6%
	National Grid - RI	$ 33.6	96,009	$ 3.1	473,386	$ 71	594	1.8%
2010	Energy Trust of Oregon	$ 83.6	399,894	$ 1.8	1,378,045	$ 61	3,470	1.3%
	Puget Sound Energy	$ 73.4	293,559	$ 2.2	1,100,000	$ 67	2,400	1.4%
	National Grid - RI	$ 25.2	81,275	$ 2.7	482,373	$ 52	606	1.5%
	National Grid - MA	$ 122.8	289,774	$ 3.7	1,187,720	$ 103	2,348	1.4%

Gas Program Performance comparison 2010 & 2011

Yr	Organization	Total Program Expense ($M)	Savings (Therms)	$/Therm savings	# of Customers	Program $ /customer	Total Retail Sales (therms)	Savings % of Load
2011	Energy Trust of Oregon	$ 22.4	5,040,157	$ 4.4	721,153	$ 31	776,601,746	0.65%
	Puget Sound Energy	$ 19.3	4,789,478	$ 4.0	756,531	$ 25	943,884,310	0.51%
	National Grid - RI	$ 4.4	1,196,130	$ 3.7	247,302	$ 18	240,213,453	0.50%
2010	Energy Trust of Oregon	$ 19.5	4,456,422	$ 4.4	715,634	$ 27	704,004,280	0.63%
	Puget Sound Energy	$ 19.9	5,033,406	$ 4.0	750,654	$ 27	846,346,038	0.59%
	National Grid - RI	$ 5.0	1,400,970	$ 3.6	246,768	$ 20	244,063,135	0.57%
	National Grid - MA	$ 34.1	5,855,548	$ 5.8	836,914	$ 41	789,736,931	0.74%

The three metrics we calculated to compare performance are: (1) dollars per energy savings, showing how much was spent to save a unit of energy, (2) dollars per customer, showing the relative investment magnitude of the efficiency programs relative to service territory size, and (3) savings percentage of load, showing what level of impact program savings are having on the demand levels.

Electricity: Across electric programs in 2010 and 2011, Energy Trust and Puget spent similar amounts for each aMW of electricity savings. On the other hand, National Grid-Rhode Island spent approximately 50% more than Energy Trust for savings in 2010 and 2011. Energy Trust spent 9% and 1% less per customer than Puget in 2010 and 2011 respectively but 17% and 3% more than National Grid-Rhode Island in 2010 and 2011. Energy Trust's estimated 1.3% of load saved was consistent in both years but shows slightly less impact on total load than others. National Grid-Massachusetts data was only available for 2010. Their results show a much larger program than Energy Trust or Puget in total dollars spent, but those dollars resulted in less savings on a $/aMW basis. Overall, Energy Trust performs well when measured in these terms.

Gas: In 2010 and 2011, Energy Trust spent approximately 10% more per annual therm saved than Puget, and approximately 25% more than National Grid-Rhode Island. The scale of programs compared to number of customers was similar for Puget and Energy Trust in 2010 and Energy Trust spent 19% more than Puget in 2011. Both Puget and National Grid-RI slightly reduced dollars spent on gas programs from 2010 to 2011 while Energy Trust increased its budget. National Grid-Massachusetts again seems to be the outlier with high $/therm acquisition costs and higher savings impact as percent of load than all others. Massachusetts aside, Energy Trust does not appear to be performing as well as its peers in gas. Climate differences and differences in the housing stock are likely important. Energy Trust as the mildest weather of the three utilities. Because significant gas savings are from weatherization, Energy Trust's investment in weatherization saves less.

Staffing: We also queried staff levels for each organization. These comparisons warrant extra caution because "efficiency staff" is defined differently in each organization, and National Grid-RI is supported by the larger National Grid headquarters operation. Energy Trust staffing level is currently 91 full- and part-time employees. Puget has 107 staff dedicated to efficiency, distributed throughout the organization. National Grid-RI employs 28, and delivers roughly 20-25% of Energy Trust's annual savings. We were unable to find data for National Grid-Massachusetts.

F. Coordination with state agencies

From its inception, Energy Trust has worked closely with state agencies. Examples:

- Cross-consultation with the Oregon Department of Energy (ODOE) regarding efficiency levels that are eligible for incentives and tax credits. Most recently, Energy Trust provided advice regarding state tax credits for Small Premium Projects (SPP), the efficiency tax credits that most closely resemble prescriptive rebates.

- Data gathering. Energy Trust and ODOE have in the past conducted detailed analysis of overlapping participation in tax credits and Energy Trust incentives. Energy Trust and ODOE also share data on self-direction.

- Financing initiatives. Energy Trust and ODOE coordinate and play complementary roles in implementation of the Cool Schools program. Energy Trust's role involves facilitating the technical analysis that provides the basis for financing. Energy Trust also provides financial incentives for schools where appropriate.

- Energy Trust has co-funded projects with the Small-Scale Energy Loan Program (SELP) loan and state tax credit programs since our inception. In its first year, Energy Trust ran a pilot program to buy down the interest rate on SELP loans.

- As part of its relationship with the OPUC, Energy Trust provides advice regarding the implications of prospective state energy policies on implementation of energy efficiency and renewable energy programs, and follows OPUC policy directives regarding cost-effectiveness and other issues.

- Energy Trust and ODOE link each other's programs through websites and other public information channels. Our contractors are trained to cross-market both entities' programs.

The Governor's Energy Plan and new leadership at ODOE provide opportunities to streamline, deepen, and potentially expand the scope of this coordination:

- As noted above, the Governor's Plan calls for Oregon to use efficiency to meet all electric load growth. Unless load growth is relatively modest, it may be infeasible for Energy Trust to meet this goal by itself. However, additional efficiency savings can be expected from efforts of the private sector, Federal and state appliance standards and efficiency programs, state building codes, and the programs of consumer-owned utilities.

- ODOE's Energy Incentives Program and its many targeted initiatives are rapidly evolving. As they firm up, there are opportunities to reestablish and deepen cross-promotion and marketing.

- Energy Trust and ODOE are exploring opportunities to jointly sponsor research to evaluate customer response to energy incentives.

- Discussion is underway regarding Implementation of the second, post-pilot phase of the Energy Efficiency and Sustainable Technology (EEAST) program, requiring close coordination between Energy Trust, the Oregon PUC, and ODOE.

- Over the next two years the OPUC will reexamine and may reconsider rules for cost-effectiveness. Energy Trust programs will also be reshaped to increase efficiency and reduce cost in light of low natural gas prices. These processes will require continued close coordination. Because changes in Energy Trust programs can impact ODOE's Energy Incentives Program, coordination with ODOE will also be required.

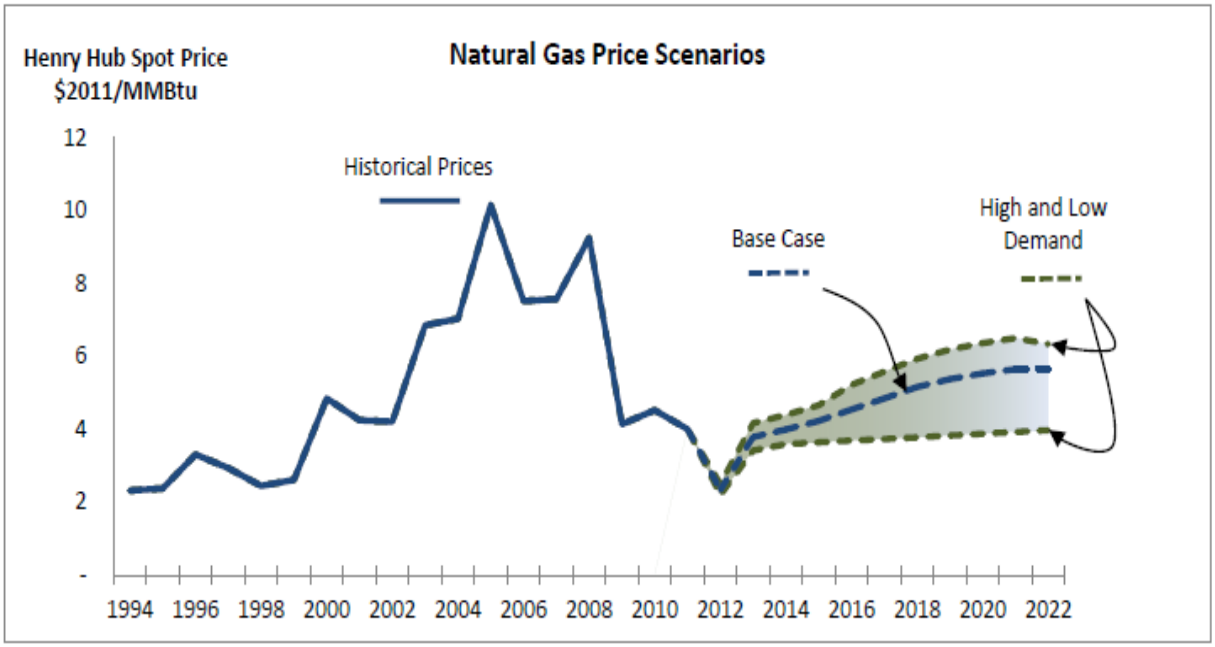
- Energy Trust is defining and prioritizing financing innovations. Energy Trust has developed an action plan to help do so and, having reviewed it with the board, will review with the OPUC and ODOE.

3. Effects of Low Natural Gas Prices on Cost-Effectiveness: Opportunities and Challenges

A. Effect of natural gas prices on cost-effectiveness

Prices for natural gas over the coming decades determine the value of Energy Trust gas efficiency programs, because that value is derived by avoiding gas purchases. Since 2010, natural gas commodity prices have declined from mid-2000s peaks ($10/mmBTU) to levels far below what was imagined as recently as 2008 or 2009 ($2/mmBTU) (figure 13).

Figure 13. Natural Gas Price Forecasts



Source: Wood Mackenzie, Spring 2012

With the development of new technologies that have allowed for cost-effective extraction of natural gas in shale rock formations and other nonconventional sources, the outlook for future natural gas prices has fundamentally changed. One result has been large unexpected increases in natural gas supply. New wells have become easier to bring on line quickly in response to demand, further dampening any market impacts on pricing. Industry analysts have characterized these developments as a paradigm shift, rendering forecasting techniques based on historical gas prices nearly useless.

Gas price forecasts have always been a challenge, yet they have served as the basis for much of utility system and energy efficiency resource planning. To illustrate the challenge, Figure 14 plots the natural gas price forecasts used with past Northwest Power Plans. Each line represents a price forecast at a different point in time from 2010 and on. In November 2008, 2010 prices were forecasted to be $7.50/mmBTU compared to the July 1998 forecast value for year 2010 being just under $3/mmBTU, with the actual value being $4.50/mmBTU.

Figure 14. Fourteen Years of NW Power Planning Council Natural Gas Price Forecasts

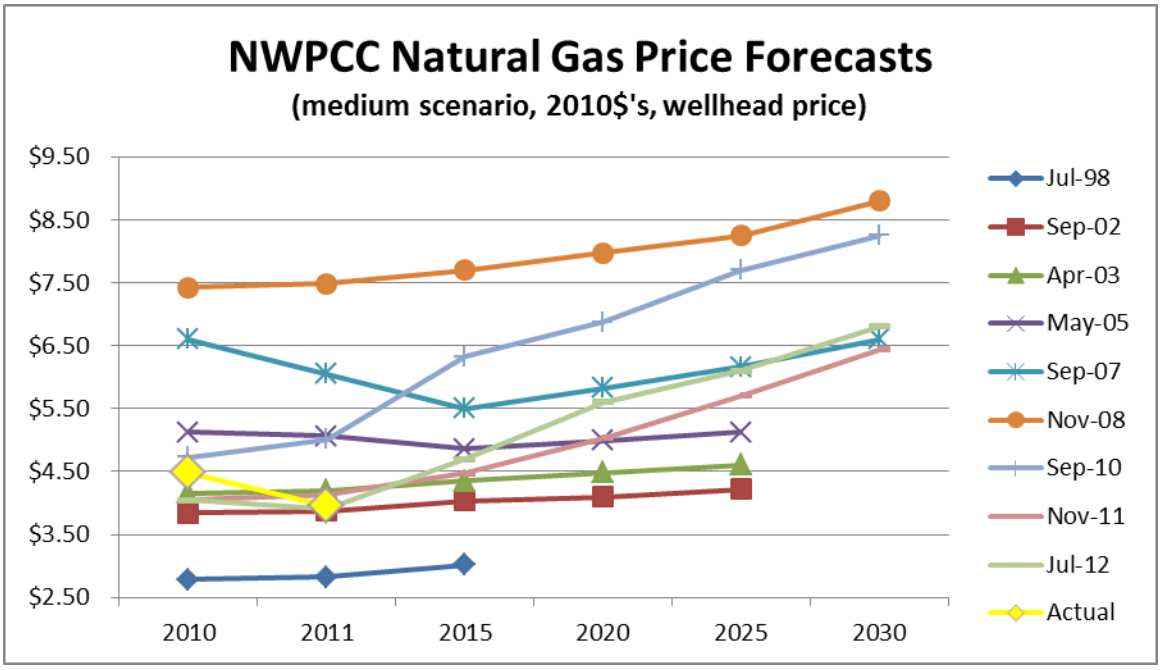
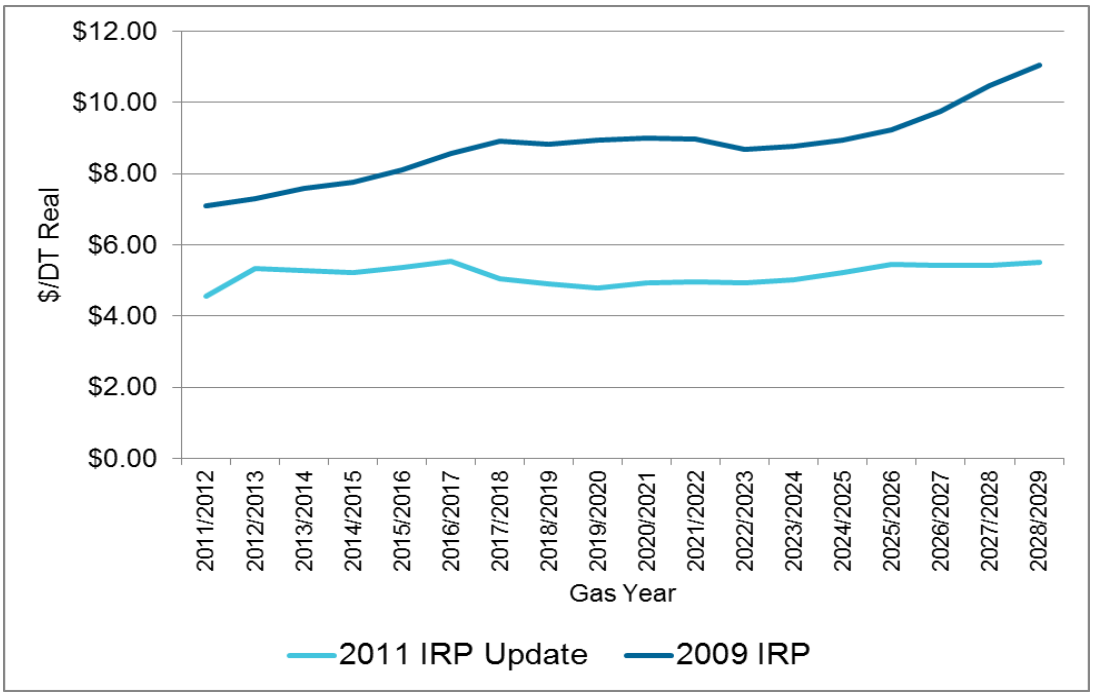


Figure 15 shows the recent decline in forward prices provided to us by NW Natural from the Integrated Resource Plan for 2009 compared to 2011.

