

PUBLIC UTILITY COMMISSION OF OREGON
 STAFF REPORT
 PUBLIC MEETING DATE: April 14, 2015

REGULAR X CONSENT _____ EFFECTIVE DATE _____ N/A _____

DATE: April 1, 2015

TO: Public Utility Commission

FROM: Jason R. Salmi Klotz *JK*

THROUGH: Jason Eisdorfer and Aster Adams *E for AA*

SUBJECT: ENERGY TRUST OF OREGON: (Docket No. UM 1622) Request approval of incentive cap proposals submitted by Energy Trust developed to address Commission guidelines issued in Order No.14-332.

STAFF RECOMMENDATION:

The Oregon Public Utility Commission (PUC or Commission) grant approval of Incentive Cap Concept 1 Option 2 and Inceptive Cap Concept 2 found in Appendix B and as modified by Staff for all of Energy Trust of Oregon's (Energy Trust or ETO) service territory with exception to the Salem area as outlined in Northwest Natural (NWN)'s Action Item 2 (a)(iv) acknowledged by the Commission Order No. 15-064 in Docket LC 60.¹ Within the Salem area the affected programs will remain unmodified and continue as currently offered until NWN makes a determination of need as required in Docket LC 60.

DISCUSSION:

Issue:

On August 2, 2012, the Energy Trust of Oregon requested exceptions to the Oregon Public Utility Commission's cost effectiveness guidelines spelled out in Commission Order No. 94-590 in Docket UM 551 for certain gas energy efficiency measures. On

¹ Continue the pre-construction phase of the South Salem Feeder Project (e.g., studies, permitting, etc.) and conduct a Request for Proposal (RFP) for Recallable Agreements in the Salem load center. Provide the Commission with the results of additional analysis (e.g., results of RFP, accelerated DSM analysis, future load growth specific to the Salem load center) related to the South Salem Feeder Project prior to moving beyond the pre-construction phase of the project. While the studies are being undertaken, the Energy Trust of Oregon (ETO) will maintain the current energy efficiency programs in the Salem area. Order No. 15-064 at 2-3.

October 18, 2012, the Commission approved those exceptions in Order No. 12-394 for a time period of two years, until October 18, 2014.

On November 12, 2012, the Energy Trust submitted a second request for exceptions to the Commission's cost effectiveness guidelines for additional gas efficiency measures. After review, Staff requested that Energy Trust withdraw its second request and Staff recommended the Commission grant Energy Trust an exception from the current cost effectiveness guidelines for *all* gas efficiency measures and programs starting July 2, 2013, and ending October 18, 2014. In Order No. 13-256, the Commission adopted Staff's recommendations outlined below:

1. *During the exception period between July 2, 2013, and October 18, 2014, the Energy Trust should take active steps to make its gas programs as cost effective as possible. Energy Trust should also develop a plan to modify or eliminate measures that are: (a) clearly not cost effective now, (b) not likely to be cost effective in the future, or (c) do not meet the exception criteria set forth in Order No. 94-590.*

2. *The Energy Trust should submit a report (Report) to Commission Staff by July 1, 2014, and provide an analysis of their best estimate benefit to cost ratios (BCRs) from a utility and societal perspective, for all measures and programs where BCRs are close to or less than one. Energy Trust shall indicate the projected achievable savings of each measure and program. For measures and programs with societal benefit/cost ratios of less than one, Energy Trust shall identify where measures and programs:*
 - a. *Produce significant non-quantifiable non-energy benefits*
 - b. *May lead to market transformation and reduced costs*
 - c. *The measure is needed for consistency with other DSM programs in the region*
 - d. *Keeping the measure helps to increase participation in a cost-effective program*
 - e. *The package of measures cannot be changed frequently, and the measure will be cost-effective during the period the program is offered*
 - f. *The pilot or program is included in a pilot or research project*
 - g. *The measure is required by law or is consistent with Commission policy and/or direction*

By July 1, 2014, Energy Trust should propose which programs and measures to continue and which to discontinue and provide a rationale for doing so.

Staff indicated they would consider Energy Trust's proposal and parties' comments and make a recommendation to the Commission to be considered at or before the first

public meeting in October 2014. The Commission would then make a determination regarding gas efficiency cost effectiveness by October 18, 2014.

On September 30, 2014 the Commission granted cost effectiveness exceptions to a series of measures found in Appendix A of Commission Order No. 14-332, entered on October 1, 2014, and corrected by Errata Order on October 3, 2014. Appendix A attached to this memorandum contains a complete list of the measures for which Energy Trust requested exceptions, with Staffs final recommendations which were adopted by Order No. 14-332.

Order No. 14-332 also indicated that the Commission “is open to considering the idea of an incentive cap proposal.” In response to this opening, Clean Energy Works convened a meeting of interested stakeholders. Energy Trust and others attended this meeting and several interested stakeholder workgroup meetings that followed between November 2014 and January 2015. In addition, on January 14, 2015, the Commission Staff hosted a stakeholder workshop to discuss incentive cap concepts.

