Board Decision
2009 Strategic Plan

December 18, 2009

Summary

Adopt the 2009 strategic plan, Attachment 1, and authorize staff to release the summary and responses to comment, Attachment 2.

Background

- Energy Trust currently has a 2007-2012 strategic plan, which was updated in 2006.
- When the plan and 2006 update were developed, the public purpose charge was still scheduled to sunset in 2012, there was no provision for supplemental energy efficiency funding, and no limit on the size of Energy Trust renewable energy projects.
- All of these things changed with the adoption of the 2007 Oregon Renewable Energy Act: the sunset date of the public purpose charge was extended to 2026, utilities were authorized to collect supplemental energy efficiency funding, and renewable energy funds were limited to 20 megawatts.
- In June, 2008, the board began discussing elements of a revised strategic plan in light of these changes. The June 2008 discussion focused on vision, mission long-term goals and a conceptual structure for a revised plan.
- After several workshops in late 2008 and early 2009, a fuller plan with five-year goals and activities was drafted. This draft was discussed at the June 2009, board retreat, revised and released for comment August 1.
- Comments on the plan were received through November. The strategic planning committee and the staff have reviewed the comments, summarized in Attachment 2 with draft responses.

Discussion

- The proposed plan includes changes that would respond to significant issues raised by commentors. We include a red-lined draft as Attachment 3. Here are the major issues reflected in the revisions:
- **Five-year funding assumptions**: Funding was a key variable in the draft plan. The plan asked commentors whether the plan should assume full funding to achieve integrated resource plan (IRP) goals through 2014, given that funding depends on future rate filings. The plan plotted costs and savings associated with a range of funding scenarios.
- Since the draft plan was released, the OPUC has made clear that efficiency programs should be funded to achieve IRP goals. The Commission has already approved higher funding levels for NW Natural and the electric utilities appear to be headed in the same direction. While these filings establish rates for two years, not the full five years addressed in this strategic plan, OPUC staff told the strategic planning committee that it is appropriate for the plan to assume full funding through 2014. In their comments, the

utilities would like to talk about future funding – how it is analyzed and allocated – but did not suggest that anything less than full funding would be provided.

- Based on this feedback, the proposed plan assumes full IRP funding and references lower funding scenarios in narrative, to underscore the value of funding to full IRP levels. This led to extensive revisions of the draft plan.
- **Industrial program funding**: Over the coming five years, we expect to see a trend toward more commercial and industrial efficiency potential, and comparatively less residential savings. However, a significant portion of industrial program growth is likely to come from sites that use more than 1 MW, which cannot be funded under SB 838. it is unclear whether all of the energy savings shown in the plan (see p. 7, Figures 1 and 2) can be achieved, or whether the same goals can be achieved with increased energy savings for smaller customers.
- **Renewable energy generally**: Based on initial comments from the OPUC, the renewable energy elements of the plan are substantially fleshed-out. With one exception, this represents a clarification of the draft plan, not a substantive shift. The strategy was and remains to: (a) Maintain flexibility to support a variety of technologies; (b) provide more support to projects, earlier; and (c) help projects leverage other funding.
- **Renewable energy and the utilities**: An element of the renewable energy strategy is still in flux, namely the relationship between Energy Trust and the electric utilities in renewable energy. In the past, Energy Trust collaborated closely with utilities on renewable projects, and transferred green tags to the utilities for the benefit of ratepayers.
- The utilities, the OPUC and Energy Trust are still discussing whether Energy Trust projects can be used to help utilities meet their renewable portfolio standard requirements.
- The plan is written to avoid coming to any explicit conclusion about this issue. However, if Energy Trust does not support projects that meet renewable portfolio requirements, it could have an effect on how much generation Energy Trust can acquire.
- **Renewable energy, BETC and the pilot feed-in tariff**: Two other developments – changes in the Business Energy Tax Credit and a pilot tariff that would require utilities to subsidize solar PV projects – could impact Energy Trust's renewable energy program by significantly increasing projects' above-market costs. These developments will not be concluded for a few months. We have drafted the strategic plan so it does not assume any particular outcomes from these processes.
- **Relationship with utilities**: Utilities proposed closer utility involvement in strategy. We propose to respond by recounting the board's strategic utility roundtable proposal. Regarding the comments suggesting the need for better collaboration in the SB 838 funding process, we would agree. We intend to put a high priority on improving that process in 2010.
- **Analytical changes**: We made a number of analytical changes in the plan:
    - We analyzed how savings over the five years look in each sector, for electric and gas (see Attachment 1, pp. 9 and 11). On the electric side, whether these shifts among sectors actually occur depends on whether we find new technologies and approaches that allow deeper penetration in the residential sector.

- We updated all of the numbers in the graphs and analyses starting on p. 7. We changed the period of analysis from 2009-2013 to 2010-2014, given that 2009 is almost over.
- In response to OPUC comments, we added detail and examples to the "Five-Year Activities" section. We especially fleshed out the "Encourage innovative technologies" section to clarify those activities. We also re-ordered the activities.
- We elaborated the section on savings beyond five years. The bottom-line message of this section is that maintaining the energy efficiency savings levels we project in 2014, which would likely fully offset load growth, will require significant innovation – new technologies, behavioral measures, market transformation, etc.

Recommendation

Adopt the attached strategic plan (*with changes made at today's meeting*) and authorize staff to release the attached summary and responses to comment, by approving resolution number 537.

RESOLUTION 537

ADOPTING STRATEGIC PLAN

WHEREAS:

1. Energy Trust has a 2007-2012 strategic plan, updated in 2006. In 2006, the public purpose charge was still scheduled to sunset in 2012, there was no provision for supplemental energy efficiency funding, and no limit on the size of Energy Trust renewable energy projects.

2. The 2007 Oregon Renewable Energy Act extended the sunset date of the public purpose charge to 2026, authorized utilities to collect supplemental energy efficiency funding, and imposed a 20-megawatt limit on Energy Trust renewable energy projects.

3. Elements of a revised strategic plan have been under discussion since June, 2008, when the board discussed Energy Trust vision, mission and goals.

4. A draft plan with five-year goals was discussed at the June, 2009 board retreat, revised to reflect that discussion, and released for comment August 1.

It is therefore **RESOLVED** that the board of directors of Energy Trust of Oregon, Inc., adopts the attached strategic plan and authorizes staff to release the attached summary and responses to comment (*with changes made at today's meeting*).

Moved by: Seconded by:

Vote: In favor: Abstained:

Opposed: [list name(s) and, if requested, reason for "no" vote]

ATTACHMENT 1

2009 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 its 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 to that level, 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 current law 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.

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 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.

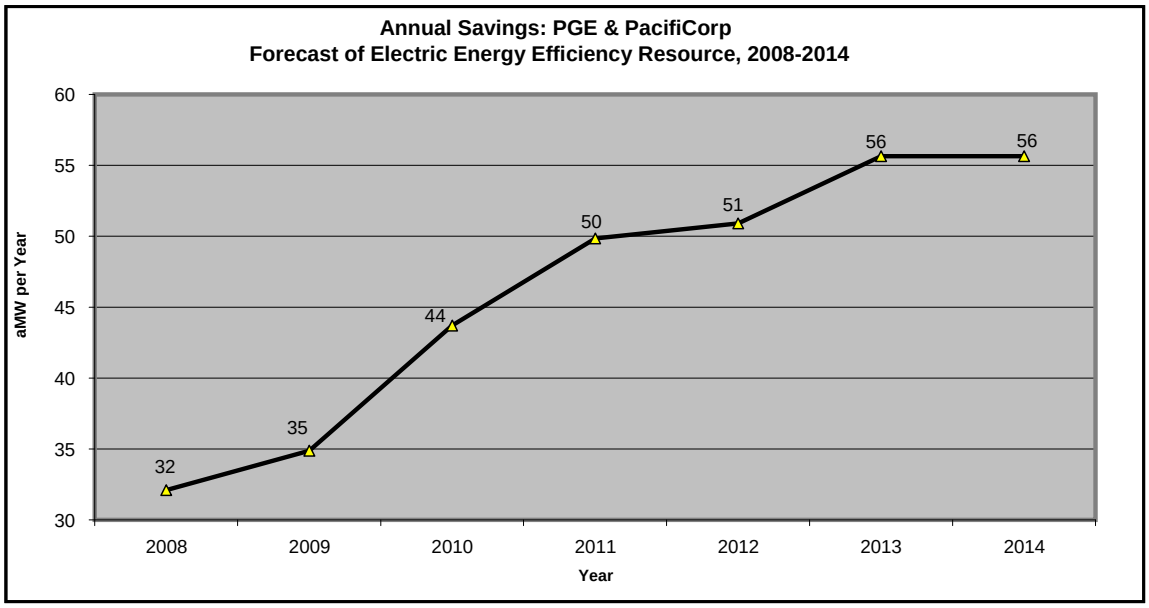


Figure 1

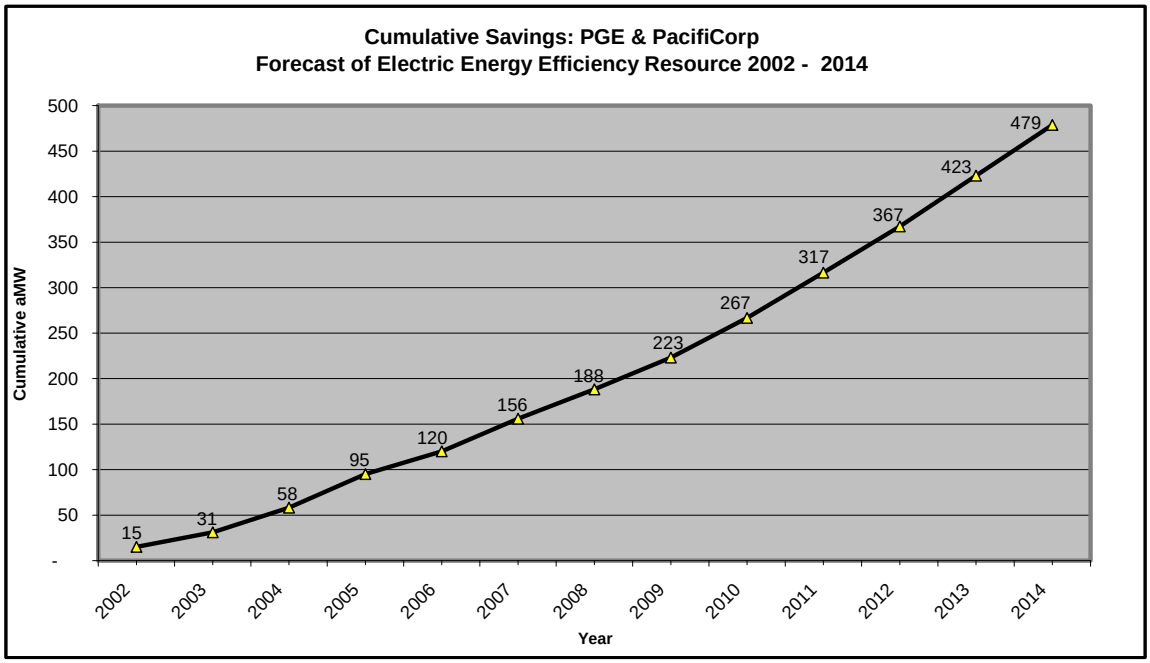


Figure 2

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:

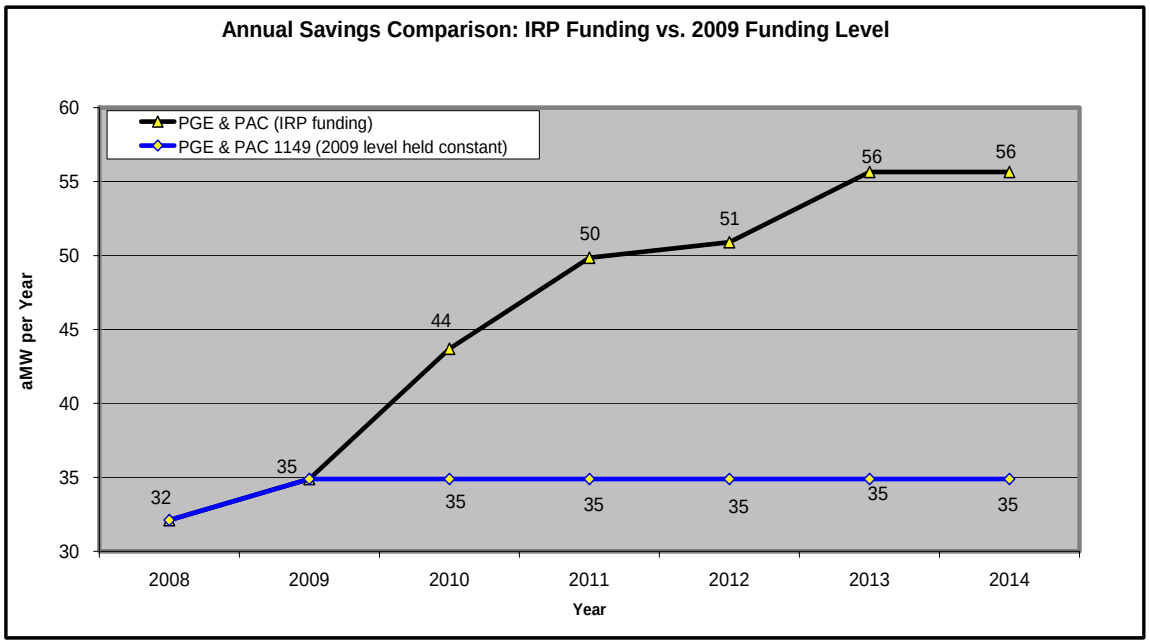


Figure 3

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:

	Savings (aMW)	Total Benefits	Program Costs	Net Benefits
IRP funding (2010-14	255.8	$1,560,194,487	$511,515,319	$1,048,679,168
2009 savings/funding held constant (2010-14)	174.5	$1,064,194,631	$348,900,000	$715,294,631
Difference between IRP and 2009 funding/savings levels	**81.3**	**$495,999,856**	**$162,615,319**	**$333,384,537**

Figure 4

In other words:

- Energy savings: At full integrated resource plan levels, almost 256 aMW would be saved – 81 aMW more than the 175 aMW saved if 2009 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 $333 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.

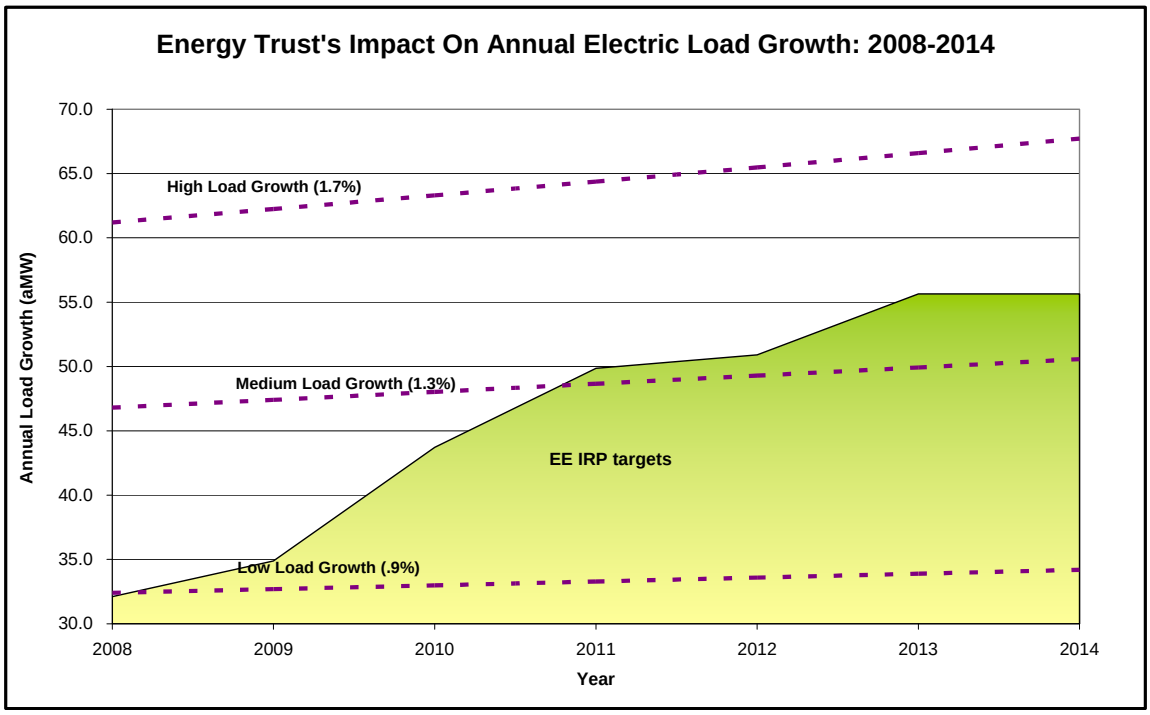


Figure 5

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:

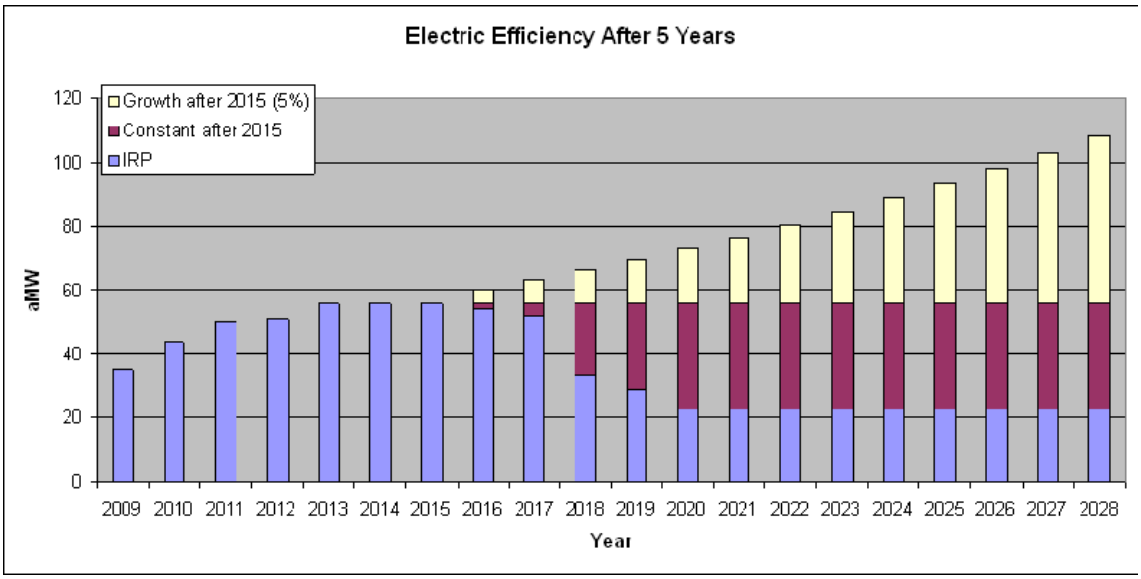


Figure 7

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 burgundy 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 yellow 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.

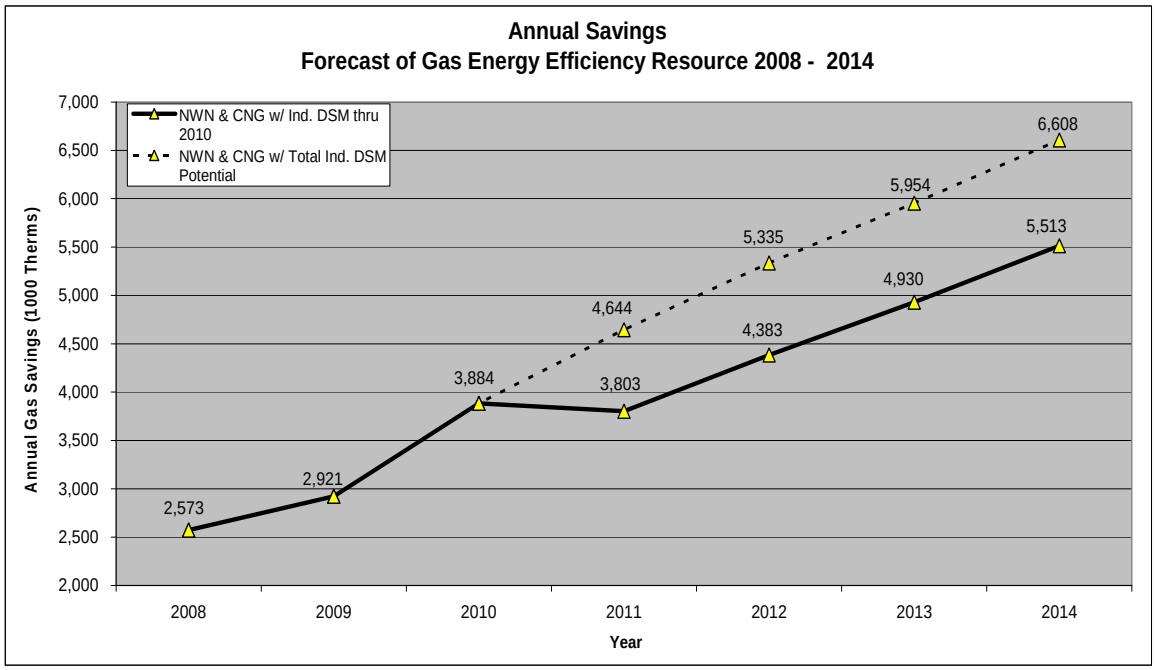
The graph is a projection, not a statement of fact, and whether it over- or under-states this gap is a matter of perspective. From a societal perspective, we have high confidence that there will be additional savings from new technologies in the coming years.[3] As has been the case

[3] 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.

historically, measures being tested now will be validated, new measures will be discovered and efficiency resources will replenish. 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.