Figure 15. Revisions to NW Natural Avoided Cost Forecasts Between 2009 and 2011

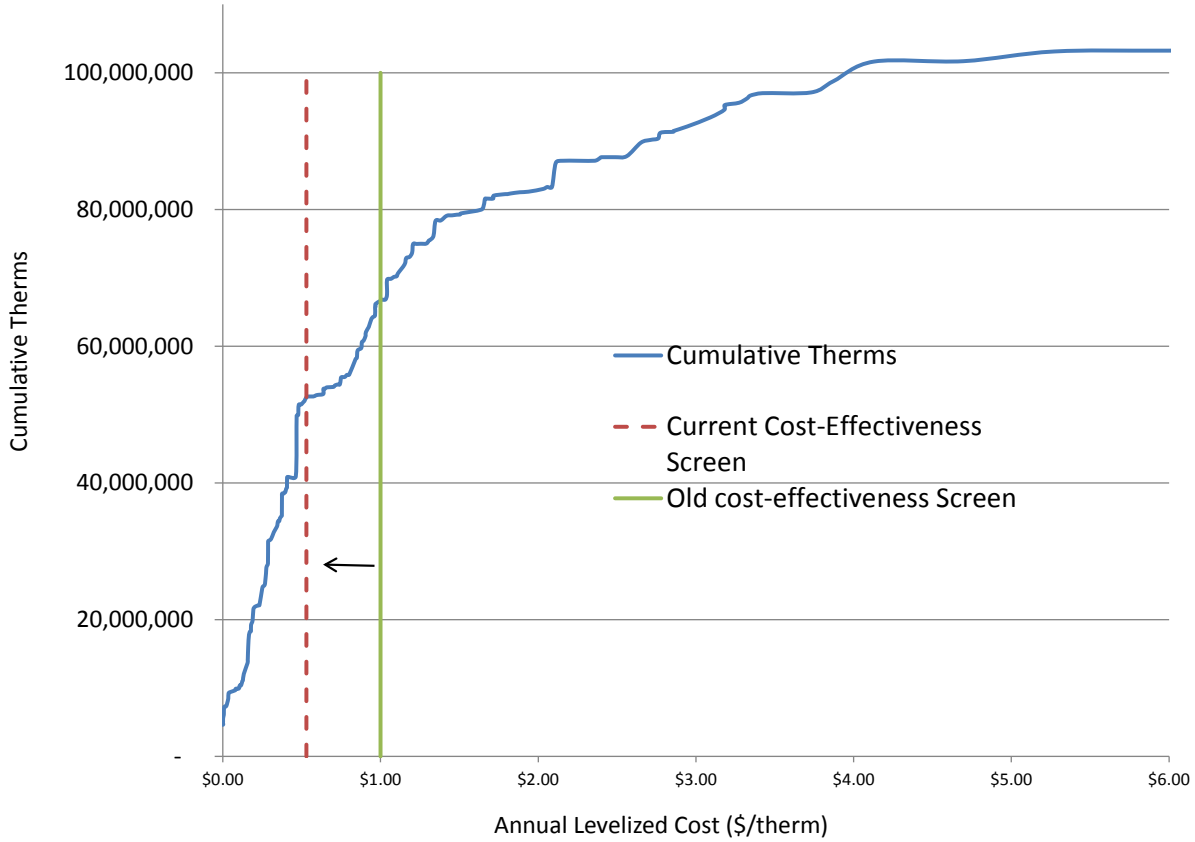


Future electric costs are directly linked to natural gas forward market prices. Gas-fired electricity generation is a growing portion of the electric generating mix, and is the resource that efficiency

avoids. Low gas prices reduce the operating costs of these plants, leading to lower electricity prices. However, because gas generation involves significant investments in generating plant and power delivery systems, the impact of lower gas prices on the avoided cost for electric efficiency programs will not be as dramatic as it has been for gas efficiency programs. PGE and PacifiCorp's updated avoided cost forecasts show a small decline from recent years, mostly impacting the early years in the forecast, compared to an overall 45% drop for natural gas over the last three years of forecasts.

What does this abrupt change in market fundamentals mean for energy efficiency investment? Current and forecasted gas supply market prices can have significant influence upon the mix of measures we support and ultimately upon our ability to meet our goals (figure 16). The crux of the issue is the challenge that low gas prices create for cost effectiveness of both gas and electric efficiency programs and portfolios. In long-term planning, we apply a cost-effectiveness screen to all measures in our 20-year resource assessment. The cost-effective, achievable resource is what we use to provide 20-year deployment scenarios similar to what's shown in Figure 12. The current shift in gas avoided cost reduced the amount of gas savings that could be deployed in NW Natural's 2013 IRP. This can be seen in Figure 16 where the dashed vertical line marks the amount of cost-effective resource available now (approximately 51 million therms) compared to the amount of resource from the prior plan (approximately 66 million therms).

Figure 16. Impact of Lower Avoided Cost on Cost-effective Gas Efficiency Resource



Under OPUC rules, we can offer incentives only for measures considered cost effective, i.e., the measure's benefits to the utility system and ratepayers outweigh the costs. The primary benefit to the utility system and ratepayers is avoided gas or power purchases.

In October 2012, we worked closely with the OPUC to assess the impact of this drop in avoided cost on our gas measure cost effectiveness.[5] Nearly one third of our existing homes gas program savings can be attributed to weatherization measures (wall, ceiling, floor insulation plus duct sealing and air sealing) which with existing savings and cost assumptions were no longer cost effective. In 2012, the OPUC approved a two-year exception for these measures with the following conditions

- Existing condition requirements for measure eligibility would be redesigned to optimize savings per project (e.g. only homes with no existing floor insulation are eligible for our incentive, because even with some existing insulation, the savings increase from added insulation would not be enough to outweigh the project cost)

- Energy Trust must communicate the estimated amount of energy savings per measure installed, providing participants with the tools they need to calculated simple payback and make an informed investment decision

- The overall program must meet cost-effectiveness standards (>1.0 benefit-cost-ratio) by 2014, whether through measure and portfolio adjustments or otherwise.

Each condition is meant to improve the cost-effectiveness of these measures and of the overall gas weatherization program. The question is how to achieve this. Avoided costs are beyond our control. It is possible that gas price forecasts will increase by 2016 as more gas-fired power plants come on line. We have implemented changes to project requirements and communicated with trade allies and stakeholders impacted by the program changes to reduce costs. We have also worked with trade allies to generate y suggestions for improving project cost-effectiveness.

B. Increasing our dollar efficiency

The combination of decreasing avoided costs and the need to go higher up the supply curve of available resources is driving us to look for ways to increase our dollar efficiency, not just in incentives provided per unit savings but in delivery and management of the portfolio of resources within programs.

A key question for the board: Historically, Energy Trust has sought dollar efficiency *and* equity goals (reaching hard-to-serve markets, urban and rural areas, etc.). We expect that increasing emphasis on cost-efficiency will affect this balance, making it harder to achieve equity goals. The following discussion fleshes out how these issues interact.

Figures 17 and 18 show historical trends and near-term projections of levelized costs for gas and electric efficiency programs. For both fuels, 2009 was the highest cost year as we were investing in new initiative ideas and delivery expansion to double goals from prior years. After a recovery adjustment in 2010, costs have steadily trended up again showing it takes a greater investment to reach deeper into our supply curve.

[5] The impact to electric measures has not been revealed since our electric avoided costs have yet to be updated, in 2013. We expected the impact to be much less severe with electric prices dropping ~ 20%

Figure 17. Trends in Electric Cost of Energy Trust Efficiency Programs

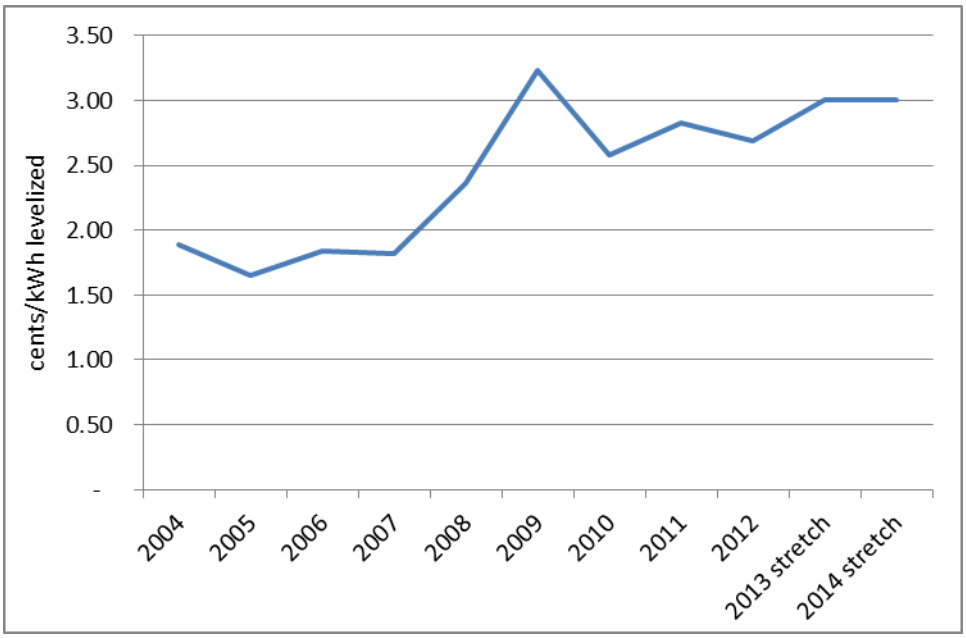
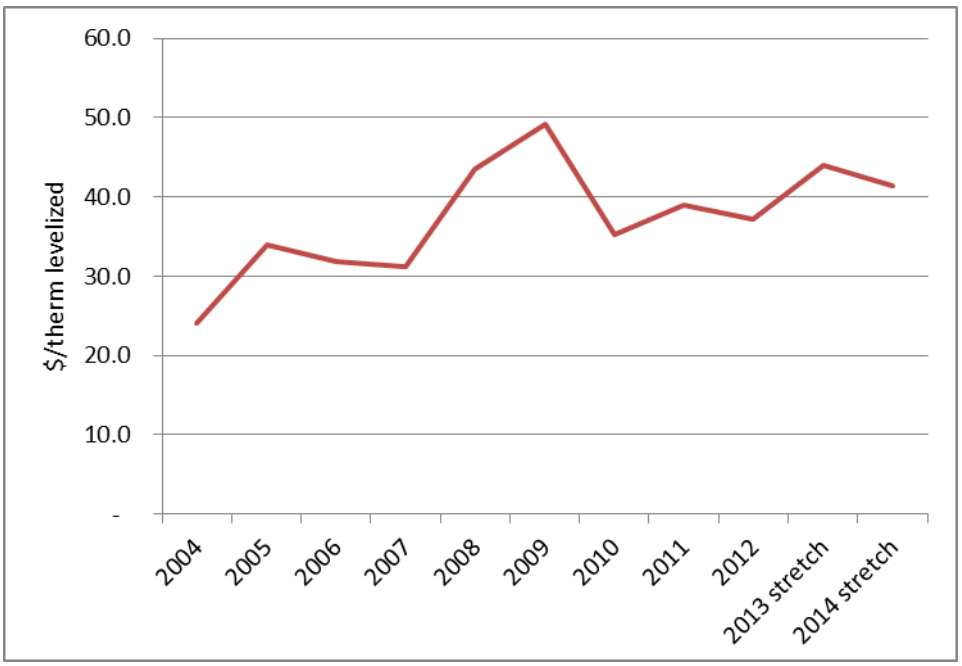


Figure 18- Trends In Levelized Cost of Energy Trust Gas Efficiency Programs



The following discussion illustrates some of the strategies that Energy Trust is using to maintain value by increasing kWh and annual therm savings for each dollar spent.

Transactional Efficiencies. Energy Trust has taken steps internally and with program management contractors to increase the efficiency of its operations, for example:

- Steady growth of web forms for efficiency measures. While they can be complex and costly to institute, web forms reduce paperwork, data transfer time, and errors, while helping to serve customers more rapidly. Web forms make most sense for high volume measures such as appliance rebates, where the initial cost can be recovered from transactional efficiencies. The Existing Homes Program is an example, gaining efficiencies by pushing more program marketing to the web and to the contractors.

- Re-bidding Program Management Contracts resulted in a wide variety of organizational and transactional innovations, reducing program management costs for existing homes and existing buildings. The Existing Buildings program is one example: the program is standardizing program operations around streamlined IT solutions; adding a customer-focused, program-specific call center to answer basic questions (rather than engaging higher paid resources); and optimizing non-lighting project promotions and sales with trade allies.

- Commercial and residential programs now customize the extent of home and facility reviews and audits. While comprehensive audits are efficient in principle, experience has shown that in most cases more analysis does not lead to more action. Tailoring audits and reviews based on how specific customers make decisions is efficient and effective.

- Our Planning Department now authorizes measures with a range of incentives that would be cost-effective rather than a specific incentive level. This significantly reduces paperwork, improves communications, and reduces internal confusion generally.

- New packages of measures for new small commercial buildings. Because of the small scale of the buildings and the time constraints of owners, cost-effective delivery of detailed, measure-by-measure analysis is difficult. By grouping measures into packages of increasing efficiency and cost, Energy Trust helps customers make rapid decisions and encourages more measures.

Measure mix. As noted above, the OPUC has agreed that Energy Trust may continue to offer measures that currently do not meet cost-effectiveness tests for a two-year period. During this period, we will pursue cost-efficiencies and at the same time, identify and eliminate measures that are unlikely to be cost-effective in most future scenarios. One example is last year's decision to eliminate duct sealing from the existing homes program, based on testing.

Targeting. For measures with structural cost-effectiveness issues, such as gas weatherization, we are considering ways to target customers with high energy use, where higher savings are likely. There are relatively straightforward ways to identify areas with high-consumption homes. We are approaching this carefully because it involves complications:

> First, the existing homes program is to a significant degree marketed by our contractors. To reduce costs, we are encouraging them to take a larger role in marketing. This reduces Energy Trust's role in customer selection. How can we encourage contractors to target high-energy-savings-potential customers? We have ideas for changing the incentive system to drive toward results, but they would complicate the program in other ways.
>
> Second, Energy Trust's philosophy has been to push for broad participation in programs, including difficult-to-reach markets. While there are large users in any demographic group, lower-income households tend to use less energy. How does Energy Trust balance equity and cost-efficiency? Part of the answer lies in the distinction between

targeting the program (more promotion for high users) and keeping the program open to all applicants. There is also the option of continuing dedicated, higher-cost efforts underserved markets at limited scale.