On February 19, 2015, Energy Trust filed in UM 1622 two incentive cap concepts which provide approaches to maintain support for floor and wall insulation. These incentive cap concepts were the result of the stakeholder collaboration. Incentive Cap Concept 1 would continue these incentives for renters and moderate income households. Incentive Cap Concept 2 would offer the incentives to all housing types, not just renters and multifamily, when wall and/or floor insulation measures are installed in combination with ceiling insulation. Energy Trust notes that each concept could be implemented independently or in parallel. A copy of the incentive cap concepts submitted by Energy Trust can be found in Appendix B.

Applicable Statutes, Rule and Orders:

Below is a summary of key statutes, rules, and orders applicable to this docket.

Oregon Revised Statute (ORS) 469.633 requires investor owned utilities (IOUs) to have an approved residential energy conservation programs that a) makes available to all residential customers information about energy conservation measures and available financing, and b) provide within 60 days assistance and advice about ways to save energy, including an energy audit.²

OAR 860-027-0310 defines conservation as any reduction in electric power or natural gas consumption as the result of increase in efficiency of energy use, production, or distribution. It specifies that conservation also includes cost effective fuel switching.

² Electric utilities that satisfy their public purpose obligations under ORS 757.612 are not required to perform energy audits. See also OAR 860-030-0000(1).

Fuel switching is defined as substitution of one type of energy or fuel for another. In OAR 860-027-0310 the definition of cost effective refers back to OAR 860-030-0010 where cost effectiveness is defined as relating to an energy conservation measure's cost, life cycle, and the cost of alternative energy facilities. It also specifies that an energy utility's cost-effectiveness calculation should be consistent with the utility's most recently acknowledged least-cost plan.

Below are excerpts from OAR 860-027-0310(2) where the Commission's policies for evaluating programs proposed by energy utilities are spelled out.

- Incentive:
 - Acquisition of least-cost resources should be the energy utility's most profitable course of action. An energy utility should have an incentive to acquire all least-cost resources, but it should not have an incentive to pursue conservation past the point at which it is no longer cost-effective.
 - The most important criterion for evaluating an incentive program is its effect on the energy utility's resource acquisition strategy.
 - An energy utility should have the incentive to acquire any resource at the minimum total cost.
- Predictability:
 - Program impacts should be predictable to all participants.

OAR 860-030-0005, which implements ORS 469.631 to 469.645 requires energy utilities to provide energy audits upon request by customers and states, in relevant part, that the initial utility audit must be without charge.

ORS 469.865 and OAR 860-030-0050 concern audits of commercial buildings. The energy utility is to have information available upon request about energy saving operations and maintenance measures for commercial buildings. The utility must have trained commercial building auditors available, capable of reviewing both simple and complex building systems.

- For buildings that use less than 4000 kWh of electricity or 200 therms of gas per month, the audit is to be on-site, and evaluate conservation measures including, but not limited to: operations and maintenance measures, simple automatic control systems, envelope weatherization, infiltration controls, and lighting system improvements.
- For more energy-intensive buildings, unless the auditor can substantiate that such an analysis is not necessary, the audit is to evaluate "complex" conservation measures, including sophisticated automatic control systems, furnace and boiler efficiency improvements, heat recovery devices, HVAC

system modifications, lighting system improvements, and solar water heaters or water heating heat pumps.

Commission Order No. 94-590 in Docket UM 551 specifies the following:

- The total resource cost test (TRC) must be used to determine if energy efficiency measures and programs are cost effective.³
- In cost effectiveness calculations a minimum value of ten percent should be used to account for risk and uncertainty.⁴
- A utility should calculate cost savings and other non-energy benefits if they are significant and there is a reasonable and practical way for calculating them.⁵
- Utilities should set demand-side acquisition targets to minimize total resource costs.⁶
- If a utility considers rate impacts in setting its demand-side targets, it should justify the decision in its least-cost plan (now called Integrated Resource Plan (IRP)).⁷
- Utilities should offer incentives to end-users sufficient to meet or exceed acknowledged least-cost plan conservation targets.⁸
- Measures that are not cost effective could be included in utility programs if it is demonstrated that:⁹
 - A. The measure produces significant non-quantifiable non energy benefits. In this case, the incentive payment should be set at no greater than the cost effective limit (defined as present value of avoided costs plus 10 percent) less the perceived value of bill savings, e.g. two years of bill savings
 - B. Inclusion of the measure will increase market acceptance and is expected to lead to reduced cost of the measure

³ UM 551 Order 94-590, response to item 11 and 12 on page 14

⁴ Ibid

⁵ UM 551 Order 94-590, response to item 11 and 12 on page 15

⁶ Ibid

⁷ Ibid

⁸ Ibid

⁹ UM 551 Order 94-590, response to item 13 on page 18

- C. The measure is included for consistency with other DSM programs in the region
 - D. Inclusion of the measure helps to increase participation in a cost effective program
 - E. The package of measures cannot be changed frequently and the measure will be cost effective during the period the program is offered
 - F. The measure or package of measures is included in a pilot or research project intended to be offered to a limited number of customers
 - G. The measure is required by law or is consistent with Commission policy and/or direction
- The conditions above apply both to measures and programs with the exception of Item D.¹⁰
 - The utility or another party (i.e. Energy Trust) should show that one or more of these factors offsets the likely costs associated with applying measures that are not cost-effective.¹¹
 - The present value of measurement and evaluation costs should be levelized over the expected program life for TRC calculations.¹²
 - Utilities lost revenue should not be included in the calculation of the TRC, because they represent transfer payments from consumers.¹³
 - Demand-side resources can provide the utility with increased reliability before new resources are brought on line. The value of demand side resources is reasonably represented by the price of sold or purchased wholesale firm energy/commodity capacity.¹⁴

