



April 7, 2015

To: House Committee Revenue

From: Anthony L. Buckley, Chief Financial Officer
Oregon Department of Energy

Subject: Tax Credit Committee Policy Questions
HB 2447A Residential Energy Tax Credit

Thank you for the opportunity to provide information about the Oregon Department of Energy's (ODOE) Residential Energy Tax Credit (RETC) program. On [March 10, 2015](#), ODOE provided initial response to these questions for the House Committee on Energy and Environment. Below are the expanded responses to the Tax Credit Committee Policy Questions.

1. What is the public policy purpose of this credit? Is there an expected timeline for achieving this goal?

The public policy purpose of the Residential Energy Tax Credit is to promote residential energy savings or energy displacement and market transformation by providing incentives that encourage the purchase of energy efficient devices and renewable energy systems for homes in Oregon. The program was designed to meet a significant portion of Oregon's incremental residential energy needs with conservation and renewable resources.

Investments in residential energy efficiency and renewable energy not only directly benefit homeowners, renters, and the energy efficiency contractors and suppliers, but also benefit Oregon and the region by reducing the need for new electric generation in the future. This enables the energy system to support our growing region and economy with reliable power at a lower cost, with lower emissions, and with reduced reliance on out-of-state energy supplies. RETC is a cost-effective way to capture these benefits because it builds upon homeowner investment and other incentive programs to achieve more energy efficiency and renewable energy than any of these efforts would achieve alone. Also, by increasing volume and supporting emerging technologies, RETC helps transform markets to bring down costs and reduce the incentives needed for continued uptake of successful measures.

For conservation incentives under the RETC program, the timeline for achieving the goal will track the Northwest Power and Conservation Council's¹ ongoing power planning. The Council has found that "improved efficiency of electricity use is by far the lowest-cost and lowest-risk resource available to the region. Cost-effective efficiency should be developed aggressively and

¹ The Northwest Power and Conservation Council's mission is to ensure, with public participation, an affordable and reliable energy system while enhancing fish and wildlife in the Columbia River Basin.

on a consistent basis for the foreseeable future. The Council's plan demonstrates that cost-effective efficiency improvements could on average meet 85 percent of the region's growth in energy needs over the next 20 years."²

One of the goals of the 10-Year Energy Action Plan is to meet 100 percent of load growth in Oregon with energy conservation and efficiency. ODOE programs currently contribute about 15 percent of statewide energy efficiency toward that goal. For the 2012-13 period Oregon's reported and voluntary conservation and energy efficiency efforts helped hold the line on load growth. Incentives are a part of meeting increasing demand by influencing and accelerating customer buying decisions. The RETC program's timeline for conservation projects will track power planning, as long as energy conservation is the least cost resource.

In addition to electricity savings, ODOE programs save natural gas, fuel oil and gasoline, saving about one million therms of natural gas per year.

For renewable incentives under the RETC program, the timeline for achieving the goal will track the 10-Year Energy Action Plan. One of the action items for the plan is to align the state's incentive programs to support meeting the state's energy generation goals. RETC incentives for renewable projects encourage the installation of systems that support distributed generation. The benefits of distributed generation include increased efficiency, reduced environmental impact, reduced grid cost, increased reliability and quality, and business certainty. The RETC program supports residential opportunities to increase distributed generation in the state through solar and wind resources.

2. Who (groups of individuals, types of organizations or businesses) directly benefits from this credit? Does this credit target a specific group? If so, is it effectively reaching this group?

The Residential Energy Tax Credit program benefits homeowners, renters and landlords statewide who upgrade or purchase energy efficient equipment and renewable energy systems with personal income tax credits and energy savings or displacement. Oregon homeowners, renters and landlords directly benefit by lowered energy use and improved building performance. Retailers and the construction industry benefit from the added business from eligible purchases and installations. These retailers include heating, ventilating and air conditioning; solar photovoltaic and thermal; water heating; and wood and pellet stoves.

Since 1978, the program provided tax credits for devices that will save or displace enough energy in Oregon to serve about 400,000 households for one year as the result of issuing over 570,000 tax credits totaling approximately \$172 million. More information about the number of applications is provided in Attachment 1. Although the program has successfully reached many homes in Oregon, opportunities still exist to increase energy efficiency and promote renewable energy use in Oregon homes.

² Sixth Northwest Conservation and Electric Power Plan Sixth Power Plan, http://www.nwcouncil.org/media/6383/SixthPowerPlan_Overview.pdf

3. What is expected to happen if this credit fully sunsets? Could adequate results be achieved with a scaled down version of the credit? What would be the effect of reducing the credit by 50%?