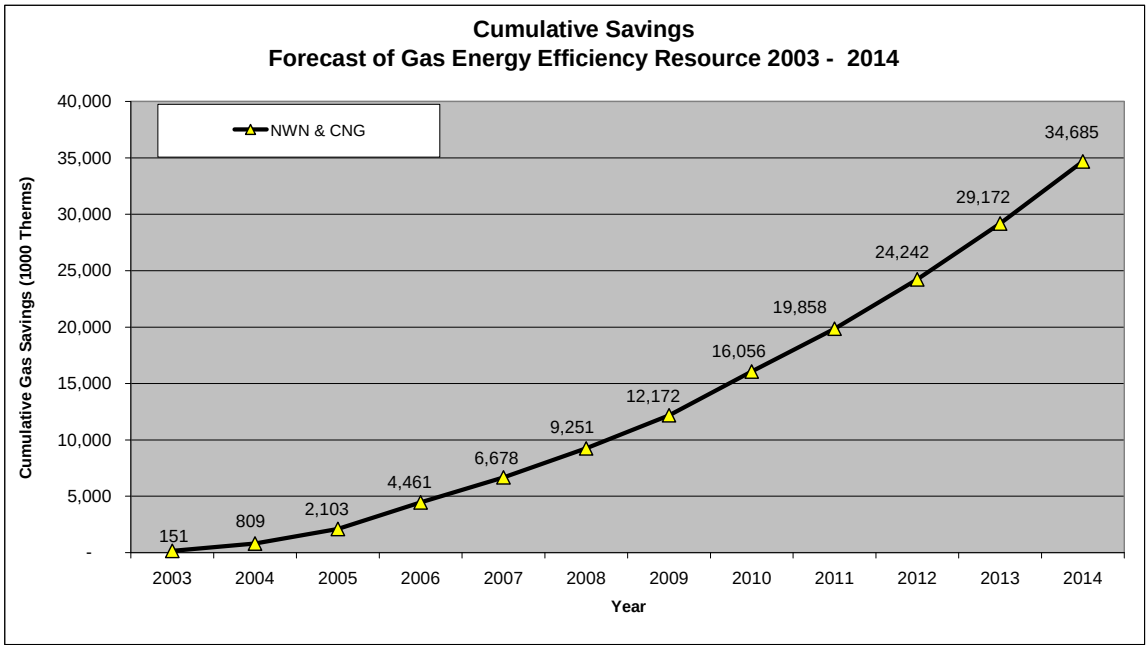
B. Five-year gas efficiency goals

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



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:

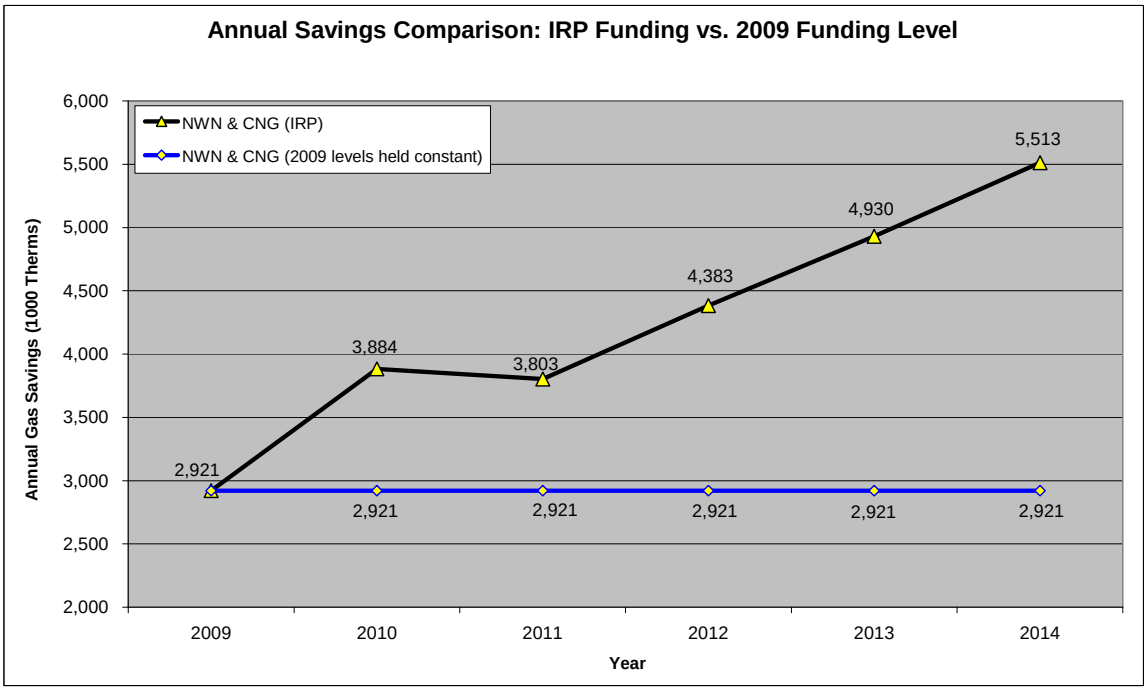


Figure 10

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:

	Savings (Therms)	Total Benefits	Program Costs	Net Benefits
IRP funding (2010-14)	22,512,922	$218,823,344	$145,883,738	$72,939,606
2009 savings/funding held constant (2010-14)	14,605,976	$141,968,616	$94,646,723	$47,321,893
Difference between IRP and 2009 funding/savings levels	**7,906,946**	**$76,854,728**	**$51,237,015**	**$25,617,713**

Figure 11

In other words:

- Energy savings: At full integrated resource plan levels, 22.5 million therms (2010-2014) would be saved, 7.9 million therms more than the 14.6 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 $25 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.

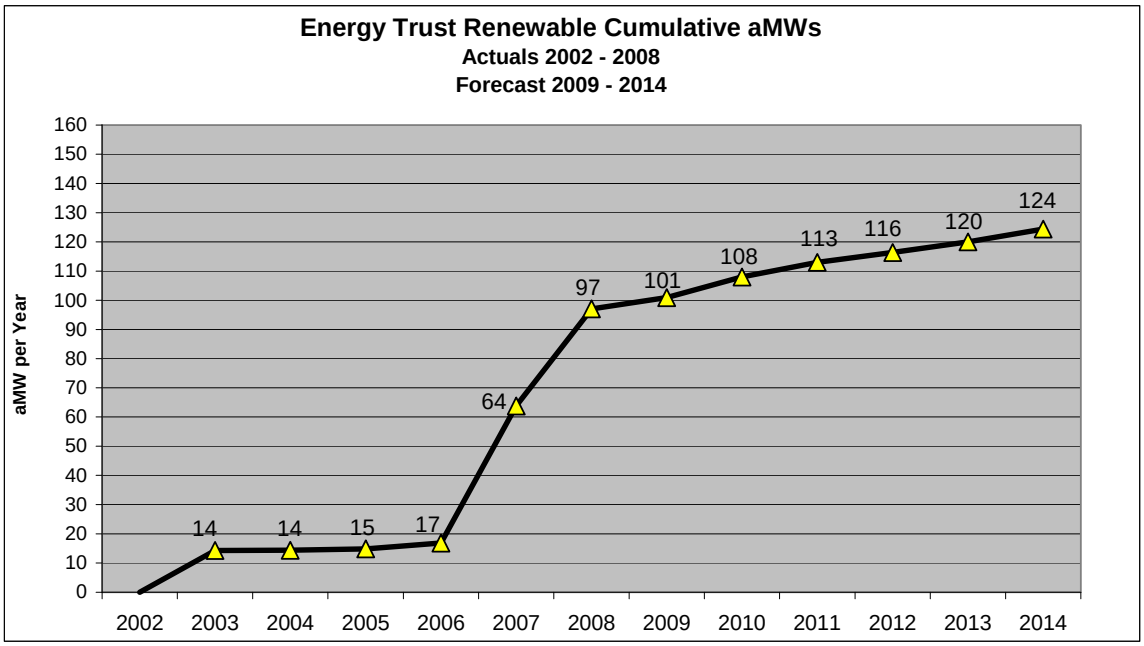


Figure 13

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.

ATTACHMENT 2

STRATEGIC PLAN COMMENTS AND PROPOSED RESPONSES

COMMENT	RESPONSE
EFFICIENCY GOALS, RATE-SETTING AND FUNDING	
The alignment of targets and the planning environment in support of the utility IRPs is positive and helps insure Pacific Power customer's maximum benefits from least cost resources such as energy efficiency. Pacific Power is very supportive of the targets identified by through the Energy Trust planning process. (Pacific Power)	We appreciate the comment.
PGE understands that energy savings acquisition is not completely predictable. However, SB 838 funds should achieve specific IRP goals. The plan's five-year activities discuss a balance of short-term and long-term activities, but remains general in how this would work. PGE would like to discuss allocating the balance of SB 838 funds, especially noting that four years actually remain between now and the end of 2013. (PGE)	As the plan notes (p. 7), the plan's savings projections are considered a "stretch" goals. 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. The plan also recognizes that as integrated resource plans and assumptions are updated, the strategic plan's savings targets may need to be refined. The balance of activities within the 2009-2014 period will be addressed in action plans and budgets. Allocating SB 838 funds from future rate processes is a subject in which Energy Trust and the OPUC are interested.
Earlier and more extensive collaboration between PGE and Energy Trust on forecasts and estimates is essential in moving forward with SB838 funding. (PGE)	We agree

In asking for more funds, be sure you can expend them, and that IRP goals are realistic in a down economy. Would it be better to address rates a year at a time? (Cascade Natural Gas)	We expect to review actual savings annually, and make adjustments in the next year's budget, if warranted.
Energy Trust's plans to acquire all cost-effective energy efficiency are a critical tool to reach Oregon's energy conservation potential. We support full funding for the plan. (Renewable Northwest Project)	We appreciate the comment
"We were very impressed with the conciseness of the plan, the metrics presented, and the fact that you could focus efforts into two goals. We also commend your focus on markets and working within existing market channels with an eye for sustainable results. We support scenario planning, and specifically fully support the EE IRP-Achievable scenario, which is consistent with the [NW Power and Conservation] Council's [draft] 6th Power Plan." (NEEA)	We appreciate the comment.
We strongly recommend Energy Trust focus its efforts in Oregon and commit only the minimally necessary funding and staff time for any activity that does not generate the vast majority of benefits from resource acquisition in Oregon. (Pacific Power)	Energy Trust operates for the benefit of Oregon ratepayers of Pacific Power, PGE and Cascade Natural Gas, and NW Natural ratepayers in Oregon and southwest Washington.

GAS STRATEGY	
It is worth considering new areas of coordination, e.g., a farm biogas facility that produces renewable gas. Under current rules, ETO provides incentives only if the farm makes electricity. If the farm uses the gas on-site, pipes the gas to another customer or sends it to the natural gas system, ETO cannot support the project, not because it is unwilling but because ETO was created with only renewable electricity in mind. We should explore with regulators the idea of ETO supporting these projects. (NW Natural)	We agree.
We would like to explore capitalizing energy efficiency expense. (NW Natural)	We are open to this concept.
Natural gas is not like coal for purposes of climate policy; gas is a bridge strategy. (NW Natural)	We agree.
The draft plan is well done. We encourage you to show the impact of natural gas efficiency programs in relation to load growth, as you have done for electric efficiency programs. (NW Energy Coalition)	We appreciate the comment. The plan was revised to address the effects of efficiency savings on gas demand.
While ETO is trying to stay free of fuel battles, it enters them unknowingly when offering incentives for one fuel and not the other. E.g., incentives for high-efficiency heat pumps continue while incentives for high-efficiency furnaces do not. The situation is exacerbated because electric utilities serve all customers in some manner and so can regularly advertise ETO incentives to customers with gas heat. We discuss this with ETO regularly, and it should be raised in the strategic plan as an issue that must be understood and resolved. (NW Natural)	We remain open to continued discussion of this concern. Energy Trust is committed not to use its resources to persuade customers to switch fuels, and has a formal policy to that effect. At the same time, efficiency programs must be cost-effective, and this requirement may dictate different measures for gas and electric customers.