The Grant Agreement between the Energy Trust and the PUC entered into in December 2005, in Guidelines, subsection e., on page 14 states:

¹⁰ Ibid

¹¹ Ibid

¹² UM 551 Order No 94-590, response to Item 14 on page 19

¹³ UM 551 Order No 94-590, response to Item 15 on page 20

¹⁴ UM 551 Order No 94-590, response to Item 4 on page 6

Individual conservation programs will be designed to be cost-effective and will be independently evaluated on a regular basis. This guideline should not, however, restrict investment in pilot projects, educational programs, demonstrations, or similar endeavors.

Regarding administrative costs, the Grant Agreement in Guideline I states:

The costs of operating the Energy Trust will be reasonable and support efforts toward cost effectiveness. Costs of operating the Energy Trust will balance the lowest possible administrative costs with overall organizational effectiveness... Energy Trust will allocate administrative costs in a manner to avoid cross-subsidies between programs that are supported by the Funds and programs that are not.

Analysis:

Docket History

In its July 1, 2014, report, Energy Trust summarized steps it took to make gas programs as cost effective as possible. Energy Trust also provided an analysis of the estimated BCRs for all its remaining gas programs and measures where BCRs are close to or less than 1.0 and the corresponding projected achievable savings for each gas measure and program. Energy Trust also identified programs and measures it proposes to continue and those to discontinue, based on specific exception criteria defined in UM 551, Order No. 94-590.

In addition to those items required by the Commission in Order No. 13-256, Energy Trust also provided ideas for improving and streamlining the approval process for future exceptions and proposed that the hedge or risk mitigation value of energy efficiency be considered for gas measures as it currently is for electric measures.

Per Commission direction, Energy Trust took several actions, starting in 2012 and continuing through today, to improve cost effectiveness of gas programs. These actions include:

- Removed the Performance Tested Comfort Systems duct sealing initiatives from existing homes (2013).
- Continued a prescriptive duct sealing pilot (2012-2013), which was then cancelled based on results to date (2014).
- Reworked eligibility criteria for residential ceiling/attic and floor insulation (2013).
- Eliminated incentives for custom commercial gas measures that have a TRC of less than 0.7 under new avoided costs (2013).

- Removed rooftop heating, ventilation, and air conditioning (HVAC) unit tune ups (2014).
- Eliminated a prescriptive duct sealing pilot for Existing Homes (2014).
- Eliminated custom gas measures with TRC BCRs of less than 0.7 (2013).

When approving some program exceptions with Order No. 14-332, in docket UM 1622 the Commission stated an openness to considering the idea of an incentive cap proposal, especially for moderate income and multifamily customers that include; (a) meaningful reduction in incentives; (b) strong protocols to minimize free riders, and (c) a design that favors lowest cost, highest saving measures.¹⁵

Energy Trust's Proposal

On February 19, 2015, the Energy Trust, on behalf of interested stakeholders, filed two proposals meant to meet the Commission's incentive cap criteria. Energy Trust named these proposals Incentive Concept 1 and Incentive Concept 2.

Both proposals were developed through a stakeholder process led originally by Clean Energy Works and Energy Trust. The stakeholders met several times between November 2014 and January 2015. A draft concept of the two proposals was shared with Commission staff and a broader group of stakeholders during a Commission led stakeholder discussion on January 14, 2015.

The incentive cap proposals target both the type of residential customer noted in Order No. 14-332 as well as attempting to address the design principles of: (1) targeted toward moderate income and multi-family customers, (2) meaningful reduction in incentives, (3) strong protocols to minimize free riders, and (4) a design that favors lowest cost, highest saving measures. Moderate income, multi-family, and rental properties customer segments are less likely to have disposable income to be able to invest in energy efficiency projects yet would benefit significantly from resulting energy bill savings. Considered hard to reach, these customers present a low risk of free ridership to ratepayer programs and therefore also meet one of the listed design elements.

Wall and floor insulation measures, when combined with ceiling insulation can significantly improve the comfort of the home and do provide additional energy savings. Although these measures are no longer cost effective, from a total resource cost perspective, if a customer in this target market wishes to invest in additional energy savings measures but is unable to fully cover the cost, this program could make the

¹⁵ Order No. 14-332 at 1.

difference. Without an incentive, the likelihood of these measures being installed and providing long term savings (45 years) is low for these market segments.