If the Residential Energy Tax Credit ended, Oregon homeowners would reduce purchases of energy efficient equipment and renewable energy systems, such as efficient heat pumps, gas furnaces and water heaters, and solar thermal and photovoltaic systems. While homeowners would still make a lower level of investments justified by direct benefits and ratepayer incentive programs, the incentive to leverage these investments to achieve additional societal benefits would be lost. RETC eligible device retailers and the construction industry may see a slowdown in demand for these types of appliances and installations. If not offset by other energy efficiency and renewable energy programs, the increased energy use in Oregon as a result of devices not purchased could result in increased fossil fuel generation and resulting greenhouse gas emissions and other societal impacts.

RETC incentives enhance incentives from other utility and regional programs. Frequently, RETC complying devices are more efficient than the minimum for other program incentives, putting an extra nudge in the buying decision. Customers of RETC trust ODOE to guide them to the top tier of cost-effective energy efficiency. The combination of utility incentives and RETC incentives make high efficiency product more available to citizens. “Tax-credit eligible” is synonymous with the best efficiency choice.

The program was limited during the 2011 legislative session by removing dishwashers, washing machines, refrigerators and alternative fuel vehicles. HB 2447A would also limit the program further by adding a 50 percent cost cap on all devices and the ability to adjust the tax credit rate by device based on market conditions through rulemaking. ODOE is asking for this cap and rulemaking authority in order to shape incentives to maximize savings at the least cost.

4. What background information on the effectiveness of this type of credit is available from other states?

Oregon is considered a leader in conservation efforts and other states have modeled their programs after Oregon’s. The majority of other state incentive programs had been funded by American Recovery and Reinvestment Act (ARRA) money and a fixed amount of state funds. The incentives are mostly in the form of rebates and have a limited life span but covered many of the same items as Oregon’s RETC program.

The American Council for an Energy-Efficient Economy (ACEEE) has found that “financial incentives are an important instrument to spur the adoption of technologies and practices in homes and businesses.”³ The ACEEE scorecard provides that “financial incentives can lower the up-front cost and shorten the payback period of energy efficiency upgrades, two critical

³ American Council for an Energy-Efficient Economy, The 2014 State Energy Efficiency Scorecard, October 2014, page 73.

barriers to consumers and businesses making cost-effective efficiency investments.”⁴ The scorecard also attributes financial incentives to raising consumer awareness, encouraging more active marketing of these products and encouraging manufactures to innovate.

In the 2014 State Energy Efficiency Scorecard, Oregon was ranked #3, up from #4 in 2013. The presence or absence of tax credits alone does not create a tipping point for the overall health of a state’s energy efficiency rank. Tax credits are part of an overall portfolio of market interventions to achieve energy efficiency targets. In 2014, the following states offered tax credits or exemptions:

State	2014 Scorecard Rank
California	2
Oregon	3
Connecticut	6
New York	7
Michigan	12
Utah	23
Kentucky	33
Tennessee	38
South Carolina	42

5. Is use of a tax credit an effective and efficient way to achieve this policy goal? What are the administrative and compliance costs associated with this credit? Would a direct appropriation achieve the goal of this credit more efficiently?

The Residential Energy Tax Credit has been an effective and efficient way to achieve the policy goals. Since 1978, the program provided tax credits for devices that will save or displace enough energy in Oregon to serve about 400,000 households for one year as the result of issuing over 570,000 tax credits totaling approximately \$172 million. At a levelized cost of about \$5.74 per million Btu which is comparable to other programs in the region.

The administrative and compliance costs associated with the credit derive from the processing of applications for tax credits. ODOE’s approximate costs for administering the RETC in 2014 were \$474,000 during which time ODOE processed over 15,000 applications and issued about \$18,000,000 in tax credit certificates. The administrative cost to the run the program is about 2.5 percent of the total program costs funded through a combination of Federal Funds from a U.S. Department of Energy grant and funds from the Energy Supplier Assessment. ODOE is also utilizing a federal grant to convert the application process for solar photovoltaic systems from a paper process to an online platform reducing the administrative costs for contractors, homeowners and ODOE staff.

⁴ American Council for an Energy-Efficient Economy, The 2014 State Energy Efficiency Scorecard, October 2014, page 73.

A direct appropriation would provide RETC applicants a cash incentive instead of a tax credit. This could increase the costs of administering the program by requiring ODOE to issue cash incentives instead of postcard with a tax credit amount. However a cash incentive would simplify the process for RETC applicants, eliminating the need for a pass-through option and reducing the delay between the transaction and the receipt of the credit, which can increase the value of the incentive without increasing the cost.

6. What other incentives (including state or local subsidies, federal tax expenditures or subsidies) are available that attempt to achieve a similar policy goal?

There are several other complimentary programs that cover all or portions of the equipment that the Residential Energy Tax Credit covers. For eligible devices under the RETC program there are federal incentives for some devices, along with the Energy Trust of Oregon and Bonneville Power Administration providing incentives as shown on Attachment 2. The federal tax credit for solar water heating, solar photovoltaics, wind, fuel cells and geothermal heat pumps is scheduled to expire on Dec. 31, 2016.