Third, targeting impacts long term resource planning. If Energy Trust targets high users because they alone are more likely to provide cost-effective savings, we may not serve other customers at the lower end of the spectrum, who provide less cost-effective savings. So we cannot include them in our estimate of cost-effective available efficiency resources. We are just beginning to explore whether and how to take this path. A great deal depends on how other benefits to ratepayers, including comfort, are valued, and whether and how the OPUC considers such benefits in cost-effectiveness tests. One middle path is to target high users, keep programs eligible for all users, and in parallel provide some special targeted services for limited income customers. Striking the right balance between high users and special customers will inevitably be difficult.

Retail Incentive Design. Energy Trust's cost-effectiveness test largely involves the Total Resource Cost (TRC), which counts the entire cost of measures regardless of incentives. Thus, lowering incentive amounts is not a primary tool for improving cost-effectiveness. However, there are situations where the way incentives are structured, along with program structure, may impact the prices that contractors charge. For example, the current pilot for prescriptive duct sealing attempts to reduce the contractor price by eliminating contractor testing requirements. The pilot also offers a standard, fixed incentive for contractor work, with the hope that contractors will offer this price rather than incurring the higher marketing costs and lower customer acceptance associated with a higher price.

Upstream Incentives. Energy Trust has for many years used wholesale incentives to acquire large-volume measures. For example, we contract with a single firm tor mail Energy Saver Kits (CFLs, shower heads and aerators), and offer bulk incentives to retailers that stock and sell compact fluorescent bulbs. Energy Trust is experimenting with another strategy called Market Lift, which pays retailers who increasing the sale of efficient equipment in their stores, however they sell and price it. We are considering department-wide or store-wide incentives for increasing market share on a range of equipment, and upstream incentives for commercial markets. These strategies may more effectively motivate retailers while eliminating transaction costs for one-at-a-time rebate applications. They have most promise for measures where our success in advancing efficiency has left little remaining efficiency potential. An example is dishwasher rebates, where we have pushed the market far enough that the transaction cost of processing rebates is higher than the value of the efficiency.

4. Large customer electric efficiency: opportunities and challenges

A. Background

The 1999 law that gave rise to Energy Trust, SB 1149, required the electric utilities to collect three percent of their revenues for efficiency and renewable energy programs. This three-percent charge is collected from all electric customers regardless of the amount of energy they use. Large customers have the option of avoiding these charges and instead "self-directing" investment into efficiency or renewable projects certified by ODOE. However, in practice only a small number of sites eligible to self-direct do so. Most of those who self-directed in 2003 now voluntarily pay the public purpose charge and participate in Energy Trust programs. For example, in PGE territory, fewer than 20 of approximately 190 customers eligible to self-direct do so.

Passed in 2007, Oregon's Renewable Energy Act (SB 838) authorized the OPUC to approve the collection of additional electric efficiency funds from PGE and Pacific Power customers using less than one average megawatt (aMW) or more per year. Customers using more than 1 aMW per do not pay these supplemental charges and may not benefit from this funding. SB 838 does not address voluntary payment of supplemental efficiency charges.

Energy Trust efficiency programs are not funded on a strict funds-in, funds-out basis, yet the 838 limitation implies such a logic. To ensure compliance with the limitation, after 2007, Energy Trust, the OPUC, electric utilities, and stakeholder organizations including the Citizens Utility Board (CUB) and Industrial Customers of Northwest Utilities (ICNU) informally agreed that Energy Trust will keep funding for large-customer incentives to their historic proportion of SB 1149. If large-customer incentives exceed the pre-2007 percentage of 1149 funding, Energy Trust would have two years to align these incentives with the historic allocation.

Due to success of the programs in delivering high volume and low-cost savings to large customers, incentives to these customers have grown. Given current trends in program investment, we anticipate a need to curtail spending for large customers in PGE's service territory in 2015 or sooner. This funding limitation means that we may not be able to secure all cost-effective efficiency from these customers.

B. Issues

Looking forward, several strategic questions and problems arise:

Near term

- Is the analytical methodology Energy Trust uses to assess compliance with this restriction endorsed by regulators? How do inconsistencies or lack of information affect our ability to manage for compliance?
- How could programs reduce spending on large customers while minimizing damage to the market, customers' efficiency efforts, and their relationship with Energy Trust?
- Can Energy Trust achieve annual savings goals while limiting large customer participation? How?
- Should Energy Trust commit to a new, high-value mega-project in PGE territory now, even knowing that payment of this incentive will likely exceed the spending limit and curtail future mega-projects for some time?

Longer term

- How will this challenge limit impact our costs and affect 2015-2019 strategic plan goals and utility integrated resource plans?
- What program strategies can help make up some of the lost savings toward long-term annual goals?
- Are there other ways to capture all cost-effective efficiency for this segment, without a change in legislation?

Board questions: Below, we provide background on these issues. At the retreat, we will: (1) ask the board for a "gut-check" on the options that we are considering for program design and implementation, once we reach the large customer spending threshold; (2) heighten awareness of the potential impacts on Energy Trust's customer relationships and ability to fulfill our mission, and (3) solicit any other aspects of this issue you would like to explore for the 2015-2019 plan.

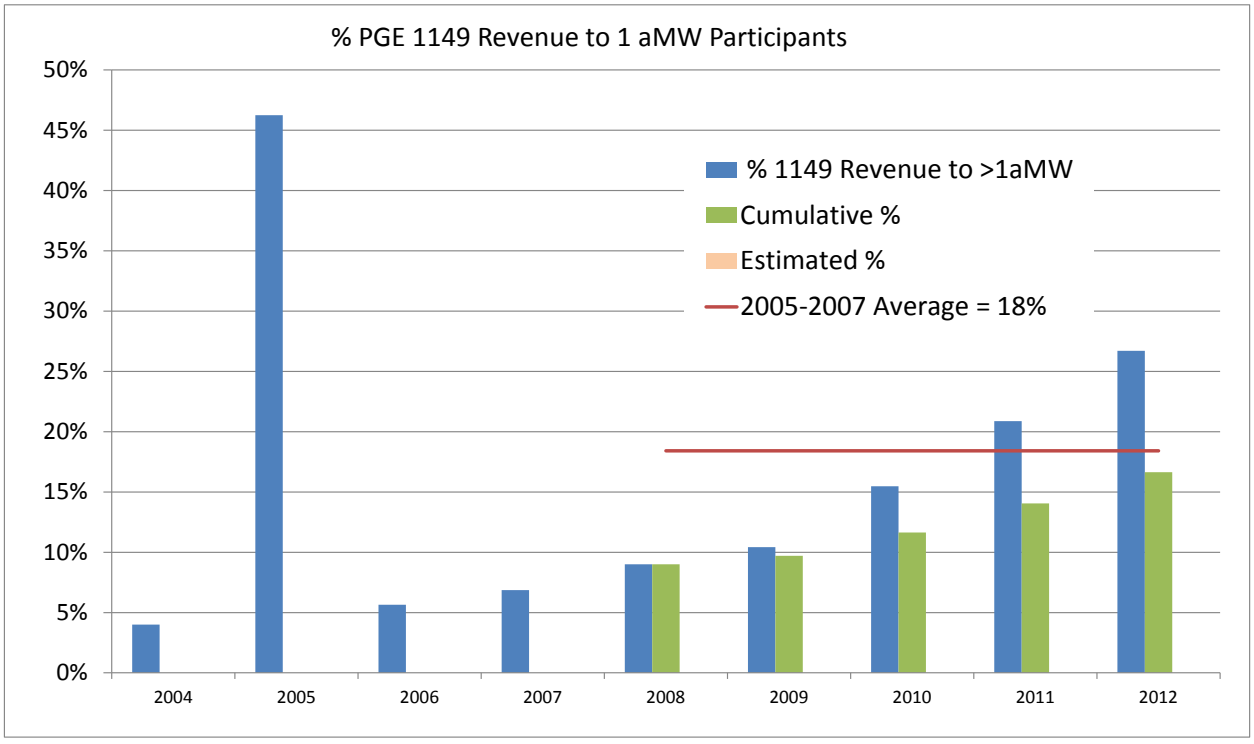
C. How close are we to the large-customer funding limit?

Large-customer incentive spending has increased since 2007, both in absolute terms and as a percentage of SB 1149 spending, for a variety of reasons:

- In 2008, Energy Trust decided to internally manage the industrial program. This led to more productive relationships with customers and higher energy savings.
- Strategic Energy Management has effectively acquired low- and no-cost savings, increasing overall awareness of on-site energy usage and leading to additional capital projects.
- Mega-project incentive payments, although rare, have a major effect on spending in any one year and on the historical average. Mega-projects entail more than $500,000 in incentives and require special procedures and board authorization. The 2012 mega-project in PGE territory involves phased construction and multiple stages of savings expected to deliver over 40 million kWh of highly cost-effective savings. Incentive payments will total up to $4 million. The first and largest payment was made in 2012, with more savings and payments in 2013 and possibly 2014.

Figure 19 plots incentives paid to over-1 aMW participants as a percentage of SB 1149 annual revenues by year. The cumulative post-2007 average percent of revenue after 2012 is 17% compared to the baseline 2005-2007 average of 18%. In order to not exceed the 18% baseline in 2013, we estimate that 2013 incentives will need to be less than $7.0M, which is $500,000 less than in 2012. We are farther from reaching the limit in PacifiCorp territory where the cumulative post-2007 average of 22% is well below the 27% baseline limit.

Figure 19. PGE Funding vs. Limits



D. What's at stake?

It is challenging to forecast what resource opportunities may be lost among larger customers if funding is limited or unavailable. This largely depends upon highly sensitive, individual business decisions and whether large firms make more capital investments in the next few years. We see growth and near term efficiency opportunities in data centers and semiconductor manufacturing, and longer range opportunities for combined heat and power (CHP) projects for a variety of industrial and institutional applications.

Based on limited data, our 20-year resource assessment shows more than 50% of savings potential in large sites remains to be acquired. This estimate excludes any new data centers and CHP opportunities, which have proven difficult to predict. From utility retail sales data, we also know that load from sites >1aMW comprise up to 16% of PacifiCorp Oregon load and 21% of PGE's load. If we capped incentive funding for sites in PGE territory over the next five years, we anticipate 8-12 aMW of savings could be lost, or 32-48 aMW over a 20-year period. We may be able to "roll" projects forward in time and if funding continues to be limited, the issue will remain. Furthermore, many large efficiency projects are scheduled as part of other planned capital improvements, and might not be available if funding is not provided at the right time.

E. Analytical Methodology and Tracking Compliance

We have had several years working with the approach that emerged from the informal agreement among the OPUC, utilities and stakeholder organizations to ensure large customers do not benefit from supplemental funding, in which large-customer incentives should not exceed the historical percentage of SB 1149 funding.

Based on this experience, several methodological issues have arisen. As the funding limitation approaches, it becomes more and more important to ensure that Energy Trust, the OPUC, electric utilities, stakeholders and others understand and support this mechanism. Energy Trust is working with the OPUC, utilities and others to clarify whether modifications in the current methodology are warranted.

In order to comply with this limitation, Energy Trust also needs accurate data about which sites are paying supplemental efficiency charges. We began exchanging data under our new data-sharing agreements in May, 2013 and by this fall, should have a better idea of how much it helps us identify large users.

Progress on these fronts will clarify our proximity to this funding limitation, and when we can expect to reach it by utility. We would complete this work before making programmatic changes with significant financial implications.

F. Program Management Options

This section summarizes and prioritizes various management options staff considers to be viable to address large-customer funding limits if the threshold of spending occurs. At the strategic planning retreat, board members are being asked to consider the following and discuss: What is your gut reaction to the Actions we are considering implementing when we

reach the funding threshold for these customers? What else should we be considering or watching out for?

i. Design principles

Program design and incentive design is far more art than science. Small nuances in design can make a big difference, and even when deployed skillfully, attempts to change program outcomes can over- or under-shoot the management objective. The task is complicated by the need to develop new sources of cost-effective savings to replace savings from large customer projects that are lost due to the SB 838 funding constraint.

Because the funding constraint appears likely to affect PGE territory within the next two years, the options described below are specific to PGE customers. They are intended to be temporary, subject to being changed when spending targets are achieved.

Staff has assessed a range of options in light of how well they would:

- Reduce spending for large customers and their projects;
- Affect spending in a single utility territory only (PGE);
- Minimize damage to our ability to reach utility IRP savings targets;
- Minimize damage to the market, customers' efficiency efforts, and customer relationships;
- Avoid short-term solutions that could create larger future problems ;
- Involve multi-year horizons that allow us to implement changes and see results; and
- Apply to large-customer investments across all Energy Trust business programs: existing buildings, production efficiency and new buildings programs.

ii. Options to reduce spending for large customers and projects in PGE territory

We have identified two simple options that pose the least risk of negative consequences:

- Annual per-site incentive caps: Where the large-customer limitation is about to be reached, Energy Trust could reduce Production Efficiency program funding caps per customer per site, from the current $1 million per year to $500,000 per year. We could also cap annual incentives at half this amount ($250,000 per year) for sites that self-direct the public purpose charge. Reducing annual incentive caps would naturally limit spending on larger customers without requiring broader communications to or fundamentally altering existing services or incentives for all customer classes.

- Suspend new mega-project commitments: In a funding-constrained environment, Energy Trust could suspend funding new mega-projects in PGE territory until large customer spending reached specified levels.

If these two options do not sufficiently reduce spending on large customers in PGE territory, we would consider a secondary option with greater operational impact and risk:

- Cap on PGE incentives: We could set an overall cap on large-customer incentives in PGE territory and a derivative cap for each program. Within the program cap, the programs would run as normal and projects would be served on a first-come, first-served basis. When an individual program reached its cap, coordination of pipeline and funding across all programs serving large customers would be triggered to ensure that available annual funds for these customers are leveraged across the portfolio. If spending up to the overall annual cap appears likely based on forecasts, a reservation system would wait-list customers until funds become available..

This approach would require close coordination and monitoring across the three Energy Trust programs serving large customers: Existing Buildings, Production Efficiency and New Buildings. This coordination would be complex, but would pose less risk to savings goals and customer relationships.

Our experience with this approach in 2005 taught us that it can injure customer relationships, and it is hard to repair the program's standing in the marketplace even years after a funding shortfall has been eliminated.

Before invoking these other options, we will consult with customers, the board, the CAC and the OPUC.

iii. Options considered but not recommended at this time

- Reduced incentive levels ($/kWh) for large customers: Our incentives are designed to produce market activity at minimum cost. Incentives are set to bring cost-effective projects down to the 2-to-4-year payback range that most businesses require for investment. Lowering incentives per-project by half does not result in half of the savings, it is far more likely that customers wait or don't invest at all except on the very lowest hanging fruit projects. Therefore, incentive changes are likely to result in fewer customers participating, some large customers disengaging entirely and/or self-directing, which would exacerbate the funding constraint.