In summary, the proposal offers targeted assistance to a segment of ratepayers for which the offer is a meaningful driver to acquire long term energy savings. The relatively small scale of the market limits the total investment. The incentive cap concepts provide approaches to maintain support for floor and wall insulation. Incentive Cap Concept 1 would continue these incentives for renters and moderate income households. Incentive Cap Concept 2 would offer incentives to all housing types, not just renters and multifamily, when wall and floor measures are installed in combination with ceiling insulation.

Incentive Cap Concept 1

Incentive Cap Concept 1 is meant to align with existing program pathways to maintain floor and wall insulation incentives for income qualified customers and rental properties. Through this Incentive Cap Concept , moderate income customers, single/multifamily (1-4 units) rental properties and participants in the MPower program for larger public assisted multifamily units will be able to access incentives for additional weatherization measures.

Under this incentive cap proposal, floor and/or wall insulation incentives would be offered to qualified customer groups when ceiling insulation is installed or when the existing ceiling insulation level meets a defined threshold. Concept 1 offers two options; 1) reduce existing incentive levels by 30 percent or 2) continue existing incentive levels for wall and floor insulation.

Incentive Cap Concept 2

Stakeholder's proposal for Incentive Cap Concept 2 envisions reaching a broader set of customers than under Incentive Cap Concept 1. Under Incentive Cap Concept 2, when a customer installs ceiling insulation, they would be eligible for an incentive if they also install floor and wall insulation. The incentive for wall and floor insulation would be \$150 per measure. Customers with ceiling insulation of R13 or less will continue to receive the current incentive of \$.025/sf for added ceiling insulation. Further modification includes limiting ceiling incentive eligibility to customers who have an existing ceiling insulation condition of less than R18 but more than R13.¹⁶ These customers would receive a \$100 incentive.

¹⁶ Insulation materials have tiny pockets of trapped air. These pockets resist the transfer of heat through material. The ability of insulation to slow the transfer of heat is measured in R-values. The higher the R-value, the better the insulation material's ability to resist the flow of heat through it.

Additionally, Energy Trust's filing notes that Incentive Cap Concept 1 and Incentive Cap Concept 2 may be implemented independently or in parallel.

	Incentive Cap Concept 1 Option 1	Incentive Cap Concept 1 Option 2	Incentive Cap Concept 2
Customer Type	Moderate Income and Renters	Moderate Income and Renters	All other customers
Incentive Offered Ceiling	\$0.25/sf Avg. Incentive - \$560	\$0.25/sf Avg. Incentive - \$560	\$100 (Ceiling insulation level must be between R-13-R18/Or If Ceiling is currently R-13 or less \$0.25/sf
Floor Insulation	\$0.30/sf Avg. Incentive- \$367	\$0.40/sf Avg. Incentive - \$503	\$150
Wall Insulation	\$0.40/sf Avg. Incentive -\$367	\$0.50/sf Avg. Incentive \$459	\$150
Reduction in annual expenditure for floor and wall insulation	30%	N/A	55%
Ceiling insulation requirement	R-18 or less to be eligible for Ceiling, floor and wall incentive. If R-19 or great only floor and wall insulation incentive offered	R-18 or less to be eligible for Ceiling, floor and wall incentive. If R-19 or great only floor and wall insulation incentive offered	Ceiling insulation must be between R-13-R18 to receive incentive for ceiling insulation but otherwise all customers may receive floor and wall insulation incentives.
Average project savings (therms)	66.8 – Ceiling 47.7 – Wall 52.8 -- Floor	66.8 – Ceiling 47.7 – Wall 52.8 - Floor	52.8 -- Ceiling 53.7 -- Wall 48.5 -- Floor
Average Project Costs	\$1,169 – Ceiling \$1,390 – Wall \$1,822 -- Floor	\$1,169 – Ceiling \$1,390 – Wall \$1,822 -- Floor	\$1,374 -- Ceiling \$1,717 -- Wall \$1,664 -- Floor

Staff's Recommendations

Based on Energy Trust's submittal and comments received from stakeholders both written and submitted to the record formally and those comments received by staff during publically noticed stakeholder meetings, Staff recommends adoption of Energy Trust's Incentive Cap Concept 1 Option 2 and Incentive Cap Concept 2 proposal with

an additional requirement to further address free rider concerns; program participants with single family homes who do not qualify as moderate income, or renters must undertake ceiling insulation measures to qualify for floor and wall insulation. Further, Energy Trust should report back to Staff if the utility cost test for the combined fuel program is in danger of or has fallen below 1.0.

Additionally, staff notes that the Commission required Northwest Natural to explore deferral of a large capital expenditure in the Salem area through additional targeted energy efficiency investment within Northwest Natural's Salem, Oregon service territory. In docket LC 60, Northwest Natural's Integrated Resource Plan, the Commission approved continuation of all energy efficiency program offerings in the Salem area while additional analysis related to accelerated DSM and load growth are undertaken. Therefore, Staff's recommendation regarding Energy Trust's proposal here to adopt an incentive cap will not apply to program activity in Northwest Natural's Salem service territory. Staff believes this is necessary to assure that all available energy efficiency opportunities are explored by Northwest Natural and Energy Trust. Given the unique circumstances of Northwest Natural's use of energy efficiency to not only cost effectively serve demand but also defray a significant capital infrastructure expenditure, existing energy efficiency programs which were granted exceptions to the Commission's traditional benefit cost analysis must continue to be made available as tools for Northwest Natural's unique undertaking.