RENEWABLE STRATEGY	
The renewable strategy in the draft plan was thin. Refinements discussed since the draft was issued are much clearer. (Oregon PUC consultation)	Energy Trust fleshed out the renewable part of the plan to clarify its elements: • Maintain flexibility to support a variety of technologies • Provide more support, earlier • Help leverage other funding • Team with utilities to overcome barriers to development
Given likely high demand for small-scale renewable projects and Energy Trust's limited budget and evolving state tax credit policy, we believe the draft plan's modest renewable energy goals are pragmatic. However, significant flexibility is needed within the next five years so Energy Trust can re-assess and modify its investment strategy if opportunities change. (Renewable Northwest Project)	We agree.
A feed-in tariff will affect the renewable energy program; we are anxious to work with ETO to develop 15 MW of large solar projects, possibly through a master agreement like that created for wind projects. (PGE)	Whether Energy Trust can support renewable energy projects that satisfy utility renewable portfolio or solar feed-in tariff requirements is under discussion.
CUSTOMER SERVICE	
Customer service can and should be excellent at all funding levels. (PGE)	We agree, recognizing that funding can constrain service.
We support market research and product development, but also encourage ETO to focus on actual customer service, e.g., by monitoring metrics on customer wait times, and surveying customers who do not follow through on programs. (PGE)	We agree.

ENERGY TRUST-UTILITY COLLABORATION	
Closer ETO-utility collaboration would be valuable; a Strategic Utility Roundtable may be a way to do this. We continue to believe that a utility Board seat would be best. (PGE) Consider adding one ex-officio utility board position for an initial term of two years. (Pacific Power) The plan should emphasize the importance of engaging utilities in ETO's strategic direction, particularly given proposed federal climate legislation, which is expected to cap emissions. (NW Natural) Utility representation on the Energy Trust's Board is not needed. To ensure even greater opportunity for stakeholders to raise issues of concern, we support a Utility Strategic Roundtable. The Roundtable should be structured to ensure utility interests and the interests of other stakeholders are balanced. Members should include non-utility stakeholders with an interest in issues of importance to utilities. Non-utility members could include the Citizens' Utility Board of Oregon, Renewable Northwest Project, and Industrial Customers of Northwest Utilities. (Renewable Northwest Project)	While the Energy Trust board seeks to be as broadly representative of energy users in the utilities' service territories as possible, the board is not a stakeholder board (Grant Agreement, section 5.k). The board agrees that close collaboration between utilities and Energy Trust is important. We look forward to working through the Strategic Utility Roundtable.
We support ETO's "Savings Within Reach" program to help ensure that we do not leave some of our most vulnerable customers out of the march towards greater efficiency. Additional mention of this strategic direction and continued efforts to reach lower income customers would strengthen your plan. (NW Natural)	The plan addresses this concern in five-year activity number 6, "Sector and geographic diversity"

COORDINATION WITH UTILITY OUTREACH AND MARKETING	
PGE considers itself a significant channel for awareness of and participation in ETO programs via bill inserts; warm transfers from our call center; qualified leads; and would like to further this collaboration. (PGE)	We agree.
The plan should emphasize that utility communication channels and delivery mechanisms are key in the success of ETO programs. These systems are working well but should always be reviewed, refined and improved. While expenditures on ETO branding may not be large, these dollars would be better spent communicating about specific programs. (NW Natural) We recognize the challenges of co-branding with multiple utilities, but strongly recommend co-branding is the default rather than the exception. (Pacific Power)	We agree that utility communication channels are key, and welcome continued collaboration with utilities to review, refine and improve. As we use marketing to engage customers and increase program participation, we remain open to exploring ways to leverage customer recognition of Energy Trust's value as a neutral third party *and* the strong, long-standing relationship between utilities and their customers. We recognize that joint messaging and co-branding, when feasible and appropriate, are effective.
DATA-SHARING CONSTRAINTS	
Address data-sharing constraints. (Cascade Natural Gas)	We agree. We encourage all the utilities to help address data-sharing constraints to help ETO meet customer demand and keep costs low.
COORDINATION WITH UTILITY DEMAND RESPONSE	
We welcome ETO collaboration on demand response as it relates to energy efficiency. However, demand response programs address utility real-time power supply needs, which is an express utility responsibility (PGE)	Energy Trust recognizes that demand response is a utility responsibility. Energy Trust's interest is in opportunities to increase end-use efficiency.

FIVE-YEAR ACTIVITIES	
PGE supports limited research into behavioral activities but suggests ETO invest little in development-stage technologies (PGE)	We agree, with the caveat that more and more attention will need to be paid to innovation to ensure cost-effective efficiency options beyond five years.
Show where you expect to find savings by sector over the five years (OPUC consultation)	Energy Trust revised the plan to do so.
Spell out what Energy Trust is trying to accomplish in the "Encourage innovative technologies" section of the plan. (OPUC consultation)	Energy Trust revised the five-year activities section of the plan to provide examples of key activities, including investment in innovative technologies.
Pilots may involve short term start-up costs, but we hope to see these costs and other program and operations costs drop over time. The strategic plan should emphasize continued efforts to manage and drive down costs. We appreciate that ETO has engaged in an organizational redesign that strives to increase operational efficiency and that a separate third-party management review is underway. (NW Natural)	We agree that holding costs down is a priority, while recognizing that: (1) more and more attention will need to be paid to innovation (including pilots) to ensure cost-effective efficiency options beyond five years; and (2) efficiency measures are likely to grow more expensive in order to reach deeper into markets.
Does Energy Trust have goals for any long-term element, e.g., net-zero? (OPUC consultation)	Energy Trust does not have quantitative objectives for long-term goals, but provides quantitative objectives in two-year action plans.
Group the draft plan's five-year activities: one group for #1, #3, #5 and #6 and another group for activities 2, 4 and 7. (NEEA)	The plan was so modified.

ATTACHMENT 3: DRAFT STRATEGIC PLAN WITH REDLINES

Draft Strategic Plan

July 29, 2009

Executive Summary

Energy Trust of Oregon is an independent, nonprofit organization dedicated to helping ratepayers invest in and benefit from 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. It has since 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 through 2025. At the same time, the legislature also authorized supplemental funds for certain electric energy efficiency programs. Separate agreements with gas utilities address resource acquisition potential and corresponding funding levels.

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: Help utilities and their ratepayers acquire all cost-effective energy efficiency.

- Between ~~2009~~ 2010 and 201~~3~~4, save 262 ~~between 200 and 244~~ average megawatts of electricity, contingent on adequate ~~depending on~~ funding, through efficiency and conservation
- Between ~~2009~~ 2010 and 201~~3~~4, save 22.5 ~~between 8.5 million and 19.4~~ million annual therms of natural gas, contingent on adequate ~~depending on~~ funding, through efficiency and conservation

Goal 2: Accelerate the rate at which new renewable energy generation is produced, helping to achieve Oregon's 2025 goal of meeting at least 8 percent of retail electrical load from small-scale renewable energy projects.

- Between ~~2009~~ 2010 and 201~~3~~4, achieve an additional ~~36~~ 23 average megawatts of renewable energy; and
- 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 2009-2013 activities, detailed on pages 13-17.

~~1.~~9. Accelerate energy efficiency and renewable energy investments, at a pace consistent with available funding
10. Maintain support for a variety of renewable energy technologies

[Order changes below:]

~~2.~~11. Provide excellent customer service to all Energy Trust participants, with a level of effort that reflects funding
~~3.~~12. Encourage innovative technologies and practices
~~4.~~13. Assure that two-year budgets and action plans are balanced and equitable
~~5.~~14. Support development of clean energy businesses
~~6.~~15. Communicate the value of energy savings and renewable energy generation
~~7.~~16. 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 weathered the crisis 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 new energy efficiency, market transformation, and the above-market cost of new renewable energy.

The Legislature also allowed 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 non-profit 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.[4] 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% 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.

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 met almost as much energy demand as an average coal power plant would have—285 average megawatts, enough clean energy to power 221,000 Oregon homes. 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 38.5 average megawatts and 3.3 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 about one-third of the cost of gas generation, transportation and storage.

[4] 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 Development, and 10 percent goes to weatherization in K-12 schools under the direction of educational service districts.

In addition to specific and direct ratepayer benefits, Energy Trust programs deliver a significant side-benefit: helping achieve Oregon's greenhouse gas reduction goals.[5] By delivering energy resources without the need for fossil 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.

Another important benefit to Oregonians is long-term investment in Oregon's economy. The money Energy Trust invests in energy efficiency and renewable energy stays in the Oregon economy, providing Oregon jobs and wages instead of exporting revenues to energy producers in other areas. 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 Oregon's green economy.

The Draft 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, motivated 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 continues to grow for Energy Trust services and incentives 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. 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 look beyond five years.

The Coming Five Years: The utilities' integrated resource planning analyses, reviewed by the OPUC, do allow 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 steadily over the coming five years.

Funding Assumptions: Integrated resource plans are not rate proposals, however, and it will take rate proposals to fund these programs above a base level. ~~Because Energy Trust does not propose or review rates, this plan describes two scenarios for energy efficiency: one in which program funding is essentially *status quo* at 2009 levels and a second in which program budgets grow to capture the cost-effective energy efficiency foreseen in the utility plans.~~ At the time this plan was written, NW Natural was the only sponsoring utility that had filed a rate schedule to fund enough efficiency to achieve integrated resource plan goals in 2010 and 2011. This plan assumes that PGE, PacifiCorp, and Cascade Natural Gas will also fund efficiency

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

programs to that level, and that all the utilities will provide funding to achieve integrated resource plan goals for the five years covered by this plan (2010-14).

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 current law restricts energy efficiency funding for these large energy users, it is unclear whether all of the energy savings shown in Figures 1 and 2 (p. 7) can be achieved, or whether the same goals can be achieved with increased energy savings for smaller customers.

Beyond Five Years: It is even harder to foresee 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 and, in the analysis, forecasted savings diminish after that. However, based on historic experience and the dynamic nature of technology development, there is little doubt that significant energy savings from technologies that are now in development will prove cost-effective and that new efficiency resources will be discovered. While 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, this plan's five-year objectives therefore include development activities to help ensure that new efficiency resources will be there when needed.

Renewable Energy: Energy Trust's role in renewable energy, which the Legislature changed in 2007, is different than its role in energy efficiency. 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 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. Because demand for smaller renewable energy projects is projected to outstrip Energy Trust funding by 2011, Energy Trust will need to reassess its investment strategy, and may re-focus funding on fewer renewable technologies and/or program areas.