- Large customers compete for incentives: Most large customers have clearly and sensibly stated they will not invest considerable effort to develop large projects contingent on winning a competition, nor will they schedule their capital improvements to coincide with a contest timeline. This effect has already been demonstrated in the transition from former ODOE Business Energy Tax Credits to the current Incentive Program. There is also concern that the companies who can most afford to wait in line need the assistance least.

- Discontinue funding for projects at self-directing sites: If funding were limited, there is intuitive appeal to discontinuing funding to customers who are not helping fund Energy Trust energy efficiency programs because they self-direct efficiency projects. We approach this idea cautiously for several reasons: First, energy savings from these projects do benefit the power system as a whole and all customers because they defer more costly energy resource investments. Second, because Energy Trust pays lower incentives to self-directors, these customers provide some of the lowest-cost Energy Trust savings. Discontinuing funding would disrupt efforts by Energy Trust to build longer-term relationships with these customers. Experience with Energy Trust often leads such customers to end self-direct and derive full Energy Trust benefits. Customers bristle if they contributed to efficiency funds in the past, prior to self-direction. Finally, this option would be difficult to apply temporarily or in a single utility territory.

iv. Making up for lost savings

In addition to the above funding-management options, several program strategies have potential to provide additional, cost-effective savings to mitigate the near-term effects of the large-customer funding limitation:

- Focus program development efforts on below-1-aMW sites: We can use the techniques and strategies that work for the large customers by re-focusing them on smaller and mid-size participants. The design challenge of this strategy would be to grow savings from smaller businesses while containing costs. This seems workable given the low levelized costs of these programs today. Scaling custom delivery and services to cost-effectively meet the needs of smaller industries is expected to be a key development focus of Production Efficiency over the next 3 years.

- Lower-cost savings from large customers, Strategic Energy Management: Strategic Energy Management (SEM) and other offerings focus on low- and no-cost operational savings. These approaches have been essential during the economic recession. If incentives were curtailed, it would be important to maintain these approaches. Unfortunately, a valuable benefit of SEM works against us on this issue. SEM customers become well-versed in recognizing energy waste and project opportunities. Our preliminary results show that companies complete twice as many projects after engaging in SEM program, and may make it harder for us to slow down spending on capital projects as we have in the past.

While neither of these strategies directly reduces spending on large customers, they help meet savings goals in a funding-constrained environment.

Program strategies such as these will be vetted with the board, CAC and public through the annual budget and action planning process.

G. Longer-term issues

iii. Effect on goals, IRP, and 2015-2019 planning

Longer term, the customer funding limitation is likely to leave cost-effective energy savings on the table. Large industrial projects are often time-sensitive, built into plant capital improvement cycles and broader industrial equipment upgrades. Limitations on large customer funding may not only delay when savings are acquired, it may foreclose opportunities and reduce the cost-effective conservation resource. We will need to develop tools to estimate this savings reduction for future IRPs and the Energy Trust 2015-2019 strategic plan.

iv. Are there other ways to capture all cost-effective efficiency for this segment without legislation?

There has been some discussion of customers voluntarily paying for supplemental efficiency services. Current law does not address this, and depending on how it were done, it could change the Energy Trust model. This approach could also apply to Transport Gas customers, which is the other significant cost-effective savings opportunity Energy Trust is unable to serve now.

5. New technologies and methods: opportunities and challenges

As discussed at the 2012 board retreat, the current supply of proven new electric efficiency opportunities is being secured through program activities, building codes, appliance standards, state programs and market activity at a pace that does not appear sustainable after 2016. Past that date, there will still be much to do, and the volume and difficulty of acquiring the remaining proven resources suggest that acquisition will slow down.

However, experience over the last 33 years of efficiency programs and knowledge of products on the road to commercialization promise significant additions to the proven efficiency resource during the next twenty years.

Forecasting the pace of introduction of these technologies and their cost has been difficult historically, yet if they are ignored, utilities may plan generation resources they do not need.

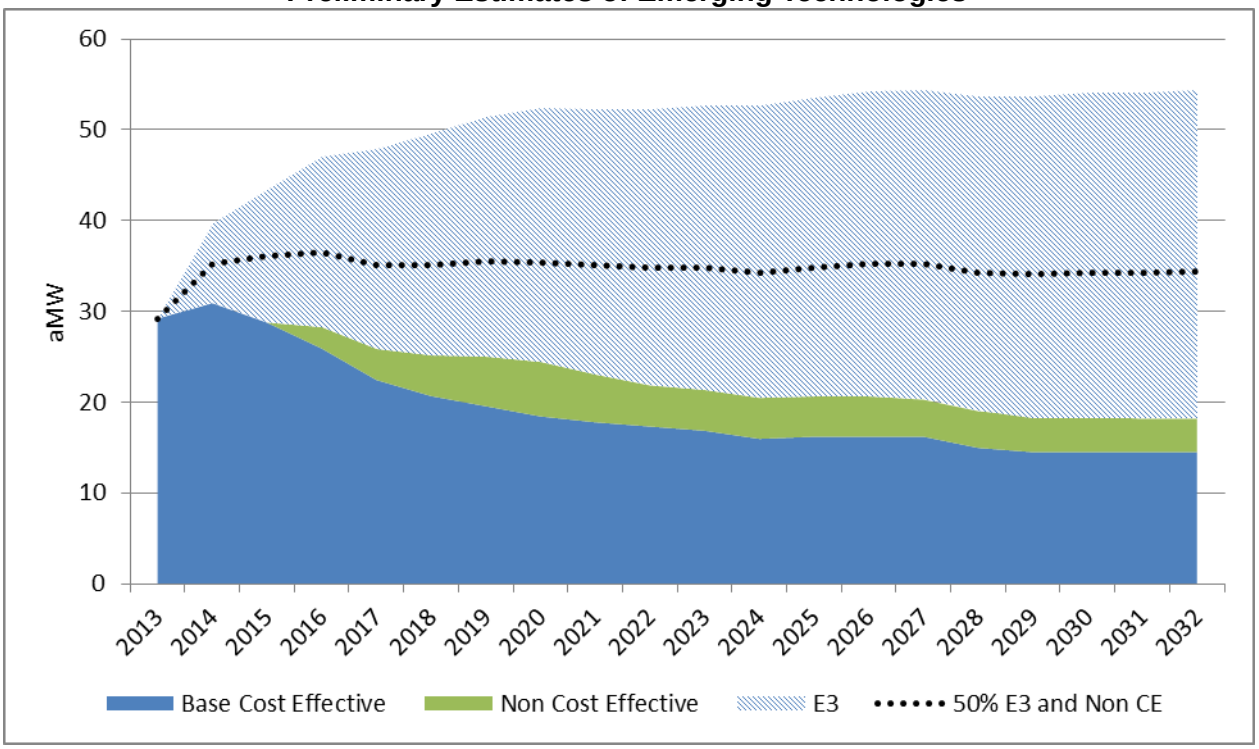
To address this issue, Energy Trust has been working in two areas:

- Incorporating technologies and practices that have recently passed over the threshold of commercial viability and cost-effectiveness. For example, the 2013 supply models include residential behavior programs and a wider array of LED lighting than ever previously envisioned. We will also explore quantifying the potentially cost-effective potential for fossil combined heat and power, a resource that has proven difficult to estimate because it depends on gas prices and involve confidential, plant-specific details.

- Estimating the range of future efficiency resources from new technologies and practices. This is a subject about which there are only a few studies, none of which to our knowledge have been used in integrated resource planning to consider deferring utility

generation investments. Bonneville Environmental Foundation and its contractor, E3, were funded to explore this issue as part of the settlement to close PGE's Boardman coal plant by 2020. The BEF/E3 analysis is based on a Lawrence Berkeley National Lab study that assumed that in 20 years all energy users could cost-effectively employ the most efficient technology available today. Energy Trust augmented that model with our information about specific technologies. We and PGE agreed that this was a creative and interesting start, but in itself insufficiently reliable for integrated resource planning.

Figure 20. Scenarios for PGE Energy Efficiency Deployment Including BEF/E3 Preliminary Estimates of Emerging Technologies



As figure 20 shows, the base cost-effective achievable resource is augmented with three increments: 1) The green addition shows a modest non-cost effective resource in our existing resource supply curves, 2) the large light blue layer is from the BEF/E3 estimate of total possible resource currently unaccounted for, and 3) the dotted black line represents the available savings if half of the non-cost effective and BEF/E3 estimates come to fruition. If 50% of the estimated resource beyond our base curve is realized, we could sustain our high levels of annual acquisition over the 20-year period.

The BEF/E3 estimate was intended to be exploratory. We see it as a good start, and will continue to work with PGE to prepare for their 2015 IRP and develop a more defensible set of scenarios for emerging technology efficiency.

In 2013 and early 2014, we plan to comprehensively update our resource assessment for all sectors, including emerging technology. Our goal is to address emerging technologies in the 2015-2019 strategic plan and in all utility IRPs with more confidence. We plan to do so not by creating more precise estimates, but by approaching the problem with approximations from different angles.

For example, one approximation might be based on the physical limits to efficiency for various end uses. That approach may be idealistic about overcoming all engineering problems, and conservative in disallowing product substitution (e.g., substituting evaporative cooling for condenser cooling). Another approximation might focus on innovations we see as near-commercial, using NEEA scanning. When we have completed three approximations, we would compare them, and assess reasonable upper and lower bounds for future efficiency that utilities could view this as a firm resource. This work will be complete to inform the next Strategic Planning cycle to start in 2014 and provide input to the next IRP cycles for each utility.

Strategic Plan

December 18, 2009

Executive Summary

Energy Trust of Oregon is an independent nonprofit organization dedicated to helping ratepayers invest in energy efficiency and clean, renewable energy. Created in response to Oregon legislation and overseen by the Oregon Public Utility Commission, Energy Trust opened its doors in 2002. By 2009, it had saved Oregon ratepayers $440 million, while helping utility customers keep their energy costs low. Its activities have been guided by a series of strategic plans.

In 2007, the Oregon Legislature extended the life of Energy Trust's chief funding mechanism, a public purpose charge paid by electric utility customers. Previously set to sunset in 2012, the fund was extended to 2026. At the same time, the Legislature authorized utilities to collect supplemental funds for certain electric energy efficiency programs. Separate agreements with gas utilities address natural gas efficiency programs.

This draft strategic plan was developed to give a fresh, long-range perspective to Energy Trust's activities in light of these developments, and a more specific projection of activities over the coming five years.

Our Vision

Energy Trust envisions a high quality of life, a vibrant economy and a healthy environment and climate for generations to come, built with renewable energy, efficient energy use and conservation.

Our Purpose

Energy Trust provides comprehensive, sustainable energy efficiency, conservation and renewable energy solutions to those we serve.

Our Goals

Goal 1: Long-term, help utilities and their ratepayers acquire all cost-effective energy efficiency.

Five-year goals:

- Between 2010 and 2014, save 256 average megawatts of electricity, contingent on adequate funding, through efficiency and conservation
- Between 2010 and 2014, save 22.5 million annual therms of natural gas, contingent on adequate funding, through efficiency and conservation

Goal 2: Long-term, accelerate the rate at which new renewable energy generation is produced, helping to achieve Oregon's 2025 goal of meeting at least eight percent of retail electrical load from small-scale renewable energy projects.

Five-year goals:

- Between 2010 and 2014, achieve an additional 23 average megawatts of renewable energy
- Flexibly expand markets including hydro, solar, geothermal, biopower and wind

Activities Over the Coming Five Years

To achieve these goals, Energy Trust proposes a variety of 2010-2014 activities, detailed on pages 13-17.

1. Accelerate energy efficiency investments at a pace consistent with available funding
2. Maintain support for a variety of renewable energy technologies
3. Encourage innovative technologies and practices
4. Support development of clean energy businesses
5. Provide excellent customer service to all Energy Trust participants
6. Bring a broad perspective to two-year budgets and action plans by considering their overall balance and equity
7. Communicate the value of energy savings and renewable energy generation
8. Maintain an efficient, effective and transparent organization that responsibly invests ratepayer funds

Background

Energy Trust came into being in the aftermath of the 2000-2001 energy crisis, when a decade of underinvestment in energy efficiency and resources, a multi-year drought and market manipulation cost Northwest electric ratepayers and the Northwest economy billions of dollars (Northwest Power and Conservation Council, *Fifth Power Plan*, volume 1, page 9 (2004)). The first lesson power planners drew from the crisis was that the region would have fared much better if energy efficiency investment had not stalled in the 1990s. Going forward, planners said:

> "the region [must] increase and sustain its efforts to secure cost-effective conservation immediately. . . . [I]mproved energy efficiency costs less than construction of new generation and provides a hedge against market, fuel and environmental risks. To achieve these benefits fully, however, stable and sustained investment in conservation is necessary. Although conservation may result in small rate increases in the short term, it can reduce both cost and risk in the long term. (*Fifth Power Plan*, volume 1, page 4)

In Oregon, lawmakers had not waited for the energy crisis to establish steady funding for energy efficiency and renewable energy. In 1999, the Oregon Legislature required investor-owned electric utilities to collect three percent of their electric rates for investments in energy conservation and renewable energy.

The Legislature also authorized the Oregon Public Utility Commission (OPUC) to direct most of these public purpose funds to an independent, non-government entity. Because economic pressures had discouraged utilities from investing in energy efficiency during the 1990s, the OPUC determined the three-percent ratepayer charge should be managed by an entity devoted exclusively to ratepayer interests in energy conservation and renewable energy.

Thus, in 2001, Energy Trust, a nonprofit organization, was created with guidance from the OPUC to invest in energy efficiency, renewable energy and market transformation programs for Portland General Electric and Pacific Power ratepayers.[1] Energy Trust became the principal administrator of energy efficiency and renewable energy programs for the benefit of ratepayers of Oregon's two largest electric utilities.

Appreciating the benefits of energy efficiency, gas companies—NW Natural in 2003 and Cascade Natural Gas in 2007—asked Energy Trust to offer comparable services to their customers. Energy Trust programs now served customers of the four largest investor-owned utilities in Oregon, or 82 percent of Oregon's total utility customer base in 2007. Energy Trust also provided a subset of programs to customers of Avista in 2006 and 2007.

In 2007, the Legislature passed the Oregon Renewable Energy Act, which determined that the three-percent charge should be expanded to capture more electric efficiency. The collection of the three-percent charge was extended from 2012 to 2026, and electric utilities were allowed to increase rate collections for energy efficiency above three percent. The resulting increase in electric revenues, combined with gas revenues, increased Energy Trust total revenue from about $30 million in 2002 to an expected $94 million in 2009.

[1] Energy Trust invests about 74 percent of the three-percent fund. Another 16 percent goes to low-income housing and weatherization under the oversight of the Department of Housing and Community Services, and 10 percent goes to weatherization in K-12 schools under the direction of educational service districts.

The experience of the last seven years has validated the Legislature's foresight. Energy Trust programs have delivered significant benefits to utility ratepayers and broad economic and environmental benefits to every Oregonian.

Since 2002, Energy Trust programs have provided almost as much energy as an average coal power plant would have—285 average megawatts, enough clean energy to power 221,000 Oregon homes. The total gas savings to date, 8.9 million therms, is enough to provide heat for approximately 18,300 Oregon homes. Starting from 15 average megawatts saved in 2002, Energy Trust expects to save 34.9 average megawatts and 2.9 million therms of gas in 2009, even in a downturned economy.