Rationale for Staff Recommendation

Addressing Commission Direction in Order No. 14-332

The Commission in Order No. 14-332 noted its openness to considering an incentive cap proposal with special consideration for moderate income and multifamily customers that includes; (a) meaningful reduction in incentives; (b) strong protocols to minimize free riders; and (c) a design that favors lowest cost, highest savings measures. Staff finds that only the combination of submitted Incentive Cap Concept 1 Option 2 and Incentive Cap Concept 2 proposed by Energy Trust addresses all parts of the Commission's statement. The construction of the Commission language in Order No. 14-332 leads staff to believe that the Commission was open to not only an incentive cap proposal for moderate income customers but all customers segments taking service from these programs as long as the proposal includes the three elements described above.

Addressing Criteria A & B – Reduction in Incentives and Minimizing Free Riders

Within Incentive Cap Concept 1 Energy Trust is proposing two incentive options for the Commission to consider, continuation of current incentive levels (Option 2) or a lowering of incentive levels by 30 percent (Option 1). Staff contends that lowering an incentive within this market is not a proper action to address free rider concerns and would only exacerbate the economic challenge of energy efficiency investment for this group of customers. Arguably the Commission could approve Incentive Cap Concept 1 Option 1 as this proposal has meaningful reductions in incentives, thereby reduces overall costs.

However, by lowering the incentives to this market segment the Commission would not be addressing free riders, as those that could otherwise afford to undertake the energy savings measure would still have an incentive available. Yet for those within this market segment that truly need the incentive to lower the upfront cost of installing the measure, lowering the incentive would make program participation more difficult. However, if the Commission were to approve only Incentive Cap Concept 1 Option 2 free-ridership would not be as directly addressed if the Commission were to also approve Incentive Cap Concept 2. Because Incentive Cap Concept 1 Option 2 is not a cap on incentive levels, nor a meaningful reduction in incentives, for Energy Trust's proposal to meet the Commission criteria Incentive Cap Concept 2 would also need to be approved.

With approval of both Incentive Cap Concept 1 Option 2 and Incentive Cap Concept 2 the Commission can assure continuation of insulation measure program offerings to moderate income customers and renters, and potentially reach more of these customers while also capturing the cost savings obtained by lowering the incentive as proposed in Incentive Cap Concept 2. By lowering the incentive for all other customers installing weatherization measures the proposal outlined in Incentive Cap Concept 2 helps to address free rider concerns and therefore must arguably be taken as a whole inclusive of Incentive Cap Concepts 1 Option 2. By lowering the incentive to the market segment with most free riders, the Commission is lowering the overall cost of free ridership to ratepayers while increasing the overall value received, saving acquired, for the incentive given.

To further assure free rider concerns are addressed by approval of both Incentive Cap Concept 1 Option 2 and Incentive Cap Concept 2 staff recommends adding the following requirements. First, program participants who do not qualify as moderate income, renters or multifamily, may not receive a floor and wall insulation incentive unless they have undertaken ceiling insulation measures. Second, Energy Trust should report back to Staff if the utility cost test for the combined fuel program is in danger of or has fallen below 1.0.

Addressing Criteria C - Lowest Cost, Highest Saving Measures

Both Incentive Cap Concept 1 and Incentive Cap Concept 2 base eligibility for incentives on a newly adjusted threshold level of current home insulation.

The criterion to design a proposal “that favors highest savings lowest cost measures” is addressed, in part, as the proposal requires participants to first install ceiling insulation. To be eligible for incentives, existing ceiling insulation levels must meet either an R-factor threshold level or be within an existing R-factor bandwidth. Under Incentive Cap Concept 1 moderate income customers whose existing ceiling insulation is R-18 or less would be eligible for ceiling, wall, and floor insulation. However, if these customers current ceiling insulation was R-19 or greater Energy Trust would only offer incentives for floor and wall insulation. Energy Trust’s Incentive Cap Concept 1 is attempting to reach a broader potential market than is currently capable under current program design. Currently, if a customer has greater than R-13 insulation values they are not eligible for ceiling insulation incentives. Under the new Incentive Cap Concept 1 more moderate income households would be eligible for ceiling insulation incentives.

Similarly under Incentive Cap Concept 2 only those customers whose current ceiling insulation levels are between R-13 and R-18 would be eligible to receive a \$100 ceiling insulation incentive. The use of a threshold level of ceiling insulation as a criterion for qualification of incentives allows Energy Trust to target savings measures that represent the greatest possible savings per incentive dollar spent. Incentive Cap Concept 2, in part, attempts to address a service gap created in 2013 when measures were discontinued for customers whose ceiling insulation was greater than R-13. Currently, to qualify for Energy Trust ceiling insulation incentive one’s current ceiling insulation must be R-13 or lower. Under Energy Trust’s Incentive Cap Concept 2 customers with existing ceiling insulation of R-13 through R-18 would be eligible for a \$100 ceiling insulation incentive if they also install floor or wall insulation. This segment of the market served under Incentive Cap Concept 2 would receive a fixed floor and wall insulation incentive (\$150 per measure) once their ceiling insulation levels reached the appropriate threshold. The proposed incentive structure allows Energy Trust and trade allies to reach more customers than is currently allowed, at a lower overall cost to ratepayers prior to the 2013 program adjustment. While the incentive seems modest Energy Trust and the stakeholders believe that it represents enough of an endorsement to incent action by the customer.