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 has economic and environmental benefits for 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 and opportunities in energy efficiency, conservation and renewable energy.

Our Long-Term 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 it coordinates its analysis with Northwest Power and Conservation Council methods and utility integrated resource planning.

A. Five-year electric efficiency goals

Over the coming five years, utility integrated resource plan analyses show a range of potential energy efficiency savings, assuming current, commercially-available technology and what Energy Trust judges to be the fastest feasible acquisition of cost-effective energy efficiency. The following graphs show per-year and cumulative Energy Trust program savings ~~at both ends of the range: the bottom line shows funding projected out five years under 2009 rates assumptions ("current funding"), and the top line reflects funding that would allow significantly faster acquisition of cost-effective energy efficiency ("full funding")~~projections. The savings projections are considered a "stretch," reflecting a 77% increase in annual energy savings between 2008 and 2014. They do not attempt to anticipate fluctuating economic conditions or policies (e.g., 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: **[the following graphs are replaced with one showing the top line only, with updated numbers]**

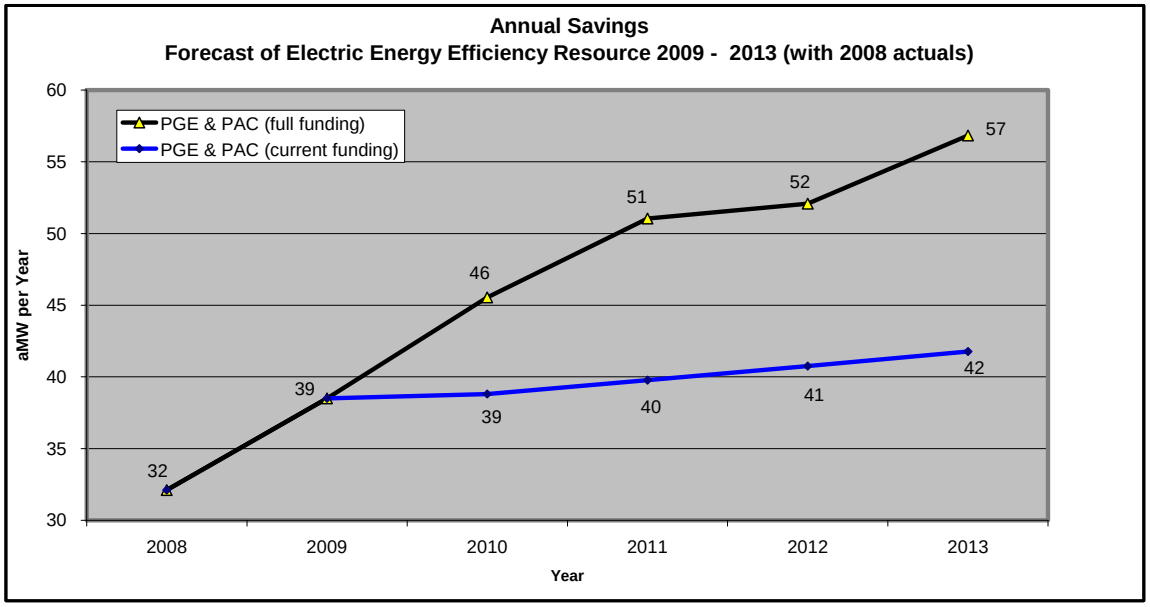


Figure 1

~~*Note: Both the current-funding and full-funding lines are "stretch" goals that aim for high-case energy savings, although at different funding levels. In any given year, actual savings could be lower by approximately 25 percent.*~~

~~Finally, by the end of 2013, cumulative energy savings would be 432 aMW in the full-funding case or 388 aMW in the current-funding case:~~

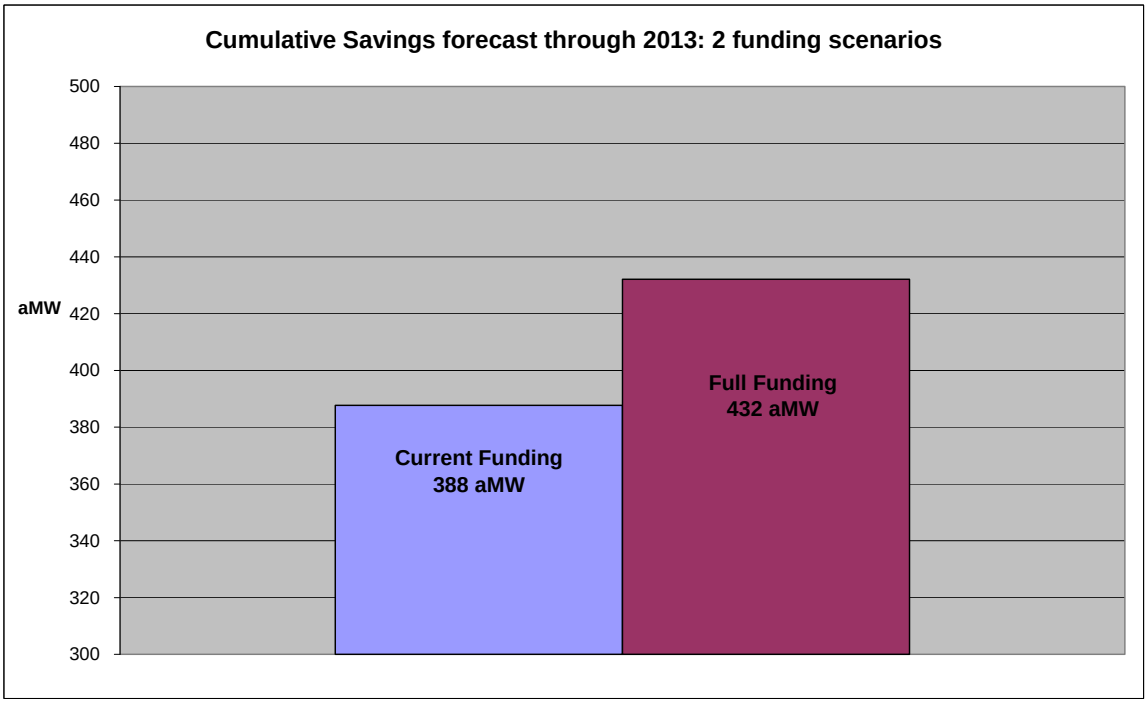
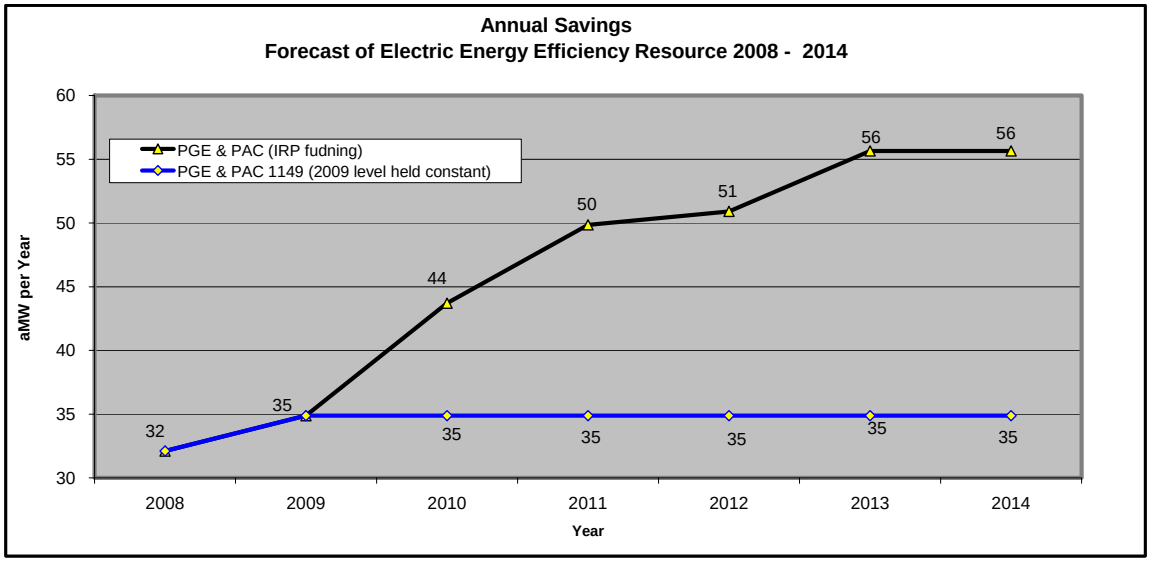


Figure 2

Benefits to utility systems and ratepayers: As noted above, funding to achieve these savings comes from utility rates, which will need to be evaluated every two years 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:



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:

	Savings (aMW)	Total Benefits	Program costs	Net Benefits
IRP funding (2010-14	255.8	$1,560,194,487	$ 511,515,319	$1,048,679,168
2009 savings/funding held constant (2010-14)	174.5	$1,064,194,631	$ 348,900,000	$715,294,631
Difference between IRP and 2009 funding/savings levels	**81.3**	**$495,999,856**	**$162,615,319**	**$333,384,537**

In other words:

~~**Current funding scenario (2009 levels, projected):**~~

- Energy savings/cost: At full integrated resource plan levels, almost 256 aMW would be saved – 81 aMW more than the 175 aMW saved if 2009 levels were maintained.~~200 aMW (2009-2013) at a cost of $355 million~~
- Ratepayer savings: At full integrated resource plan levels, ratepayers avoid paying about $1.6 billion for generation and power delivery; after deducting the cost of efficiency programs, ratepayers save over $1 billion. If funding remained at 2009 levels, ratepayers would miss more than $333 million of this benefit.~~By investing in energy efficiency at this level, ratepayers avoid paying more than $1.2 billion for generation and power delivery. After deducting the cost of achieving these efficiencies, ratepayers save about $863 million.~~
- ~~Effect on load growth: Energy demand declines modestly in the low-load-growth scenario (see figure 3)~~
- ~~Effect on carbon: Avoids about 664,000 tons of CO2 that would be emitted to generate equivalent amounts of grid energy (comparable to taking 117,000 cars off the road)~~

~~The current-funding case represents a "stretch" savings goal and assumes *status quo* revenues. To achieve it, Energy Trust would continue to refine and target its programs, streamline internal processes to remain competitive and be nimble, maximize energy savings for residential, commercial and industrial customer sectors, and dedicate modest effort to identify new efficiency technologies.~~

~~**Full-funding scenario:**~~

- ~~Energy savings/cost: 244 aMW (2009-2013), 44 aMW more than with current funding, at an additional cost of $138 million~~
- ~~Ratepayer savings: By investing in energy efficiency at this level, ratepayers avoid paying about $1.5 billion for generation and power delivery. After deducting the cost of achieving these efficiencies, ratepayers save about $996 million, $133 million more than the current-funding line.~~
- ~~Effect on load growth: Loads decrease in all but high-growth scenarios (see figure 3)~~
- ~~Effect on carbon: Avoids about 812,000 tons of CO2, comparable to taking 143,000 cars off the road~~

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 NW 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%, which is even higher than the Council's high-growth projection. The Council projections are nevertheless helpful in illustrating the effects of efficiency savings on new load growth.