These savings translate to lower energy costs for utility ratepayers. In 2008, the combined value of utility bill savings to customers from Energy Trust programs was $144 million. Since 2002, utility customers have saved a total of $440 million as a result of these programs. Nonparticipant ratepayers also benefit because Energy Trust programs help keep utility costs for new energy resources as low as possible. Every dollar invested in electric energy efficiency is now saving residential, commercial and industrial ratepayers more than five times as much in avoided generation and transmission costs. Natural gas efficiency costs are about one-third of the cost of gas generation, transportation and storage.

In addition to specific and direct ratepayer benefits, Energy Trust programs deliver a significant side-benefit: helping achieve Oregon's greenhouse gas reduction goals.[2] By delivering energy resources without the need for fossil fuel generation, Energy Trust programs are now keeping an estimated three million tons of carbon dioxide out of the atmosphere—the equivalent of removing 525,000 cars from Oregon roads every year.

These programs also represent a long-term investment in Oregon's economy. The money Energy Trust invests in energy efficiency and renewable energy stays in Oregon, providing Oregon jobs and wages. Since 2002, Energy Trust programs have created more than 1,800 Oregon jobs, stimulated a $60 million net increase in wages and $9.1 million in new business income. The Energy Trust program delivery model developed and continues to build a Trade Ally Network of now more than 1,200 contractors. These are predominantly small businesses throughout the state who install energy-efficient equipment, weatherization, solar systems and other clean energy improvements in homes and businesses, and they play a pivotal role in building Oregon's green economy.

The Strategic Plan

In the years since Energy Trust's first strategic plan was written, the scope of energy efficiency and renewable energy programs has expanded, driven by a collection of economic, environmental and other objectives: saving consumers money; avoiding higher-cost generation, transmission and distribution for new power plants; reducing carbon emissions; and building a clean energy economy. Overall, demand for Energy Trust programs continues to grow, even through the 2008-2009 economic downturn.

The Long Term: This strategic plan takes a long-term perspective and acknowledges that a range of factors—the economy in particular, but also policy and regulatory decisions—will shape our work. The vision and purpose described in the plan comprise this long-term perspective.

[2] By 2010, begin to reduce greenhouse gas emissions; by 2020, achieve greenhouse gas levels 10 percent less than 1990 levels; and by 2050, achieve greenhouse gas levels 75 percent below 1990 levels.

These elements are not quantified because funding decisions, legislation, economic conditions, technological developments and other unknowns will ultimately guide and determine what we accomplish. The plan describes *how* we expect to leverage developments we can reasonably foresee, without attempting to quantify activities beyond five years.

The Coming Five Years: The utilities' integrated resource planning analyses, reviewed by the OPUC, provide a framework for Energy Trust to project quantitative goals for the coming five years. Those analyses assume that utilities will collect, and Energy Trust will invest, sufficient funds to capture all cost-effective energy efficiency. Integrated resource plans, then, foresee Energy Trust programs growing over the coming years.

Funding Assumptions: Integrated resource plans are not rate proposals, and, it takes rate proposals to fund these programs above a base level. At the time this plan was written, NW Natural was the first sponsoring utility to have filed a rate schedule and received OPUC approval to fund enough efficiency to achieve integrated resource plan goals in 2010 and 2011. This plan assumes that PGE, Pacific Power and Cascade Natural Gas will also receive OPUC approval to fund efficiency programs at comparable levels, and that all the utilities will provide funding to achieve integrated resource plan goals for the five years covered by this plan (2010-2014).

The plan's five-year goals for natural gas savings reflect uncertainty about the future of the NW Natural industrial gas efficiency program. It is possible that this program will continue for five years, but it is also possible the current program will end after its pilot year, reducing the gas program's five-year savings projection.

There is also an unknown regarding the electric industrial efficiency program. The electric utilities' integrated resource plans include energy savings for sites that use more than one average megawatt per year. Because the 2007 Oregon Renewable Energy Act restricts energy efficiency funding for these large energy users, it is unclear whether all of the energy savings shown in Figures 1 and 2 (page 7) can be achieved, or whether the same goals can be achieved with increased energy savings from smaller customers.[3]

Beyond Five Years: It is harder to forecast energy efficiency and renewable energy investment beyond five years. Utility integrated resource plans consider only *known* energy efficiency measures and technologies. For existing homes, buildings and industry, this "known resource" is largely deployed by 2016. In the integrated resource plan analyses, forecasted savings diminish after that. Based on historic experience and the dynamic nature of technology development, there is little doubt that energy savings from technologies that are now in development will prove cost-effective and that new efficiency resources will be discovered. We cannot estimate the size, cost or value of this resource, however, and it will take significant innovation to replenish the supply of efficiency measures as known measures are fully deployed. This plan's five-year objectives therefore include development activities to help ensure that new efficiency resources will be there when needed.

Renewable Energy: Since 2002, Energy Trust renewable programs have helped develop almost 100 average megawatts of electricity using a variety of technologies, primarily utility-scale wind projects. In 2007, the Legislature adopted a community energy goal: to meet at least eight percent of Oregon's retail electrical load from small-scale renewable energy projects of 20

[3] These uncertainties are magnified by the fact that, because of restrictions in Oregon administrative rules, utilities do not provide Energy Trust with a complete list of firms that use more than one average megawatt of energy. Energy Trust has proposed rule changes that would address this problem. Those changes would allow us to better plan and manage programs to achieve the goals of this plan.

megawatts and less by 2025. At the same time, the Legislature limited Energy Trust renewable energy investments to projects of that size. As a result, Energy Trust programs evolved away from large-scale utility projects, and in 2008 began to focus on demonstrating smaller, community-scale and distributed-generation projects.

This strategic plan assumes relatively stable funding for these renewable energy projects over the coming five years. Energy Trust plans to build on the strengths it developed working with small- and medium-scale projects over the last seven years by engaging with market actors to help develop small-renewable industries. Energy Trust will remain flexible enough to shift resources to changing market opportunities; stay engaged in hydro, solar, geothermal, biopower and wind technologies; expand assistance to project owner-developers; and team with utilities to reduce barriers to development.

In Summary: Looking backward and forward from 2009, the Legislature's original premise in enacting the 1999 law remains compelling. More than ever, energy efficiency is the best energy buy for utilities and their customers—it costs a fraction of new fossil fuel generation, delivers persistent cost savings to consumers and brings economic and environmental benefits to the entire state. Smaller, community-scale renewable energy projects represent more than just economic value, they also help build stable communities. Energy efficiency and renewable energy are largely invulnerable to the volatile fuel prices that plague fossil fuel energy markets. Moreover, because these investments reduce carbon emissions, energy efficiency and renewable energy offer an economic advantage if greenhouse gases are regulated.

Energy Trust envisions a future where homes, buildings and industries have integrated renewable energy and efficiency features that meet their energy needs more intelligently, cleanly and economically. In the remainder of this draft strategic plan, Energy Trust elaborates this vision, outlines different funding scenarios and discusses its role in energy efficiency, conservation and renewable energy.

Our Vision

Energy Trust envisions a high quality of life, a vibrant economy and a healthy environment and climate for generations to come, built with renewable energy, efficient energy use and conservation.

Our Purpose

Energy Trust provides comprehensive, sustainable energy efficiency, conservation and renewable energy solutions to those we serve.

Our Goals

Goal 1: Energy Efficiency

Long term, Energy Trust aims to help ratepayers acquire all cost-effective energy efficiency. Energy Trust analyzes the cost-effectiveness of its measures and programs, and coordinates its analysis with Northwest Power and Conservation Council methods and utility integrated resource planning. As integrated resource plans and assumptions are updated, Energy Trust savings targets may be refined.

A. Five-year electric efficiency goals

Over the coming five years, utility integrated resource plan analyses show the potential savings from energy efficiency. The plans reflect currently known and available technology and reflect Energy Trust's best judgment on the fastest way to acquire cost-effective energy efficiency. The following graphs show per-year and cumulative Energy Trust electric savings projections. The savings projections are considered a "stretch," reflecting a 73 percent increase in annual energy savings between 2008 and 2014. They do not attempt to anticipate fluctuating economic conditions or policies, such as the expiration of the Oregon Business Energy Tax Credit, or the effects of federal economic recovery programs. Actual savings could be below these projections in any given year, but we believe we can achieve the savings indicated over a multi-year period.

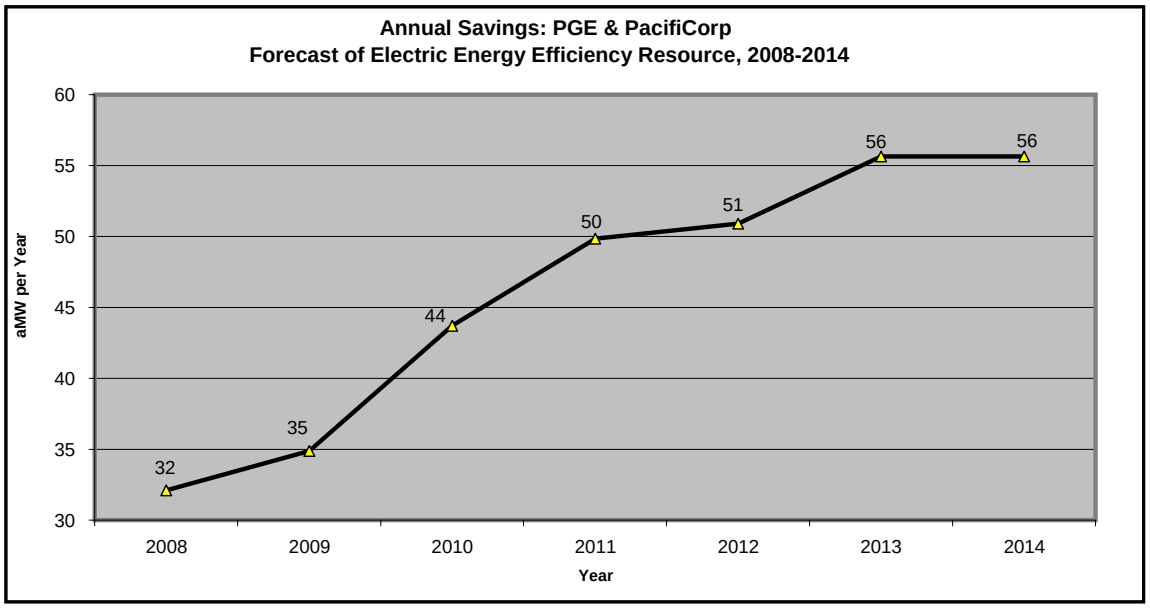


Figure 1

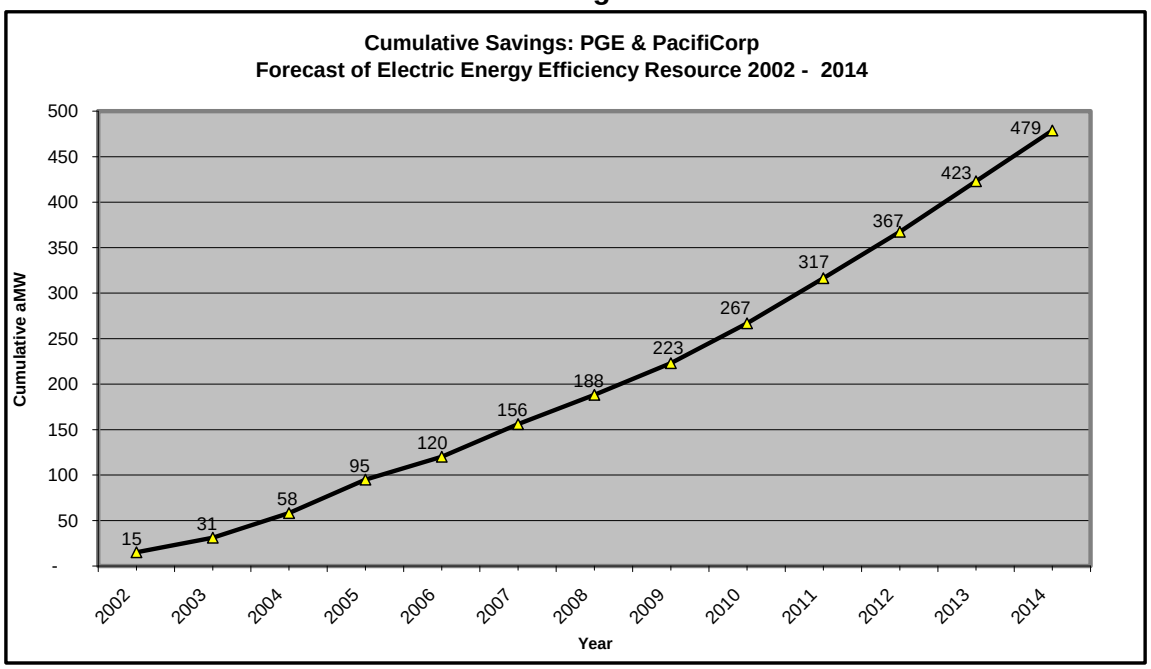
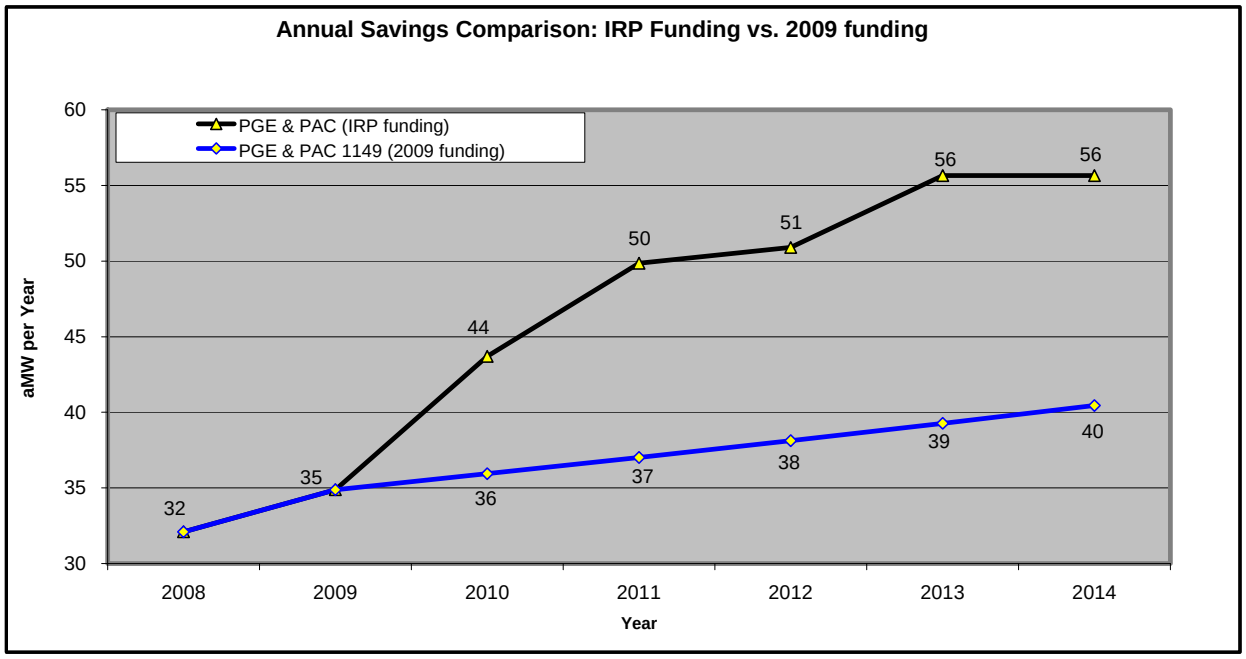


Figure 2

Benefits to utility systems and ratepayers: As noted above, funding to achieve these savings comes from utility rates, which will need to be re-evaluated periodically to ensure program funding is sufficient to capture the full benefit of the efficiency resources shown in the utility integrated resource plans. To illustrate the value represented by these increases, consider the following graph:



Note: This analysis assumes that annual savings would have grown at 3% a year absent the current agreement that funds ETO to IRP levels.