7. Could this credit be modified to make it more effective and/or efficient? If so, how?

The Oregon Department of Energy proposes HB 2447A to make the Residential Energy Tax Credit program more effective and efficient. HB 2447A amends the program to place a 50 percent cost cap on all category one devices and expands ODOE's rulemaking authority to adjust incentive amounts based on market conditions.

For example, ODOE saw an increase in savings and incentives for ductless heat pumps in 2013 and 2014. As the devices become more prevalent in the market, homeowners will need less incentive to influence their energy efficiency buying decision. As the market matures, ODOE would reduce the incentive.

HB 2447A would also extend the RETC program's sunset to make the program more effective and efficient by providing stability and continuity in the marketplace for homeowners, contractors, other incentive programs and ODOE staff.

Attachment 1: Residential Energy Tax Credit

Residential Energy Tax Credit

Calendar Year	# Applications Received	Amount of Tax Credits Issued	First Year Energy Savings or Generation *					Total First Year Energy Savings or Generation*
			kWh Savings	Therm Savings	Oil Gallons	Gas Gallons Saved	Gas Gallons Displaced	in MMBtus
2010	76,917	\$20,174,255	27,557,750	981,533	6,832	233,022	1,637	222,489
2011	55,225	\$16,192,306	22,970,179	757,439	5,078	37,073	2,182	159,753
2012	21,927	\$13,862,679	13,384,617	363,967	2,542	72,099	27,821	94,922
2013	11,208	\$10,375,498	12,688,810	234,186	909	894	32,185	70,987
2014	15,436	\$18,320,937	22,712,544	255,321	1,786	551	76,916	112,981

*Energy savings estimated for first year, devices have a life span of 10-20 years.

Data from RETC All Annual Master 2013 Final, August 21, 2014 and Draft 2014 All Annual Master 2014, February 12, 2015.

Attachment 2: Residential Energy Tax Credits and Other Available Incentives

The Residential Energy Tax Credit (RETC) offers Oregon homeowners a tax credit for energy conservation and renewable energy resource development projects. Most of these projects are also eligible for incentives from the Bonneville Power Administration or Energy Trust of Oregon. The chart below shows the average or typical incentives available and the percentage of the conservation device or renewable project costs paid for by incentives.

	Average cost in 2013 per RETC application	Estimated Average 2015 tax credit	Average RETC as % of device or renewable project cost	BPA 2014 average or typical incentive	% of cost covered if BPA+RETC	Energy Trust of Oregon 2014 average or typical incentive	% of cost covered if ETO+RETC
Electric heat pump water heater	\$ 1,094	\$ 624	57%	\$ 300	84%	\$ 383	92%
Tankless gas water heater	\$ 2,269	\$ 241	11%	N/A		N/A	
Storage gas water heater*	\$ 699	\$ 175	25%	N/A		\$ 125	43%
Direct vent gas fireplace*	\$ 2,500	\$ 350	14%	N/A		\$ 550	36%
Gas furnace	\$ 3,385	\$ 401	12%	N/A		\$ 492	26%
Air-source ducted heat pump	\$ 6,130	\$ 512	8%	\$ 1,000	25%	\$ 775	21%
Ductless heat pump (mini-split)	\$ 3,487	\$ 933	27%	\$ 1,000	55%	\$ 1,000	55%
Duct Sealing (in unconditioned spaces)**	\$ 1,050	\$ 250	24%	\$ 250	48%	N/A	
Whole house ventilation (HRV/ERV)	\$ 3,424	\$ 375	11%	N/A		N/A	
Geothermal heat pump	\$ 17,473	\$ 706	4%	\$ 3,000	21%	N/A	
Wood and pellet stove	\$ 2,504	\$ 302	12%	N/A		N/A	
Solar Space Heating	\$ 10,875	\$ 1,439	13%	N/A		N/A	
Solar Water Heating	\$ 10,465	\$1,388	13%	N/A		N/A	
Alternative fuel charging station	\$ 1,288	\$ 303	24%	N/A		N/A	
Solar pool/spa heating	\$ 4,996	\$ 1,339	27%	N/A		N/A	
Solar electric (photovoltaic)	\$ 23,447	\$ 5,888	25%	N/A		\$ 8,250	60%
Wind system	none	\$ 6,000	n/a	N/A		N/A	
Fuel cell	none	\$ 6,000	n/a	N/A		N/A	

* New measure 2015, cost estimated

** The duct sealing incentive was reduced from \$460 to \$250 starting Jan. 1, 2015, based on updated energy savings. In 2013, the tax credit equaled about 43% of the duct sealing costs. With the reduced tax credit for 2015, the duct sealing tax credit will equal about 24% of the duct sealing costs.