~~The full-funding case shows a 77% increase in annual energy savings between 2008 and 2013. To achieve these savings, Energy Trust would require about $138 million of additional funding over five years, compared to 2009 revenue levels. Energy Trust would still enhance program offerings, streamline processes and maximize savings for residential, commercial and industrial customer sectors. Energy Trust also would broaden and deepen its program portfolio by expanding efforts to test new markets, technologies and innovative approaches.~~

~~The following table summarizes and compares the costs and benefits of these two cases:~~

		Economic Savings to Ratepayers (million $)				
Funding Scenario	Cumulative 5 Year Energy Savings	Cost of Equivalent Generation	ETO Program Costs	Net $ Savings	Avoided Carbon (tons)	Load-Growth Offset
Full Funding	244	$1,489	$492	$996	812,000	Low and Medium Growth Scenario
Current Funding	200	$1,218	$355	$863	664,000	Low Growth Scenario
Difference	**44 aMW**	**$271**	**$138**	**$133**	**148,000**	

Effect on load growth, greenhouse gas goals, and renewable energy requirements~~and fossil fuel use~~:

The following graph compares projected electric savings included in PGE and PacifiCorp's integrated resource plans to a range of Oregon loads, ~~under the current-funding and full-funding cases to a range of Oregon loads,~~ as forecast by the NW Power and Conservation Planning Council. ~~Though t~~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%, which is even higher than the Council's high-growth projection.

The Council projections~~(Energy Trust serves primarily investor-owned utility customers), they~~ are nevertheless helpful in illustrating the effects of efficiency savings on new load growth~~understanding the significant difference between the current-funding and full-funding scenarios~~. **[The following table is replaced by one with a single, solid green wedge]:**

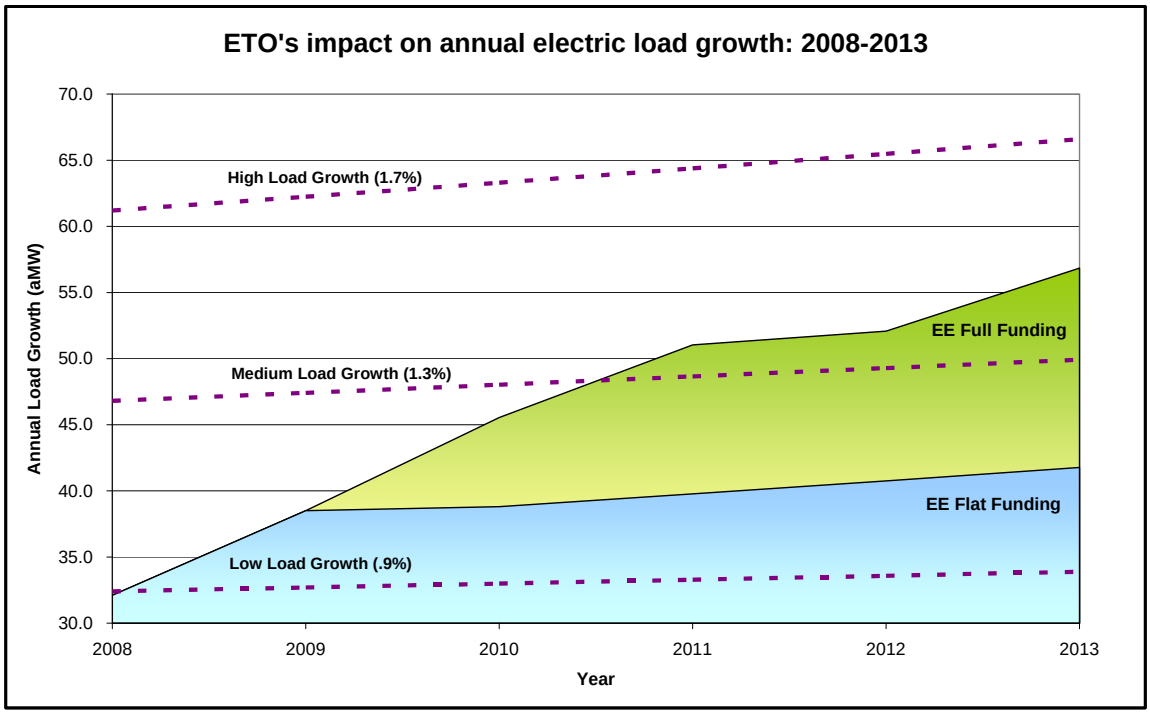


Figure 3

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

In terms of Oregon's greenhouse gas reduction and renewable energy goals, the full-funding case would avoid increasing fossil fuel use in most growth scenarios and help minimize the investment necessary to achieve renewable energy goals. A combined strategy in which energy efficiency is fully-funded 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 materially 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 particular 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.

Electric Savings by Sector (aMWs)							
Sector	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Residential	9.2	9.3	8.0	8.7	6.2	6.5	6.5
Commercial	7.4	10.9	16.9	18.6	20.4	20.4	20.4
Industiral	8.3	10.3	13.9	15.4	17.0	21.6	21.6
NEEA	7.3	5.9	6.7	8.4	8.4	8.4	8.4
TOTAL	32.1	36.4	45.6	51.0	52.1	56.8	56.8

Figure 8

Beyond five years:

Although it is more difficult to predict costs and savings beyond 201~~3~~4, the following graph describes a scenario for electric savings in the out-years:

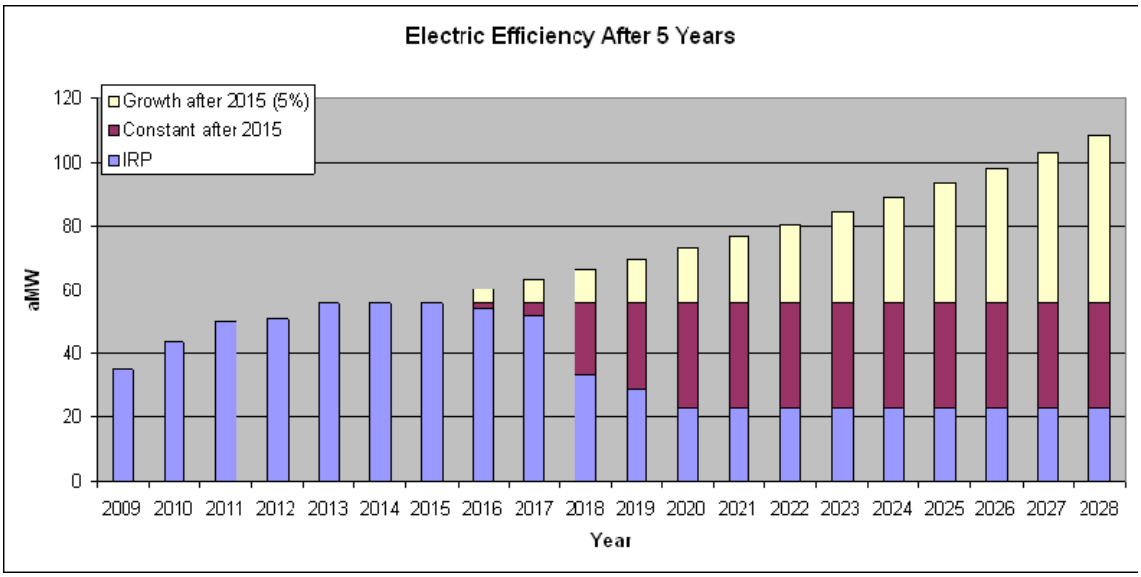
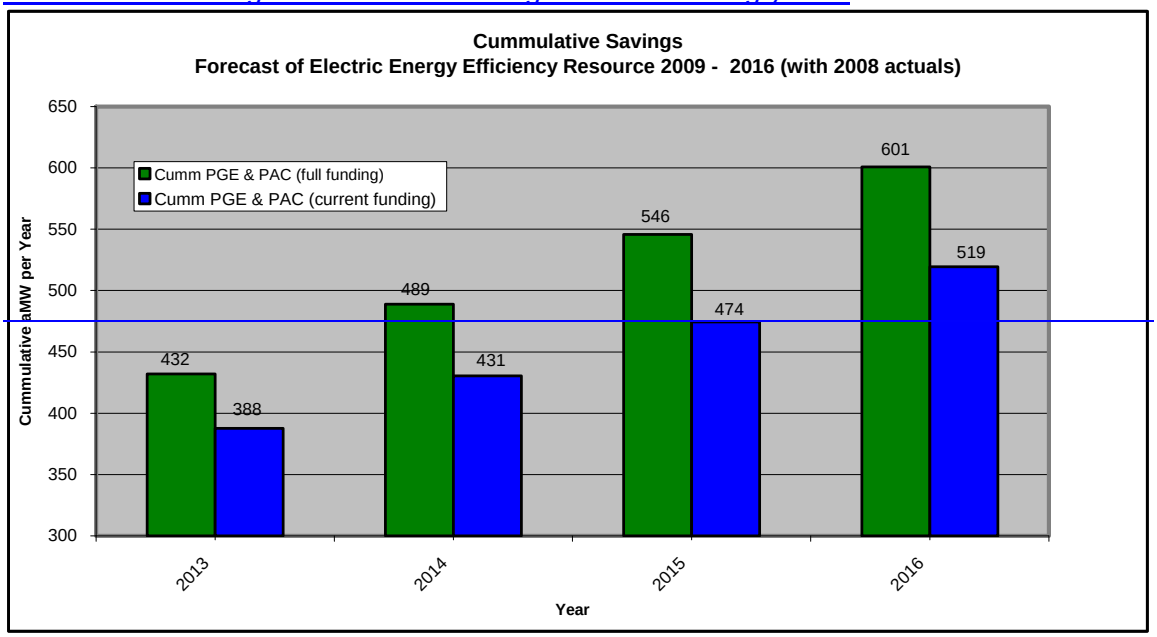


Figure 4

The graph shows Energy Trust program savings reaching a peak in 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 burgundy 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 yellow segment of the bars represents how much more would be needed if efficiency savings are to grow at a 5% annual rate. For comparison, the average projected 2009-2015 annual growth is 8% (48% total over six years). It would take less than eight percent growth to hold load growth steady under the NW Power and Conservation Council's medium-growth scenario, but about eight percent to meet the Council's high-growth scenario.
~~utility integrated resource plans suggest the following savings through 2016:~~
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 after 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.[6]



~~**Figure 4**~~

~~Savings beyond 2016 are yet more difficult to predict. Efficiencies in new buildings can be estimated. However, for existing structures, integrated resource planning considers only *known* energy efficiency measures and technologies. Most of this "known resource" for existing homes, buildings, and industries is deployed by 2016, and the post-2016 known resource therefore looks smaller. However, we consider this supposed decline to be artificial because additional savings from new technologies are highly likely to emerge in the coming years.[7]~~ As has been the case historically, measures being tested now will be validated, new measures will be discovered, and efficiency resources will replenish. 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 returns.~~This limitation in the integrated resource planning analysis underscores the importance of investing in innovation to ensure that efficiency resources regenerate into the future.~~

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% increase in annual energy savings between 2008 and 2014~~at both ends of the range. The full funding line assumes increased revenues to support~~

[6] 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.
[7] 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.