Figure 3

The graph's bottom line shows savings from electric efficiency programs if funding were held flat at 2009 levels. The top line shows savings consistent with integrated resource plan goals. The utilities propose to fund programs to achieve these higher levels in 2010 and 2011. This plan assumes that savings and funding will continue as shown in the graph through 2014. The value of this investment compared to flat 2009 levels is summarized in the following table:

Funding Scenario	Savings (aMW)	Total Benefits	Program Costs	Net Benefits
IRP funding (2010-14)	256	$1,560,194,487	$ 511,515,319	$1,048,679,168
Funding held constant, 3% annual growth (2010-14)	191	$1,163,890,488	$ 381,585,642	$782,304,846
Difference between funding/savings levels	**65**	**$396,303,999**	**$129,929,677**	**$266,374,322**

Figure 4

In other words:

- Energy savings: At full integrated resource plan levels, 256 aMW would be saved – 65 aMW more than the 191 aMW saved if 2009 funding levels were maintained.
- Ratepayer savings: At full integrated resource plan levels, ratepayers avoid paying about $1.56 billion for generation and power delivery; after deducting the cost of

efficiency programs, ratepayers save more than $1 billion. If funding remained at 2009 levels, ratepayers would miss out on more than $266 million of this benefit.

Effects on load growth, greenhouse gas goals and renewable energy requirements: The following graph compares the projected electric savings included in PGE and PacifiCorp's integrated resource plans to a range of Oregon loads, as forecast by the Northwest Power and Conservation Council. The load forecasts cover both investor-owned and consumer-owned utility territories, and are therefore broader than Energy Trust's funding utilities. Moreover, PGE projects load growth of 2.3 percent, which is even higher than the Council's high-growth projection. The Council projections are still helpful in illustrating the effects of efficiency savings on new load growth.

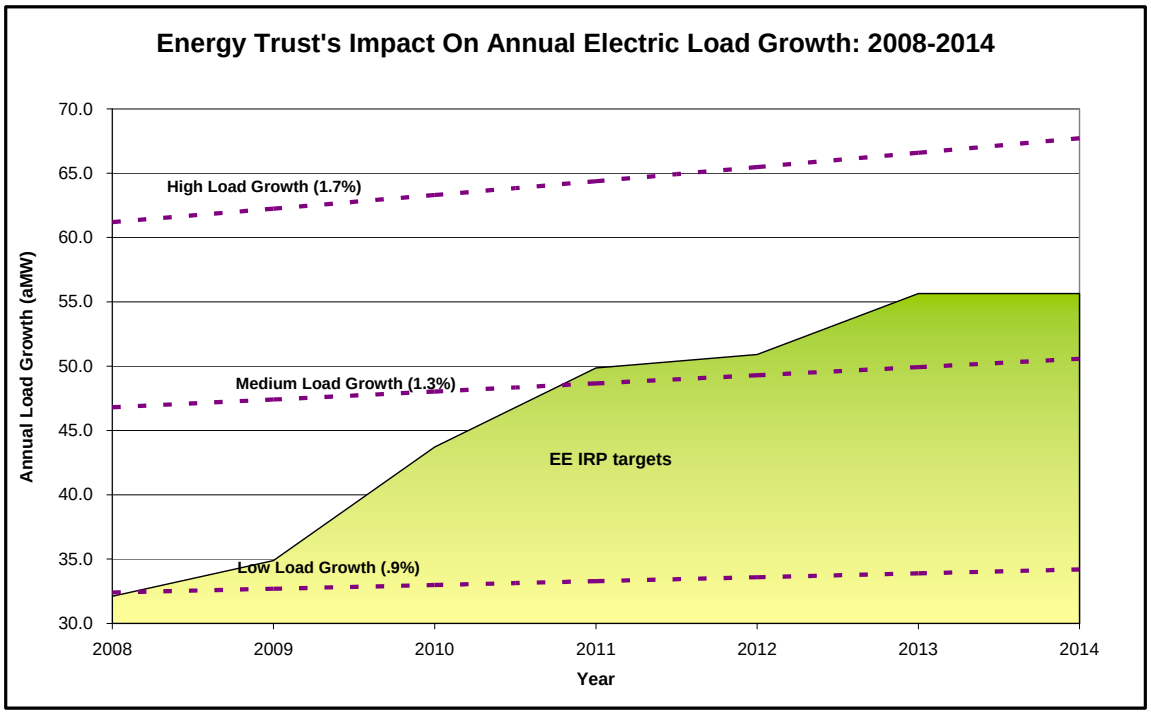


Figure 5

By achieving the savings targets established in the utility integrated resource plans, Energy Trust's efficiency programs would more than offset utility electric growth in all but the high-load-growth scenario.

Achieving the integrated resource plan targets would avoid about 2.5 million tons of CO_2 emissions that would otherwise occur (comparable to taking 430,000 cars off the road), avoid increasing fossil fuel use in most growth scenarios and reduce the investment needed to achieve renewable energy goals. A combined strategy, in which energy efficiency is accelerated at these levels and Oregon's renewable energy goals are met, would not just offset growth in fossil fuel energy use, it would reduce carbon emissions in absolute terms and contribute to Oregon's greenhouse gas reduction goals.

Projected savings by sector: Energy Trust expects to see the proportion of energy savings in industrial, commercial and residential sectors shift over time. Projections for the coming five years suggest that Energy Trust investments and savings are likely to expand faster in the industrial and commercial sectors, as residential retrofits approach market saturation. However, this trend, which is shown in the following table, would change if four promising technologies are proven reliable: ductless heat pumps, heat pump water heaters, low-power home electronics

and a behavioral approach to efficiency. Taken together, these technologies and approaches could more than double the residential efficiency resource. Energy Trust is working to accelerate the testing and commercialization of these and other new approaches.

Projected Electric Savings by Sector (aMW)							
Sector	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Residential	9.2	7.8	7.7	8.5	6.1	6.3	6.3
Commercial	7.4	10.9	16.2	18.2	20.0	20.0	20.0
Industiral	8.3	10.3	13.3	15.0	16.7	21.2	21.2
NEEA	7.3	5.9	6.4	8.1	8.1	8.1	8.1
TOTAL	32.1	34.9	43.7	49.9	50.9	55.7	55.7

Figure 6

Beyond five years: Although it is more difficult to predict costs and savings beyond 2014, the following graph describes a scenario for electric savings in the out-years:

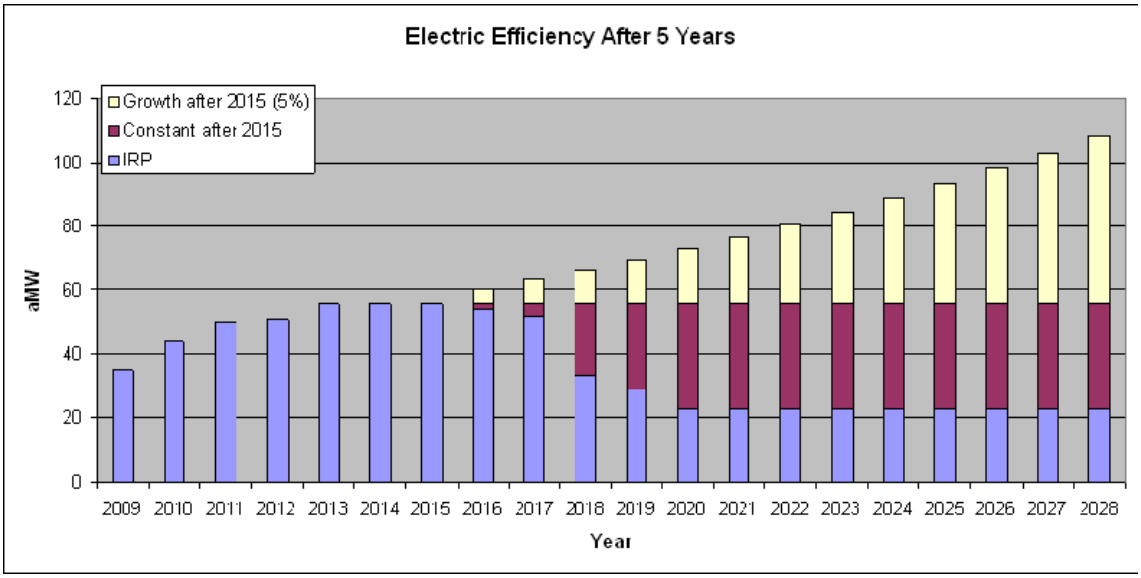


Figure 7

The graph shows Energy Trust program savings reaching a peak in 2013-2015. After 2015, PGE's integrated resource plan shows a gradual decline as savings attributable to known energy efficiency measures and technologies are fully deployed. In PacifiCorp's integrated resource plan, the decline begins after 2017. In 2016 and later, the light segment of the bars represents the gap that would have to be filled with new technologies and approaches to sustain the 2015 peak savings. The middle segment of the bars represents how much more would be needed if efficiency savings are to grow at a 5 percent annual rate. For comparison, the average projected 2009-2015 annual growth is 8 percent (48 percent total over six years). It would take less than eight percent growth to hold load growth steady under the Northwest Power and Conservation Council's medium-growth scenario. The Council's high-growth scenario would require more growth.

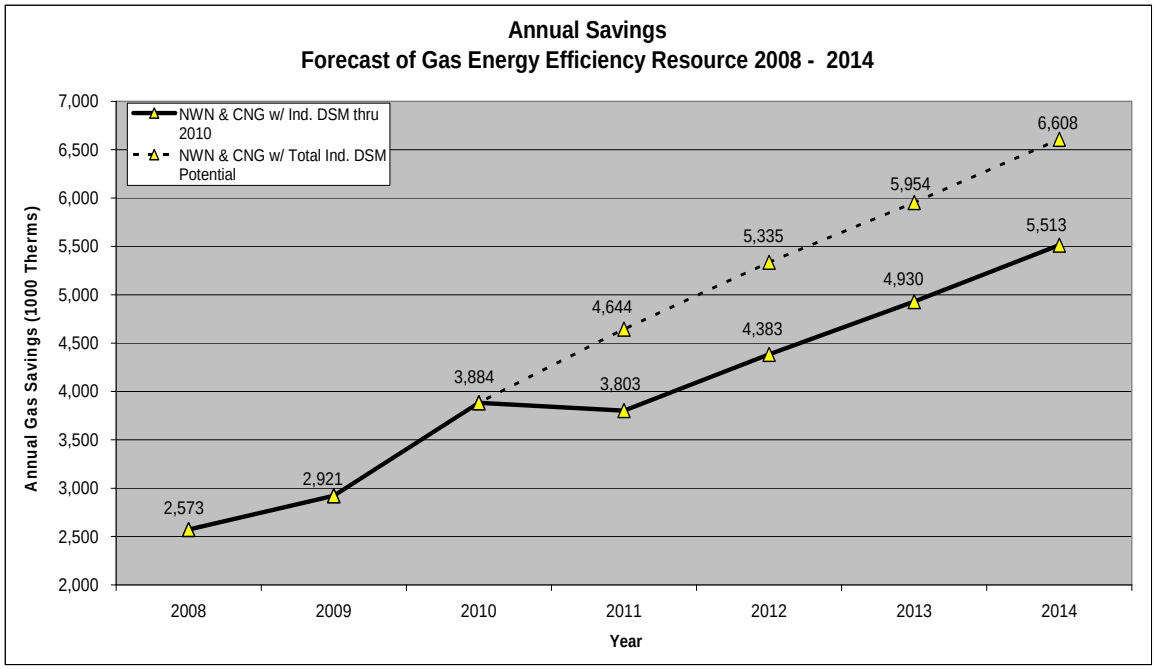
Under either scenario, the lesson of this graph is clear: it will take significant innovation in technology and approach to fill the gap in energy savings after the full deployment of known efficiency measures beyond 2015.

The graph is a projection, not a statement of fact, and whether it over- or under-states this gap is a matter of perspective. From a societal perspective, we have high confidence that there will

be additional savings from new technologies in the coming years.[4] As has been the case historically, measures being tested now will be validated, new measures will be discovered and efficiency resources will replenish. Greenhouse gas regulation and other factors that drive up the cost of generation can be expected to encourage more innovation in energy efficiency. While we do not know and cannot project how much or when this innovation will occur, experience suggests that aggressive efficiency programs tend to accelerate technology innovation and price declines. From an Energy Trust perspective, some of these new savings will come from tighter building codes and appliance standards, rather than Energy Trust programs. In either case, the scale of investment in efficiency programs may drive the level of innovation. How much efficiency Energy Trust is able to achieve may depend on whether we are willing to make investments with less certain and longer-term return.

B. Five-year gas efficiency goals

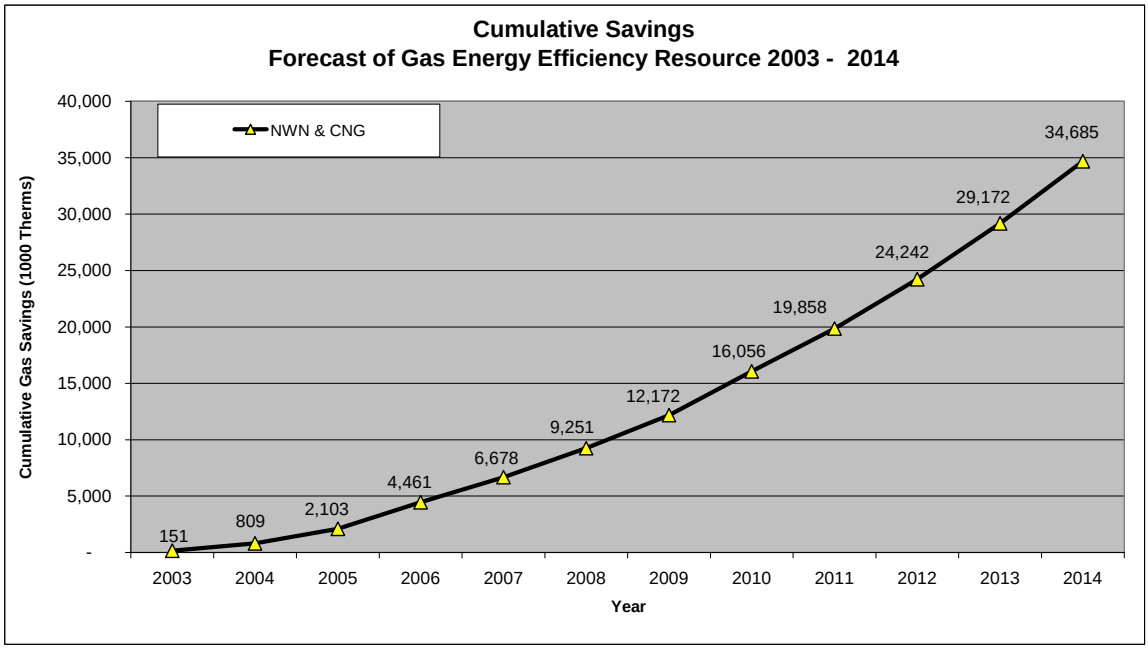
The following graphs show per-year and cumulative Energy Trust natural gas program savings given funding sufficient to attain integrated resource plan goals. Again, these are "stretch" goals. Achieving them will require a 114 percent increase in annual energy savings between 2008 and 2014.