Short Term Market Pressure and Long Term Savings

Building insulation measures have very long measure lives. In the present case the measures considered here are expected to provide savings to homeowners and

ratepayers for nearly 45 years. Most experts believe natural gas costs are at an unprecedented low in large part due to the domestic supplies, this phenomenon is not expect to remain flat and stable over a long period.

Summary of Staff Recommendation:

Staff contends that only approval of Incentive Cap Concept 1 Option 2 and Incentive Cap Concept 2 meets all the four criteria outlined by the Commission in Order No. 14-332. As a stand-alone proposal Incentive Cap Concept 1 does not address the four criteria set by the Commission in Order No. 14-332. Incentive Cap Concept 2 does not respond to the Commission's interest in crafting an incentive cap that includes moderate income customers and minimizes free riders. However, taken together the two proposals address the criteria set by the Commission, increase program utility cost test numbers, and create a path for continuation of insulation measures during a short term market period where the cost effectiveness of energy efficiency measures is being challenged by historically lower natural gas prices. To further assure free rider concerns are addressed by approval of both Incentive Cap Concept 1 Option 2 and Incentive Cap Concept 2 staff recommends adding the following requirements. First, program participants who do not qualify as moderate income, renters or multifamily, may not receive a floor and wall insulation incentive unless they have undertaken ceiling insulation measure. Second, Energy Trust should report back to Staff if the utility cost test for the combined fuel program is in danger of or has fallen below 1.0. Therefore, staff recommends approval of Energy Trust's proposed Incentive Cap 1 Option 2 and Incentive Cap Concept 2.

PROPOSED COMMISSION MOTION:

The Commission grant cost effectiveness exceptions to those measures as outlined in Energy Trust's proposed Incentive Cap Concept 1 Option 2 and Incentive Cap Concept 2 as modified by Staff in its recommendations. Allow insulation measure programs in the Salem area to continue past the heating season cut- off date of April 30th to allow Northwest Natural and Energy Trust to explore a full suite of energy efficiency measures that may facilitate the deferment of capital investments.

Appendix B - Staff's recommendations regarding items where Energy Trust is proposing cost effectiveness exceptions under UM 551

<i>Measure</i>	<i>TRC BCR</i>	<i>UCT BCR</i>	<i>Energy Trust recommendation</i>	<i>Staff recommendation:</i>
Single family residential ceiling insulation	0.5 - 0.7	2.2	Non-energy benefits exist, new online payback estimator may lead to reduced measure cost. Proposed as part of core program	Exception - UM 551 Criteria A
Single family wall insulation	0.2 - 0.3	1.5		No exception
Single family floor insulation	0.2 - 0.3	1.2		No exception
Single family duct insulation	0.2	1		No exception
Air sealing as added requirement for ceiling insulation	N/A	N/A	UM 551 Criteria F -Pilot	Exception - UM 551 Criteria F
Manufactured home air sealing	0.5	0.5	Exception C - Majority of manufactured homes are electric which are CE - keep gas for consistency	Exception - UM 551 Criteria C
Manufactured home duct sealing	0.4	0.4	Exception C - Majority of manufactured homes are electric which are CE - keep gas for consistency	Exception - UM 551 Criteria C
0.67 & 0.70 EF Water Heaters	0.6	1	Criteria B - Encourage market adoption and reduce cost	Exception - UM 551 Criteria B
Solar water heating	0.12	1	Criteria A - Non-energy benefits	No exception
Spa covers	0.5	1.6	Criteria C - most spas are electric which are cost effective; maintain for consistency'	Exception - UM 551 Criteria C
New Homes Builder Option Package with 0.67 water heater	0.6	1.1	Criteria B and C	Exception - UM 551 Criteria B and C

Select Customer Commercial Projects	0.7 - 0.94	>1	Site Specific exceptions	Retain - where TRC / UCT > 1 or entertain specific exception request
Multifamily ceiling insulation	0.4	1.2	Non-energy benefits exist. Proposed as part of core program	Approve based on NEBs and consistency with single family
Multifamily wall insulation	0.4	1.3		No exception
Multifamily floor insulation	0.3	1.1		No exception
Multifamily duct insulation	0.3	1		No exception
Multifamily windows	0.2	1.3	Criteria A - Significant non-energy benefits; surveys show minimal free ridership	No exception
Commercial vent hoods w/ VSDs (2 and 2.5 HP)	0.2	>1	Criteria D - will increase participation in a cost effective program	No exception
New commercial buildings condensing tank water heater	0.4	1.8	ETO moving to a tailored approach and will only do those that are cost effective. Request an exception for schools under criteria B	Support removing lowest savings buildings from offering. Support UM 551 Criteria B for schools
New commercial buildings condensing unit heater for non-multifamily	0.5	>1	Rework and only keep where Cost Effective	Support reworking and keeping only where cost effective
New commercial buildings market solutions packages	0.6 - 0.8	1 - 4.5	Multiple UM 551 criteria - A ,B, D, and E	Support exceptions based on UM 551 Criteria A, B, D, and E