~~resource acquisition going forward. The flat funding line shows savings declining by 2010 as gas carry-over funds are exhausted, and then experiencing incremental growth. Discussions with gas utilities are underway to explore additional funding options to maintain or increase savings beyond 2009~~. **[Graphs replaced]**

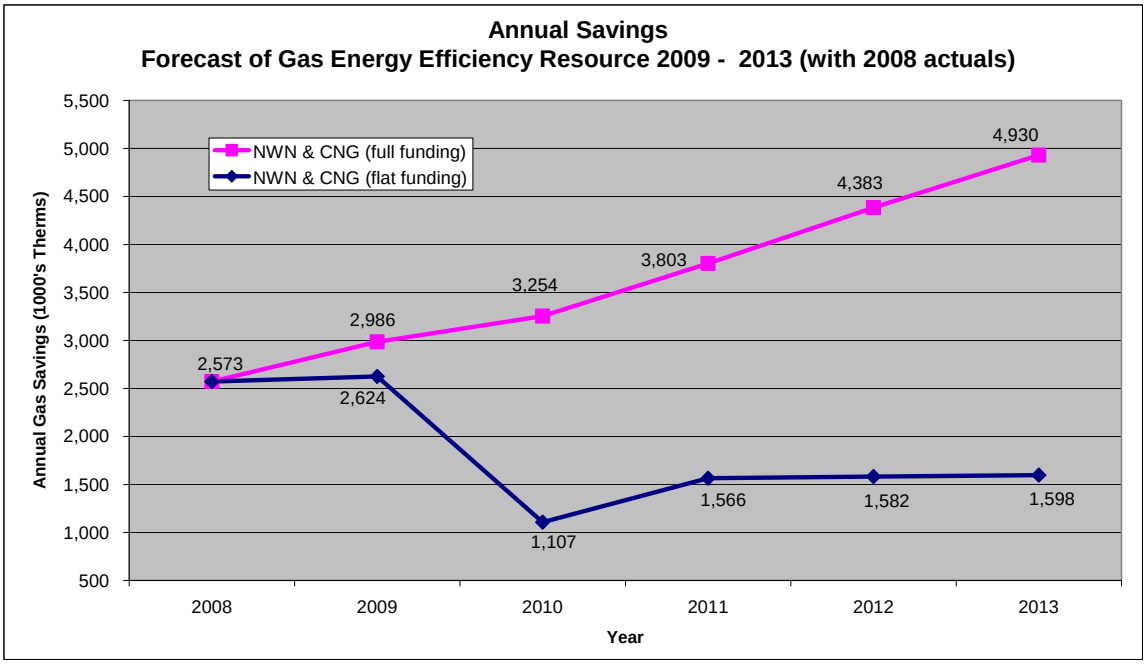


Figure 5

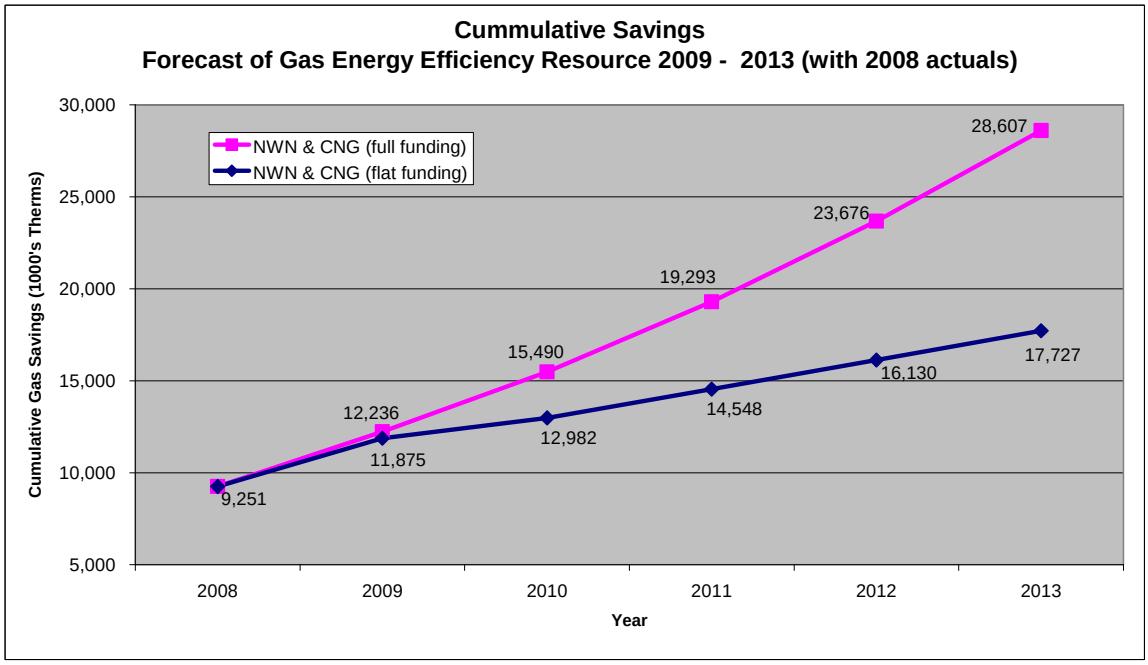
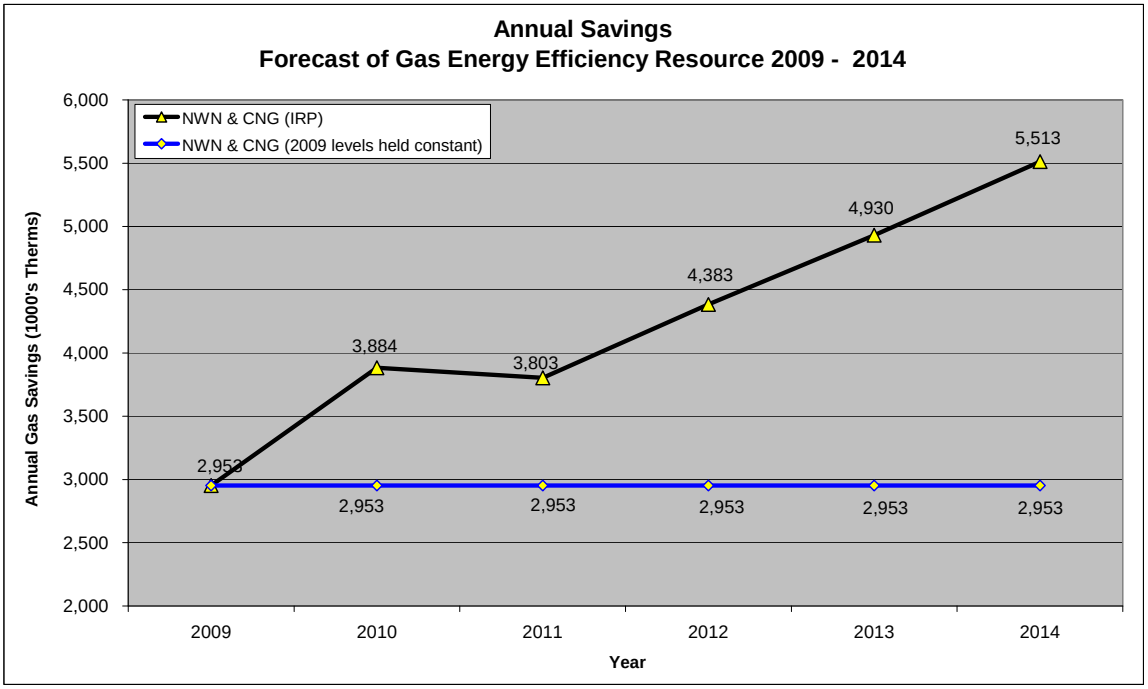


Figure 6

Benefits to utility systems and ratepayers: As noted above, funding to achieve these savings comes from utility rates, which will need to be evaluated every two years 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:



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:

	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
2009 savings/funding held constant (2010-14)	14,762,747.7	$143,492,424	$ 95,662,605	$ 47,829,819
Difference between IRP and 2009 funding/savings levels	**7,750,175**	**$75,330,920**	**$50,221,133**	**$25,109,787**

In other words:

~~**Current funding (2009 levels, projected):**~~

- Energy savings/cost: At full integrated resource plan levels, 22.5 million therms (2010-2014) would be saved, 7.8 million therms more than the 14.7 million therms that would be saved at 2009 levels.~~8.5 million therms (2009-2013), at a cost of $58 million~~
- ~~Ratepayer savings: $24 million (net of cost)~~
- 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 more than $25 million of this benefit.

- ~~Avoided energy cost: $82 million to purchase, store and deliver this amount of natural gas on the open market~~
- Effect on carbon: Achieving integrated resource plan efficiency goals avoids ~~Avoids~~ about 50,000 tons of CO2 that would otherwise be emitted (comparable to taking 9,000 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 uses, 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. ~~As with the electric goal, the current-funding case represents a "stretch" goal given 2009 revenues, and would require similar program enhancements, streamlining, and level of effort to identify new efficiency technologies.~~

~~**Full-funding (all cost-effective savings):**~~

- ~~Energy savings/cost: 19.4 million therms (2009-2013), 10.9 million more than flat-funding, at a cost of $132 million~~
- ~~Ratepayer savings: $56 million (net of cost), $32 million more than flat-funding~~
- ~~Avoided energy cost: $188 million to purchase, store and deliver this amount of natural gas on the open market~~
- ~~Effect on carbon: Avoids about 113,000 tons of CO2 that would be emitted to generate equivalent amounts of energy, comparable to taking 20,000 cars off the road~~

~~The full-funding case would achieve a 92% increase in annual savings between 2008 and 2013. It would capture all the cost-effective savings identified in the gas utilities' integrated resource plans, and require an estimated $73 million more funding, spread over five years. Energy Trust would still streamline its processes and maximize savings for residential, commercial and industrial customer sectors, and it also would broaden and deepen its program portfolio by expanding efforts to test new markets, technologies and approaches.~~

~~The following table summarizes and compares the costs and benefits of these two cases:~~

		Economic Savings to Ratepayers (million $)			
Funding Scenario	**Cumulative 5 Year Energy Savings**	**Cost of Equivalent Generation**	**ETO Program Costs**	**Net $ Savings**	**Avoided Carbon (tons)**
Full Funding	19.4 million therms	$188	$132	$56	113,000
Current Funding	8.5 million therms	$82	$58	$24	50,000
Difference	**10.9 million therms**	**$106**	**$74**	**$32**	**63,000**

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 and around Clark County, Washington. 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.