Note: The industrial DSM pilot with NW Natural is a two-year agreement that ends after 2010. The dotted line shows the potential savings if that initiative is continued.

Figure 8

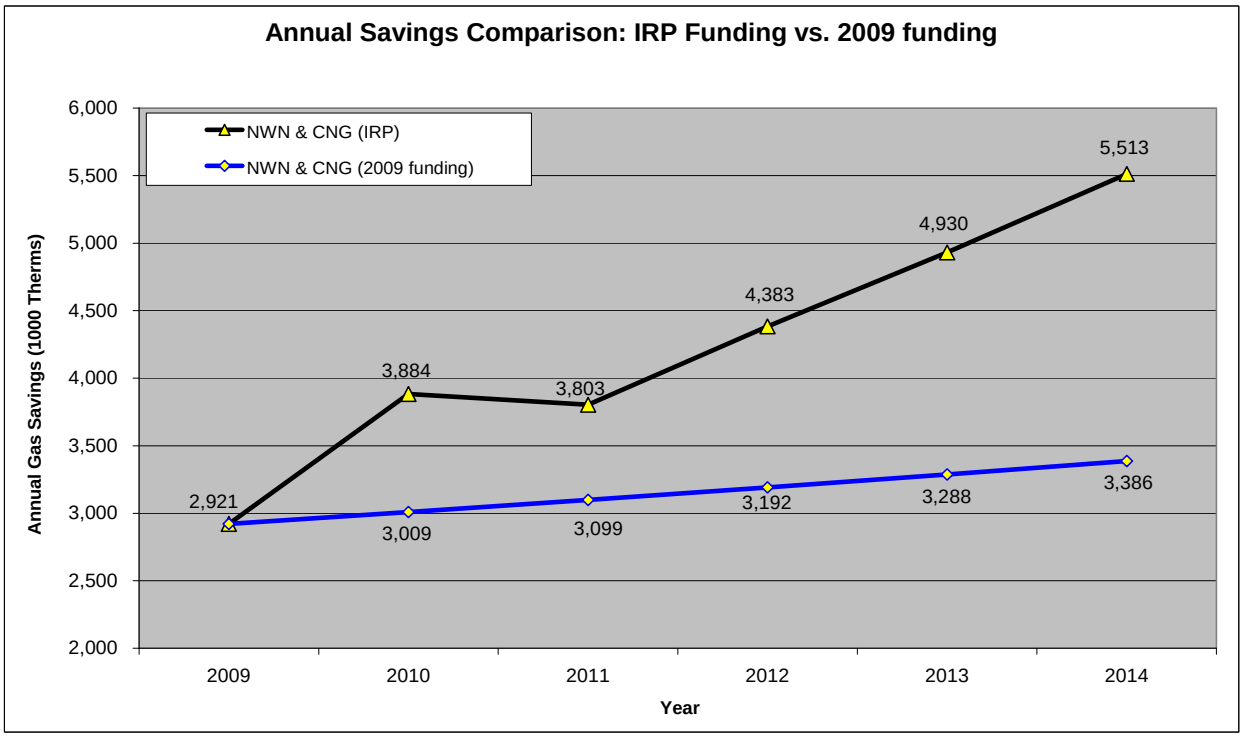
[4] E.g., ductless heat pumps, heat pump water heaters, efficient electronic equipment, advanced gas water heaters and condensing boilers for rooftop heating in commercial buildings.



Notes: 1. Avista contributed savings (about 23,000 therms) between 2006 and 2008.
2. In this graph, industrial DSM savings end after 2010.

Figure 9

Benefits to utility systems and ratepayers: As noted above, funding to achieve these savings comes from utility rates, which will need to be evaluated periodically to ensure program funding sufficient to capture the full benefit of the efficiency resources shown in the utility integrated resource plans. To illustrate the value represented by these increases, consider the following graph:



Note: This analysis assumes that annual savings would have grown at 3% a year absent the current agreement that funds ETO to IRP levels.

Figure 10

The graph's bottom line shows savings from gas efficiency programs if funding were held flat at 2009 levels. The top line shows savings consistent with integrated resource plan goals. The gas utilities have committed to fund programs to achieve these higher levels in 2010 and 2011. This plan assumes that savings and funding will continue to track these higher levels through 2014.

The value of this investment compared to flat 2009 levels is summarized in the following table:

Funding Scenario	Savings (Therms)	Total Benefits	Program Costs	Net Benefits
IRP funding (2010-14)	22,512,922.5	$218,823,344	$ 145,883,738	$ 72,939,606
Funding held constant, 3% annual growth (2010-14)	15,974,292.4	$155,268,517	$ 103,513,415	$ 51,755,102
Difference between funding/savings levels	**6,538,630**	**$63,554,827**	**$42,370,323**	**$21,184,504**

Figure 11

In other words:

- Energy savings: At full integrated resource plan levels, 22.5 million therms (2010-2014) would be saved, 6.5 million therms more than the 16 million therms that would be saved at 2009 levels.
- Ratepayer savings: At full integrated resource plan levels, ratepayers avoid paying about $219 million to purchase, store and deliver this amount of natural gas on the open market. After deducting the cost of achieving these efficiencies, ratepayers net around $73 million in savings. At 2009 levels, ratepayers would miss out on more than $21 million of this benefit.
- Effect on carbon: Achieving integrated resource plan efficiency goals avoids about 370,000 tons of CO_2 that would otherwise be emitted (comparable to taking 65,000 cars off the road).

Effects on load growth: The effect of these higher savings on total gas demand is expected to be more modest in percentage terms than for electric savings, however. This is because there is a smaller range of known efficiency options for large gas users, and most new furnaces are already efficient (in part due to Energy Trust efforts). Energy Trust is working with manufacturers to develop better efficiency options for residential water heat and commercial rooftop heating, which are Oregon's second and third largest end uses of gas after home heat.

Washington: As of October 1, 2009, Energy Trust began offering gas efficiency programs for existing homes and buildings that buy gas from NW Natural in Washington State. This initial offering is limited to existing structures because of current economic conditions, especially the fall-off of the new construction market. If these conditions change, additional programs may be offered. After the first year of these programs, NW Natural, Energy Trust and the Washington Utilities and Transportation Commission will determine whether or not to continue them.

Projected gas savings by sector: We expect that more than half of all natural gas savings will continue to come from home efficiency. Industrial gas savings indicated below are only for non-transport customers because Energy Trust serves only those customers under current agreements. Industrial savings are shown growing in 2009 and 2010 and then falling off because the current gas industrial program is only a pilot program. If that program succeeds, we would expect savings in 2011-2014 above those indicated here:

Projected Gas Savings by Sector (1,000 Therms)							
Sector	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Res	1,353	1,484	1,658	1,955	2,256	2,553	2,859
Comm	1,207	1,235	1,629	1,813	2,088	2,334	2,603
Ind	13	202	596	35	39	43	51
TOTAL	**2,573**	**2,921**	**3,884**	**3,803**	**4,383**	**4,930**	**5,514**

Figure 12

Goal 2: Renewable Energy

Energy Trust's goal is to accelerate the rate at which renewable energy resources are acquired, helping to achieve Oregon's 2025 goal of meeting at least eight percent of retail electrical load from small-scale renewable energy projects.

Since 2002, Energy Trust renewable programs have helped develop 98 average megawatts of electricity using a variety of technologies, primarily utility-scale wind. Since 2008, Energy Trust's renewable energy programs have been limited by the 2007 Oregon Renewable Energy Act to projects of 20 megawatts or less. Unlike electric efficiency, the 2007 Act provided no additional sources of funds for Energy Trust renewable energy programs. Thus, the graph below assumes funding at current levels, current programs and modest increments of new generation. Given these assumptions, Energy Trust estimates that it can acquire another 23 aMW of renewable energy between 2010 and 2014, for a cumulative total of 124 aMW.

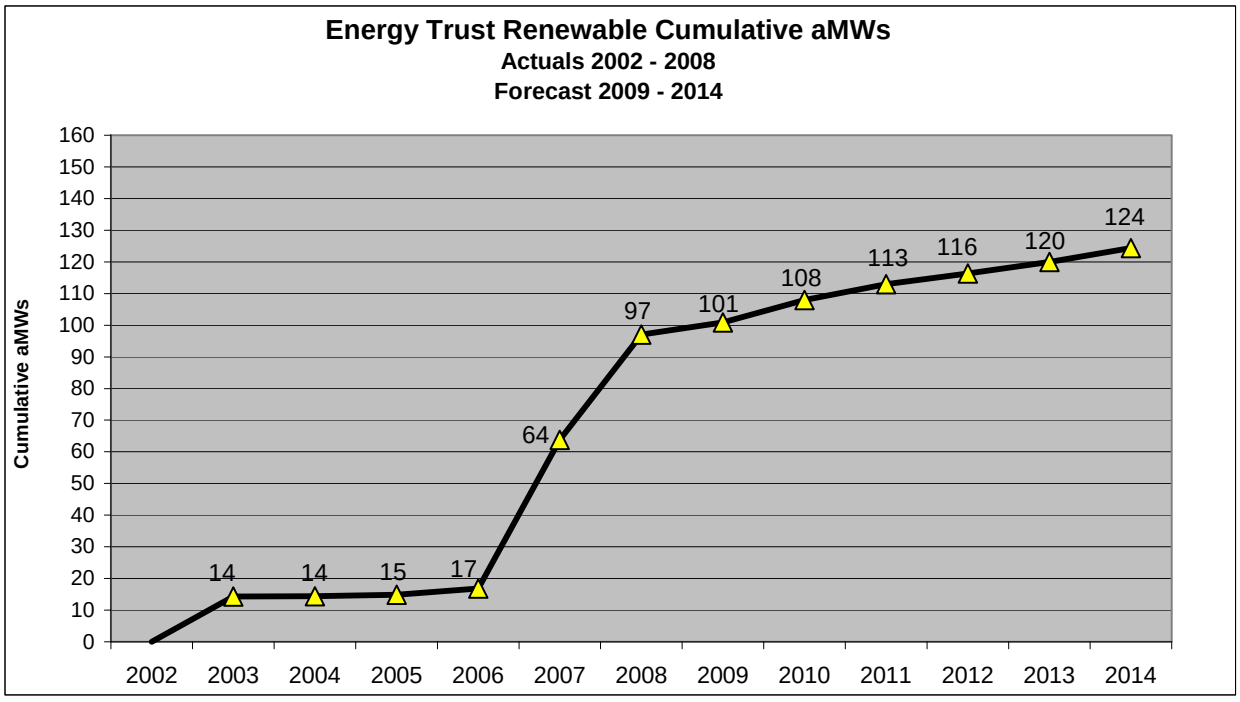


Figure 13

External factors are likely to affect Energy Trust's renewable energy strategy going forward. For example: the Oregon Department of Energy Business Energy Tax Credit is currently set to expire in 2012, which could have a significant impact on Energy Trust incentives; 2009 legislation requiring utilities to adopt feed-in tariffs for solar installations could require Energy Trust to change its solar strategy; and evolving portfolio standards and certification criteria for renewable energy credits in bordering states could affect Energy Trust's role in Oregon projects.

As these developments unfold, Energy Trust plans to build on the strengths it developed working with small- and medium-scale project owners over the last seven years by:

- Maintaining a presence in a range of market segments, including hydro, solar, geothermal, biopower and wind
- Providing earlier and additional assistance to project developers
- Using Energy Trust incentives to leverage additional financial resources for projects
- Teaming with utilities to reduce barriers to development
- Maintaining flexibility to shift resources to capitalize on market opportunities

Five-Year Activities

This following section outlines in non-quantitative terms the activities Energy Trust expects to undertake over the coming five years. In future two-year action plans and annual budgets, Energy Trust will establish quantitative objectives consistent with this plan and then-current utility funding projections.

1. ***Accelerate*** energy efficiency investments.

a. Acquire ***more standard efficiency measures*** through retrofit and new residential and commercial building and facility programs:
   - Simultaneously expand efforts in multiple markets, for example:
     - Accelerating weatherization and related measures in existing homes
     - Accelerating lighting efficiency in new and existing small commercial buildings
     - Raising incentives in carefully-targeted markets
     - Leveraging emerging federal, state and local government stimulus and other clean energy initiatives
   - Diversifying programs and strategies to attract new and different customers and persuade customers to do more, for example:
     - Piloting approaches that provide more comprehensive customer information, technical assistance, coordination and/or incentives, including markets that have been underserved

b. Acquire more efficiency savings through ***supply chains*** for equipment and services (e.g., distributors, designers and contractors) for equipment and services that are generally sold directly to customers at the time of purchase, by:
   - Working with additional customer associations, chains and individual customers as part of a significant, multi-year effort to develop such supplies and relationships
   - Working with regional or national entities, e.g., electronics sold business-to-business, hospital equipment, specialized industrial production equipment and advanced design in national chains
   - Developing tools to reach developers and contractors engaged in the design-build market for new buildings
   - Increasing the number of residential weatherization trade allies in smaller communities

c. Acquire efficiency through ***behavioral and operational measures***
   Energy Trust is currently exploring home energy feedback tools (home energy monitors, mailings to homeowners showing comparative energy use, energy use summaries for building operators), smart power strips, tune-up of commercial rooftop systems and other approaches and will continue this work. In addition, Energy Trust will:

- Explore opportunities to accelerate behavioral research and technology through field testing, refining or reinventing program systems, working in coordination with demand management, utility AMI metering and regional efforts
- Develop metrics to guide and manage behavioral pilots and measure development
- Work with utilities to help delay growth in, or reduce, fossil fuel peak energy use using renewable energy and demand response, load management and storage technologies, as these resources become cost-effective over the next 3-5 years

d. ***Increase comprehensiveness***: Install more energy measures per customer served. Energy Trust is already working with the City of Portland on the Clean Energy Works Portland pilot to test mechanisms for deep home retrofit, which is seeking federal funds to advance building science and program strategies to go even deeper. Energy Trust has also begun a commercial pilot program for new buildings that are 50 percent more efficient than code, and at least 60 percent counting renewable energy generation. In addition, Energy Trust will:
   - Expand efforts to overcome limitations in some aspects of vendor-driven programs
   - Develop tools and business cases for vendors to sell technologies and design approaches with deeper savings
   - Work directly with larger and more sophisticated customers
   - Develop templates to simplify and standardize approaches to deeply-efficient design
   - Integrate efficiency and renewable energy opportunities for customers in holistic approaches to energy and resource management

e. ***Link to larger-scale initiatives***, including regional/interstate collaborations, codes, standards and interactions with clean energy markets: Energy Trust currently works extensively with other energy and carbon-related initiatives, and investigates links to grid, land, water, and waste and transportation management in limited ways. Going forward, Energy Trust will:
   - Explore ways to integrate efficiency into initiatives such as utility demand reduction programs, smart growth, resource recovery/conservation, transportation and land use planning
   - Monitor trends in government policy and industry investment to anticipate and build on developments that further energy saving and renewable energy
   - Engage green workforce initiatives to invest in and ensure availability of well-trained, educated and competent trade allies to deliver energy benefits
   - Leverage relationships with organizations with related missions
   - Expand relationships with trade and labor groups

2. ***Maintain support for a variety of renewable energy technologies*****:**
   - Explore ideas for reducing barriers for qualifying facility development
   - Shift resources to capitalize on market opportunities

3. ***Encourage innovative technologies*** and practices that create significant, additional and diversified renewable energy and efficiency opportunities. Energy Trust expects to see a vast array of new technologies for heating, cooling, lighting, water heating, electronic equipment and user management of facilities. Some will have predictable performance based on standard equipment ratings, but many employ new strategies to save energy, and will need to be tested in a real-world environment. Investing in developing these technologies is crucial to moving beyond current energy efficiency resource projections, which are based on known technologies.