Appendix B Incentive Cap Concepts Proposed by Energy Trust of Oregon

The following Incentive Cap Concepts provide approaches to maintain support for floor and wall insulation. Concept would continue these incentives for renters and moderate income households. Concept two would offer the incentives to all housing types, not just renters and multifamily, when wall and floor measures are installed in combination with ceiling insulation. Each concept could be implemented independently or in parallel.

Incentive Cap Concept 1: Weatherization for Moderate Income Customers, Low Income Multifamily, and Rental

In brief: Through the Incentive Cap Concept 1, moderate income customers, single/multifamily (1-4 units) rental properties and participants in the MPower program for larger public assisted multifamily units will be able to access incentives for additional weatherization measures.

Description: The Incentive Cap Concept 1 would be aligned with existing program pathways to maintain floor and wall insulation incentives for income qualified customers and rental properties, through:

- MPOWER—subject to a combination of income and property ownership criteria
- Savings Within Reach—subject to income criteria
- Rental Property projects—owners of rental properties

Under this proposal, floor and/or wall insulation incentives will be offered to qualified customer groups when ceiling insulation is installed or when the existing ceiling insulation level meets a defined threshold (i.e., existing condition is R-19 or greater).

- Example 1: a moderate income homeowner or rental property owner who has an existing-condition of R-18 or less in the ceiling would qualify for ceiling insulation incentives, as well as floor and wall insulation incentives.
- Example 2: if the moderate income home already has R-19 or greater insulation levels, Energy Trust would not offer an incentive for ceiling insulation, but will offer the incentive for floor and wall.
 - Currently, ceiling insulation incentives are not available for homes that already have R-13 or greater insulation levels. This proposal adjusts the qualification criteria to R-19 so that homes can select the potentially more impactful ceiling insulation along with wall and floor.

- Add incentive through Incentive Cap for floor/wall insulation
 - Option 1—current incentive reduced by 30%¹⁷
 - Option 2—incentive level maintained

Table 1- Proposed Incentives Cap Concept 1 for Moderate Income, Multifamily, and MPower

Measure	2014 Incentive	2015 Incentive Cap Option 1*	2015 Incentive Cap Option 2
Ceiling Insulation	\$0.25/sf	\$0.25/sf	\$0.25/sf
Floor insulation	\$0.40/sf	\$0.30/sf	\$0.40/sf
Wall insulation	\$0.50/sf	\$0.40/sf	\$0.50/sf

*Note: Adjustment under option 1 is not precisely 30% but rounded consistent with existing practices for clarity.

Incentive Cap Concept 2: For weatherization markets not eligible for option 1- floor and wall insulation eligible, when installed in conjunction with ceiling insulation

In brief: As of January 1, 2015 there is a \$100 incentive available when a customer installs two or more non-instant savings measures¹⁸. Through the Incentive Cap Concept 2, the incentive would be modified solely for weatherization projects to create a capped incentive for wall and floor insulation, as well as expanding ceiling insulation qualification criteria.

Description: Through the Incentive Cap Concept 2, when a customer installs ceiling insulation, they would be eligible for an incentive if they also install floor or wall insulation, with the wall/floor incentive of \$150 per measure. Additionally, a customer who has an existing ceiling insulation condition of less than R18 but more than R13 (a qualification which currently does not receive an incentive, but did prior to 2013) would be eligible for a ceiling insulation incentive of \$100. Inclusion of these incentives will help achieve long-measure life savings and aligns with historical customer purchase patterns (see Table 2) where about 50% of ceiling insulation projects also included floor insulation, 43% included wall insulation and 19-24% included duct insulation with

¹⁷ 30% was selected to address OPUC's directive to reduce incentives. This level is intended to start the discussion. It increases difficulty for limited income households and landlords with split incentives to invest. Financing may moderate this barrier but not eliminate it. A level should be selected that balances the desire to serve limited income households with the desire to reduce expenditures on these measures.

¹⁸ Instant savings measures are efficient shower heads, aerators, and lights.

Energy Trust incentives. Customers with ceiling insulation of R-13 or less will continue to receive the current incentive of \$.25/sf for added ceiling insulation.

The capped incentive level for wall and floor insulation will be a significant reduction in average incentives paid for floor and wall insulation measures (see Table 3). In aggregate, this concept supports a reduction of approximately 55% of annual incentive expenditures for wall and floor insulation.

The multiple upgrade incentive cap can be available to any single-family or multi-family property (up to 4 units), regardless of income or property ownership. If the OPUC elects to support both Concepts 1 and 2, customers eligible for Concept 1 will likely take it due to higher incentives.