Gas Savings by Sector (1,000s Therms)							
Sector	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Res	1,353	1,501	1,658	1,955	2,256	2,553	2,859
Comm	1,207	1,249	1,629	1,813	2,088	2,334	2,603
Ind	13	202	596	35	39	43	51
TOTAL	**2,573**	**2,953**	**3,884**	**3,803**	**4,383**	**4,930**	**5,514**

Figure 9: Projected gas savings by sector

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 MW or less. Unlike electric efficiency, the Act provides no additional sources of funds for renewable energy development. Thus, the graph below assumes current-level funding, current programs and modest increments of new generation. Given these assumptions, Energy Trust estimates that it can acquire another ~~36~~ 23 aMW of renewable energy between ~~2009~~ 2010 and ~~2013~~2014, for a cumulative total of ~~133~~ 124 aMW: **[Following graph replaced]**

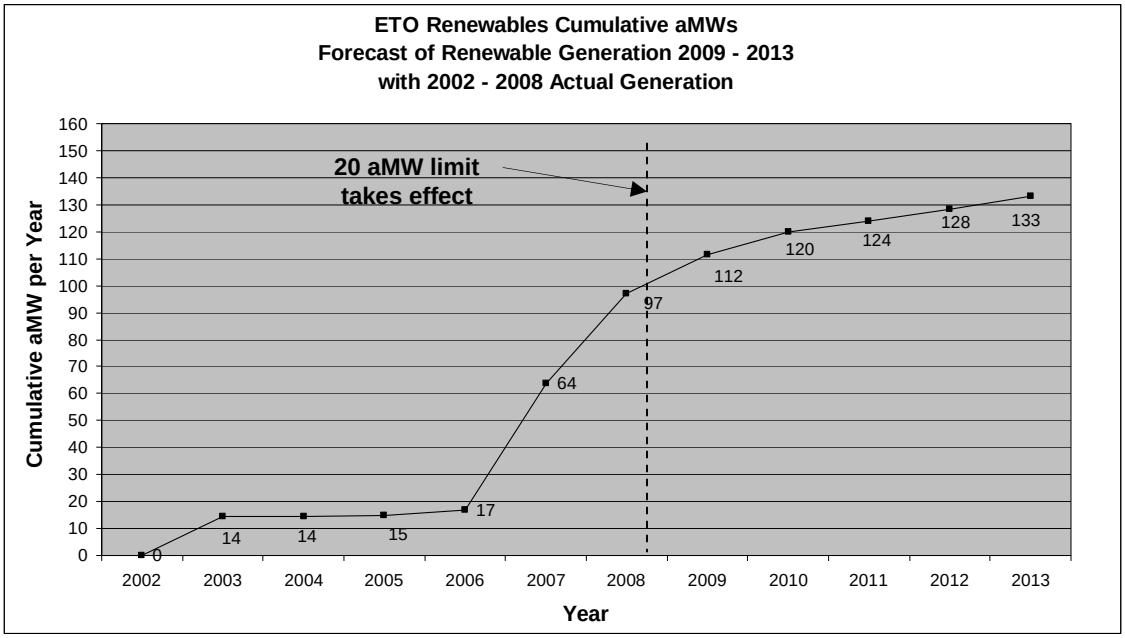


Figure 7

External factors are likely to affect Energy Trust's renewables strategy going forward. For example: the 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; evolving portfolio standards and certification criteria for renewable energy credits in bordering states could affect Energy Trust's role in Oregon projects.

~~Even before the 2009 Oregon legislative session concluded, demand for renewable energy projects was expected to outstrip projected funding by 2011. It is now apparent that new legislation could affect demand for Energy Trust funds. On the one hand, changes to state tax credit programs could significantly increase demand for Energy Trust renewable energy funds. On the other hand, new legislation requiring utilities to pay for small solar photovoltaic systems could free up Energy Trust funds. Whether the net effect is positive or negative, it is clear that before 2011 Energy Trust will need to reassess its investment strategy, and may re-focus limited renewable energy dollars on fewer technologies and/or program areas.~~
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, and
- 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. ~~Under either funding scenario, Energy Trust would have to stretch to meet the goals of this plan. This section outlines the activities Energy Trust expects to undertake, although the scope of these activities depends on funding levels.~~ 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 and renewable energy investments.

~~a.~~c. Acquire ***more standard efficiency measures*** through retrofit and new 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, by, for example:
  - Piloting approaches that provide more comprehensive customer information, technical assistance, coordination, and/or incentives, including markets that have been underserved
- ~~Current funding: Maintain, refine and gradually expand Energy Trust programs, which are well-geared to reach these savings.~~
- ~~Full-funding: Simultaneously expand efforts in multiple, additional markets. As necessary, invest significantly more in research, provide customer information, offer technical and other assistance and/or incentives to remove barriers and better reach all markets, especially those who have been underserved, as in smaller communities.~~

~~b.~~f. Acquire efficiency savings through ***~~existing~~ supply chains*** for equipment and services (e.g., designers, distributors and contractors) for equipment and services that are generally sold directly to customers at times of initial purchase or replacement and reach niche markets:

- 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, 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.

~~Current funding: Energy Trust programs are well geared to work with the largest and most promising supply customers and niche markets. Develop approaches for additional supply chains and customer opportunities at a modest pace. Coordinate to avoid duplication with the Northwest Energy Efficiency Alliance.~~

~~Full-funding: Make significant, multi-year investment effort in developing relationships and supplying efficient products through a greater array of supply chains and work with additional customer associations, chains, and individual customers, including more extensive regional or national coordinated intervention, e.g., electronics sold business-to-business, hospital equipment, specialized industrial production equipment, advanced design in national chains.~~

~~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:

- ~~Current funding: Continue limited, gradual research-intensive efforts to explore home energy monitors, smart power strips, tune-up of commercial rooftop systems and other approaches.~~
- ~~Full-funding:~~
- Explore ~~diverse~~ opportunities to accelerate behavioral research and technology through field testing, refining or reinventing program systems, testing standards of proof, in coordination with demand management and utility AMI metering and regional efforts.
- ~~o~~ Develop metrics to guide and manage behavioral measures.
- ~~o~~ Work with utilities to help delay or reduce fossil load growth to meet peak or integrate renewables by using demand response, load management, and storage technologies, as these resources become cost-effective (next 3-5 years).
  - ~~Work with utilities to identify opportunities for energy efficiency, renewable energy and conservation in coordination with utility SmartGrid investments.~~

~~d.~~g. ***Increase comprehensiveness***: install more energy measures per customer served. Energy Trust is already working with the City of Portland on the Clean Energy Works pilot to test mechanisms for deep home retrofit, and has applied for 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 which achieve efficiencies 50% below code through efficiency, and at least 60% including renewable energy. In addition, Energy Trust will:

- ~~Current funding: Some deep-savings initiatives are in place (e.g., custom commercial) and more are developing (e.g., zero net energy new building, Portland residential pilot program), but many initiatives rely on vendors to sell efficiency. Continue and refine efforts to encourage vendors to increase the number of energy measures installed per customer.~~
- ~~Full-funding:~~
- ~~o~~ Expand efforts to overcome limitations inherent in vendor-driven programs.
- ~~o~~ Develop tools and business cases for vendors to sell technologies and design approaches with deeper savings.
- ~~o~~ Work directly with larger and more sophisticated customers.
- ~~o~~ Develop templates to simplify and standardize approaches to deeply-efficient design.
- ~~o~~ Integrate efficiency and renewable opportunities for customers in holistic approaches to energy and resource management.

e. ***Link to larger-scale initiatives***, including regional/interstate collaborations, natural partners, 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::

- ~~Current funding: Energy Trust works extensively with other energy and carbon-related initiatives, and investigates links to grid, land, water, waste and transportation management only in limited ways.~~
- ~~Full-funding:~~
- ~~o~~ Explore ways to ~~i~~integrate efficiency into related initiatives (e.g., demand reduction, smart growth, resource recovery/conservation, transportation, land use planning).
- ~~o~~ 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

f. ***Renewable energy***. Given current funding:
- Target medium-to-large (up to 20 MW) renewable projects, such as biopower and hydropower for irrigation districts and municipal water delivery systems.
- Continue standard photovoltaic (PV) and small wind programs, adjusting budgets in light of market conditions and legislation.
- If funding and/or tariff mechanisms allow, integrate PV into leading-edge construction projects to demonstrate innovative applications and/or in connection with initiatives such as zero-net energy.

***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

[Order of activities below changes—the new order is reflected in numbering:]

25. *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 increase customer focus. Going forward, Energy Trust will seek to:While the level of effort will vary with funding, improving service is a priority in all dimensions. In particular, 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
- Pursue innovation in program delivery:
  - Simplify participation in Energy Trust programs
  - Move to automated, on-line forms
  - Offer appropriate financing tools, including those that allow owners to invest in a full spectrum of clean energy improvements
  - Help interested customers 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 customers, organizations with linked missions, and pivotal equipment and services supply organizations
  - Fully integrate program services delivery across efficiency and renewable energy where appropriate to ease and facilitate consumer access
  - Proactively identify geographic locations with potential for significant renewable energy development to resource owners currently unaware of the potential
- Improve contractor support and training.

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 use, and will need to be tested in 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 "Steps to Net-Zero Buildings" pilot program (aiming for buildings that use efficiency measures to consume 50% less energy than required by codes, and 60% less overall by using 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, it and its partners will:

~~Making investments in these technologies and methods is key to moving beyond current energy efficiency resource projections, which are based on known technologies, and meeting renewable energy goals. This is also an area in which level of effort depends to a great extent on funding:~~

- ~~Current funding: Energy Trust dedicates considerable effort to a small group of high-priority measures, but constrains renewable energy efforts to encourage innovative technologies and applications.~~
- Increase funding for Northwest Energy Efficiency Alliance 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;
- ~~Full-funding:~~
- ~~Explore a full range of innovations, and l~~Leverage the work of other organizations such as the NW Energy Efficiency Alliance, the American Council for an Energy Efficient Economy, the Consortium for Energy Efficiency, the US Department of Energy, the US 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 coordination is not worth the cost and delay.

To guide these activities, Energy Trust will develop metrics to guide 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, will not be developed or demonstrated without Energy Trust involvement, produce measureable savings, be cost-effective, be critical for a key initiative (e.g., zero-net commercial buildings), or balance intermittent renewable generation with load.

- ~~Develop metrics to guide and manage technology development activities.~~
- ~~In deciding where to focus efforts in efficiency technology, consider whether it is likely to (as applicable):~~
  - ~~significantly reduce energy load growth~~

- ~~provide alternative approaches and technologies, including commercializing promising renewable technologies, such as low-temperature geothermal or farm biomass~~
- ~~bring products to our market in the near term~~
- ~~appeal to users~~
- ~~not to developed or be demonstrated without our involvement~~
- ~~produce measureable savings~~
- ~~be cost-effective~~
- ~~be critical for a key initiative (e.g., zero-net commercial buildings)~~
- ~~balance intermittent renewable generation with load~~

~~4~~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 consider 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 "Steps to Net-Zero Buildings" program and the Positive Energy 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 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 chains stores. Keeping a place for these upstream initiatives in Energy Trust's portfolio will complement programs with more immediate focus.

~~5~~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 training for trade allies
  - Invest in market transformation to help create and develop future markets
- Help businesses integrate efficiency and renewable energy profitably into their business plans.
- 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., zero-net energy buildings), and at the same time help

businesses and homeowners who prefer to accelerate their efficiency investment incrementally.~~which may be achieved through incremental investments~~

~~6~~7. ***Communicate the value of energy savings and renewable energy generation***

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

~~7~~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 evaluate and refine Energy Trust's efficiency and effectiveness compared to relevant energy and non-energy businesses
- Continue to foster transparency through open meetings, advisory councils, reports and other publications, and other means
- Demonstrate a high standard of organizational ethics
- Periodically assess organizational opportunities and risks
- When considering expansion opportunities, use Energy Trust's core mission and competencies as touchstones.