Energy Trust is already exploring a number of new technologies: LED lighting, advanced home water heaters, ductless heat pumps, and improved controls and heating systems for commercial

rooftop heating and cooling equipment. Energy Trust works with designers in the Path to Net Zero pilot, aiming for buildings that use 50 percent less energy than required by code, and 60 percent less overall by incorporating renewable generation. Energy Trust also works with national programs to promote efficient technology availability and common technical specifications, and with local and government entities to create community-based efficiency initiatives.

However, there are still major gaps in product performance and availability. The technical performance of many new products needs to be better understood and in some cases improved. In other cases (e.g., home and building operation aids), field testing is needed to identify the best approaches. While Energy Trust does not plan to be engaged in early product development, we will:

- Increase funding for Northwest Energy Efficiency Alliance (NEEA) electric market transformation programs, and encourage NEEA to take on a similar role for natural gas
- Help field-test and verify equipment and operational approaches, help manufacturers perfect systems, and demonstrate and commercialize promising systems
- Leverage the work of other organizations such as the American Council for an Energy Efficient Economy, the Consortium for Energy Efficiency, the U.S. Department of Energy, the U.S. Environmental Protection Agency, national laboratories and others

Energy Trust will act on its own only for high-priority projects others are not taking on, and for small, simple projects where broader coordination is not necessary or warranted.

To guide these activities, Energy Trust will develop metrics and manage technology development, and criteria to use in deciding where to focus Energy Trust efforts. Criteria could include whether a given technology is likely to: significantly reduce energy load growth, commercialize a promising renewable technology such as low-temperature geothermal or farm biomass, bring products to Oregon markets in the near term, not be developed or demonstrated without Energy Trust involvement, produce measureable savings, be critical for a key initiative (e.g., net-zero commercial buildings) or balance intermittent renewable generation with load.

4. ***Support industry and business infrastructure*** that delivers energy efficiency and renewable energy products and services to contribute to a strong economy***.***

- Support clean energy business infrastructure development:
  - Cultivate and support more than 1,200 trade allies as a sales and delivery force
  - Recognize and reward trade allies for the quality and quantity of work performed
  - Invest in trade ally training and development, leveraging federal and other training funds where possible
- Help businesses integrate efficiency and renewable energy profitably into their business plans so that management is well-structured and the profits are clear
- Provide responsive services to a wide array of businesses with different energy needs
- Work with businesses to identify efficiency investments with deeper energy benefits and longer paybacks (e.g., Path to Net Zero pilot for new buildings), and at the same time help businesses and homeowners who prefer to accelerate their efficiency investment incrementally

5. ***Provide excellent customer service*** to Energy Trust program participants to maximize energy savings and renewable energy benefits**.** Energy Trust is in the process of implementing

a number of administrative and organizational changes intended to enhance our focus on customers. Going forward, Energy Trust will seek to:

- Better understand how different customers make decisions, and what barriers, if removed, would lead to greater participation
- Use different messages to motivate different energy users and developers to generate small-project renewable power and cost-effectively conserve energy:
  - Understand consumer behavior and response through market research and intelligence
  - Test and develop new messages focused on the connection between energy and sustainability
- Provide renewable energy project assistance early in the project cycle:
  - Address barriers to successful project completion by providing educational, technical and financial resources
  - Build a network of project development technical assistance services to help customers navigate interconnection, power purchase agreements, permitting, financing and resource assessment
- Pursue innovation in program delivery:
  - Simplify participation in Energy Trust programs
  - Move to automated, online forms
  - Offer appropriate financing tools, including those that allow owners to invest in a range of clean energy improvements
  - Help interested participants access and participate in a fuller spectrum of energy and resource efficiency, renewable and, in coordination with utilities, demand management options
  - Build long-term relationships with participants, organizations with linked missions, and pivotal equipment and services supply organizations
  - Fully integrate efficiency and renewable energy program delivery
  - Leverage joint utility marketing and channels to better reach customers and generate greater awareness and project leads
  - Identify geographic locations with significant renewable energy potential and connect with resource owners
- Improve contractor support and training

6. ***Bring a broad perspective*** to two-year action plans and annual budgets by considering their overall balance and equity. In addition to individual programs and initiatives, Energy Trust will view its investment of ratepayer funds from a portfolio perspective by considering how well budgets and action plans address the following:

- Long-term and short-term perspectives: Do they include an appropriate mix of initiatives and measures with near-term (1-3 years) and longer-term benefits? Investment in new technologies and innovative pilot initiatives like the Path to Net Zero pilot and the Positive Energy/OPOWER behavioral pilot will take years to generate large quantities of energy savings, and while some will pay off, some will not. Yet these investments provide the “next generation” of energy efficiency, energy conservation and renewable energy development. It is vital that Energy Trust’s portfolio puts due weight on these forward-looking investments.
- Sector and geographic diversity: Will all customer sectors that contribute funding to Energy Trust have equitable opportunities to participate in programs? Is there sufficient emphasis on geographic diversity and customers whose participation previously was more limited? Energy Trust already explores ways to cost-effectively reach more rural consumers, moderate-income households and small businesses. Continuing to invest in these efforts is an important way to demonstrate the value of

energy efficiency and renewable energy state-wide, and that ratepayer funds are managed equitably.

- Reach upstream: Is there appropriate emphasis on reaching upstream to manufacturers and supply chains? For example, Energy Trust works with the Northwest Energy Efficiency Alliance to coordinate nationally to promote efficient electronic devices, such as televisions and computers. Similar efforts may be appropriate for efficient new manufactured homes, refurbishing vending machines, and influencing design choices and equipment selections of national chain stores. Keeping a place for these upstream initiatives in Energy Trust's portfolio will complement programs with more immediate focus.

7. *Communicate the value of energy savings and renewable energy generation*

- Develop a communications strategy to reach utilities, customers/ratepayers, decision-makers and other stakeholders and constituents about the benefits of and opportunities for energy savings and renewable energy
- Quantify and report in easily understood language the economic, environmental and other benefits of and opportunities for energy savings and renewable energy
- Leverage relationships with other organizations to reach a broader range of audiences

8. *Maintain an efficient, effective and transparent organization* that responsibly invests ratepayer funds. Energy Trust has always strived to develop and maintain open, credible decision-making processes and accountability and reporting systems. While these efforts require significant attention and investment, they play a vital role in establishing the value of energy efficiency and renewable energy investments and their reliability in meeting legislative and policy goals. Going forward, Energy Trust will continue to expand these efforts by:

- Regularly evaluating and refining Energy Trust's efficiency and effectiveness compared to relevant energy and non-energy businesses
- Continuing to foster transparency through open meetings, advisory councils, reports and other publications, and other means
- Demonstrating a high standard of organizational ethics
- Periodically assessing organizational strengths, weaknesses, opportunities and threats
- When considering expansion opportunities, using Energy Trust's core mission and competencies, and its ability to maintain transparency and accountability, as touchstones.

Jeff Harris Biography

June 7, 2013

Jeff Harris is Director of Technology and Market Strategy for the Northwest Energy Efficiency Alliance (NEEA), where he manages NEEA's efforts to build a "pipeline" of commercially available energy efficiency technologies for the region. For more than 25 years, Jeff has been at the forefront of the Northwest's energy efficiency work.

Jeff began his career working on energy efficiency R&D projects for Bonneville Power Administration (BPA) where he helped launch BPA's new residential construction program and corresponding energy codes effort. After joining the Northwest Power and Conservation Council (NWPCC) in 1989, Jeff contributed to the Third and Fourth Power Plans for the region, and significantly influenced the creation and adoption of more simplified and stringent energy codes across Northwest. While "on loan" from NWPCC, he helped NEEA get off the ground in 1996, and then joined NEEA as a full-time staff member in 2001, managing NEEA's new product development group. While at NEEA, Jeff has also played a key role in developing its commercial, residential and industrial sector market transformation strategies and evaluation methods. Over the span of his career, Jeff has also been a leading advocate for building operation efficiency and commissioning, helping found the Northwest Building Commissioning Collaborative, an organization that was a forerunner to the now named International Building Commissioning Association. Jeff also helped found and is on the Board of Directors of the New Buildings Institute (NBI), a non-profit organization which supports emerging technologies and improved codes and standards for commercial buildings. Jeff holds a Bachelors of Science in Electrical Engineering and a Master of Science in Mechanical Engineering from Oklahoma State University.

In his spare time, Jeff enjoys hiking and camping in the Pacific Northwest. Jeff is also an avid supporter of bike commuting and rides his bike to work rain or shine.

Contractor Panelist Biographies (in alphabetical order)

June 7, 2013

Jeremy Anderson is Executive Director of Weatherization Industries Save Energy (WISE), a trade association of weatherization and HVAC contractors, manufacturers, and distributors. It is dedicated to promoting energy conservation through the services of its members, keeping conservation measures affordable, and providing policy-makers with the experience-based knowledge of business owners.

Robert Hamerly is founder of GreenSavers USA. In early 2007 he saw there was a lack of specialists in Central Oregon offering residents the complete package of energy efficiency testing and energy upgrades and knew this was the right place for him to focus his diverse talents. Robert has extensive experience in the building trades, from HVAC installations on Nantuckett to building timber framed custom homes throughout the Pacific Northwest. Robert is Vice President of the Board of Directors for the Home Performance Contractors Guild of Oregon. His key initiatives include ensuring the Home Performance industry will flourish as a self-sustaining industry for decades to come. In addition, he works hard to make sure Home Performance contractors business needs and goals are well represented and supported at the State, Local and Federal level. Robert's commitment to this industry is evident in that he has attended every national and western states ACI conference since 2008, often being the only Oregon firm in attendance.

He is certified by Building Performance Institute to upgrade homes as well as assess the heating and cooling systems in the home. Robert is certified through ENERGY STAR® to certify newly constructed homes. Robert is PTCS Duct Sealing Certified, a Level 1 Thermographer and an EPA Certified Renovator.

Robert is an avid skier, mountain biker and lover of the outdoors. He has a passion for living sustainably and starting environmentally minded businesses. Before founding GreenSavers in 2007, he operated a 19-acre green waste recycling plant, Shoreline Organics in Ventura County.

Tom Kelly is the president of Neil Kelly Company, founded by his father in 1947. The company employs 160 people with locations in Portland, Lake Oswego, Eugene, Bend, and Seattle. Neil Kelly Company is proud to have developed and to occupy the first LEED certified building in the western US (the company's Lake Oswego design center), and to have built the first LEED certified home in the west. Neil Kelly Cabinets is the first supplier to offer a DECLARE labeled collection – spotlighting sustainably sourced materials. The company's Home Performance – energy efficiency division – is growing rapidly. Neil Kelly's work kept 1000 metric tons of carbon out of the atmosphere in 2012 and carbon savings will continue on those homes into the future. An even greater number of homes are forecast to see this kind of improvement in each of the coming years. Neil Kelly's Home Performance Division was recently profiled in a national Department of Energy bulletin.

Tom's current community activities include:

- Co-convener of Oregon Solutions / Vernonia Schools
- Co-convener of Oregon Solutions Juniper Utilization task force
- Board member of Oregon Solutions

- Chair of Habitat for Humanity Metro East Advisory Group
- Member of the Children's Museum Advisory Group
- Board member of Sustainable NW Wood
- Member of Climate Action Plan Update Steering Committee (City of Portland / Multnomah County)

Tom is a past President of the Portland Metropolitan Home Builders Association, immediate past Chairman of the Board for Portland Meals on Wheels, a past President of Portland Downtown Rotary, a past president of the Volunteers of America of Oregon Board, and a past Chair of the Oregon Construction Contractors Board. He was the founding Chair of the Oregon Business Association.

Tom was recognized with the Volunteers of America of Oregon DePriest Award for Community Service Excellence in 2010; and received the national remodeling industry Fred Case Award for Entrepreneur of the Year in 2011 -- made especially meaningful as Fred Case and Tom's father, Neil, were friends.

Don MacOdrum In his role as Executive Director of the Home Performance Guild of Oregon, Don MacOdrum advocates for contractors and industry stakeholders, and enhances their engagement with Energy Trust of Oregon and Clean Energy Works Oregon Home Performance with ENERGY STAR programs. Don works tirelessly to uncover and exploit synergies between contractors, remodelers, builders, distributors, manufacturers, trainers, programs, energy non-profits, governments, legislators, bankers, realtors and homeowners to build an industry that helps all Oregonians have access to whole-house retrofits. Prior to joining the Guild, while studying toward a certificate in building science at the University of Toronto, Don conceived of and oversaw the design and construction of a building science and sustainability education center in Southern Ontario, Canada.

Timeline for 2015-2020 Energy Trust Strategic Plan

2014	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Preliminary work		***Develop Draft Plan***				***Consult***		***Revise and adopt***			
Strategic planning committee	Identify issues and planning approach (process to be determined)		• Iterative staff analysis and committee discussion • Develop draft plan				• Consult with OPUC on cost-effectiveness implications • Consult with interested parties on draft plan (with revisions suggested at retreat)		• Review & respond to comment • Draft final plan			
Staff												
Board			Input on issues and planning approach		Input on issue analysis	Board retreat: agree on draft plan		Update on consultations		**Adopt final plan**		
Other public, stakeholder engagement	Consult with CAC, RAC, strategic utility roundtable				Consult with CAC, RAC		Consult with CAC, RAC, strategic utility roundtable					
Budget							Staff develop budget themes		Staff draft budget	Board input on draft budget	Consult with CAC, RAC, utilities	**Board adopt final budget, action plan**