Table 2: Frequency of Floor or Wall Insulation installed within same year as attic insulation

Measure	2013 Count	%	2014 Count	%
Ceiling Insulation	1,583	100%	890	100%
Floor Insulation	841	53%	443	50%
Wall Insulation	685	43%	383	43%
Duct Insulation	377	24%	173	19%

Table 3: Average Floor or Wall Insulation Incentive compared to Incentive Cap Concept 2

Average Energy Trust Incentive (when installing attic insulation as well)	2015 Weatherization Incentive Cap (recommended)		
Measure	2013	2014	2015
Ceiling Insulation (R13-18)	\$288	N/A	\$100
Floor insulation	\$307	\$290	\$150
Wall insulation	\$231	\$226	\$150

Concept 1 Criteria Analysis:

Criteria 1: "...idea of an incentive cap proposal – especially for moderate income and multi-family customers ..."

Pros / Strengths:	Cons / Weaknesses / Considerations:
<ul style="list-style-type: none"> • Minimal impact to program delivery cost by leveraging existing program pathways • Expands weatherization opportunity for moderate income customers and multi-family customers/rental properties 	<ul style="list-style-type: none"> • Other weatherization: <ul style="list-style-type: none"> ○ Consideration of adding measures for qualified customers that bridge between what CAP agencies offer <ul style="list-style-type: none"> ▪ Storm windows ▪ Weather-stripping ▪ Air sealing

<ul style="list-style-type: none"> • Because of long paybacks, measures will have limited financial energy savings benefits to limited income customers. However, owners will enjoy increased comfort and enhanced capital assets in their home. Ownership of viable capital assets can be important to helping families leverage their way to a better life. • Lessees may enjoy increased comfort and lower energy costs through landlord investments. • Some rental properties may have a lower TRC due to leverage of state tax credits. 	<ul style="list-style-type: none"> ▪ Prescriptive duct sealing • Income criteria <ul style="list-style-type: none"> ○ Consider increasing the maximum income for Savings Within Reach eligibility • Landlords may increase rents if units are significantly upgraded, although it's possible increases could be offset by lower utility costs.
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Criteria 2: Meaningful reduction in incentives [relative to pre-UM1622]

<ul style="list-style-type: none"> • Recommends significant reduction in incentives and prioritization of ceiling insulation as most cost-effective measure • Reduced incentives may encourage contractors to offer leanest-possible prices to secure jobs. 	<ul style="list-style-type: none"> • Only modest potential reduction in TRC but maintains weatherization incentives in an underserved market • Those with lower incomes will likely need heftier incentives, not reduced, in order to act.
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Criteria 3: Strong protocols to minimize free riders

<ul style="list-style-type: none"> • Income criteria, property ownership type, and incentive eligibility criteria minimize market rate customer free ridership. 	<ul style="list-style-type: none"> • There aren't typically free riders in this market sector. Reducing the incentive further may adversely impact savings associated with this demographic. Option 2 would have the least impact on historical participation rates
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Criteria 4: A design that favors lowest cost, highest savings measures

<ul style="list-style-type: none"> • Ceiling insulation is the most cost-effective/highest savings insulation 	<ul style="list-style-type: none"> • ET will consider whether to require installation of instant savings measures
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measure. This design ensures that measure is prioritized prior to floor or wall insulation.	(shower heads, aerators, lights) when floor/wall insulation are installed to increase low/no cost savings within project
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Concept 2 Criteria Analysis:

Criteria 1: "...idea of an incentive cap proposal – especially for moderate income and multi-family customers ..."

Pros / Strengths:	Cons / Weaknesses / Considerations:
<ul style="list-style-type: none"> • Broadens the cap concept to more customers than concept one and maintains criteria to treat homes with savings potential. • Acquires energy savings at a lower UCT. • 	<ul style="list-style-type: none"> • This concept is available to all customers with qualifying projects. Moderate income and multifamily may choose between this incentive cap offer and one explicitly designed for that market segment.

Criteria 2: Meaningful reduction in incentives [relative to pre-UM1622]

<ul style="list-style-type: none"> • Recommended incentive level is significantly reduced from historical average incentive levels. 	<ul style="list-style-type: none"> • Consideration needs to be included to require a minimum square footage of area treated.
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Criteria 3: Strong protocols to minimize free riders

<ul style="list-style-type: none"> • Based on historical data, customers install floor/wall insulation about 50% of the time when attic is installed. Assumption that without incentives for floor/wall, this correlation would decline significantly. • Reported free rider rates are lower for multiple measure projects, further evidence supporting the idea that this approach may have fewer free riders than the program as a whole. 	<ul style="list-style-type: none"> •
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Criteria 4: A design that favors lowest cost, highest savings measures

<ul style="list-style-type: none">• Ceiling insulation is the most cost-effective/highest savings insulation measure. This design ensures that measure is prioritized prior to floor or wall insulation.	<ul style="list-style-type: none">• ET will consider whether to require installation of instant savings measures (shower heads, aerators, lights) when floor/wall insulation are installed to increase low/no cost savings within project.
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