ORDER NO. 14 332

ENTERED OCT 01 2014

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1622

In the Matter of ENERGY TRUST OF OREGON Request for Approval of Exceptions to Cost Effectiveness Guidelines.	ORDER

DISPOSITION: STAFF'S RECOMMENDATION ADOPTED

This order memorializes our decision, made and effective at the public meeting on September 30, 2014, to adopt Staff's recommendation, contained in the Staff Report attached as Appendix A, along with the following clarifications and additions:

(1) The current weatherization measures will continue through April 30, 2014;
(2) Staff is directed to report back in six months on the development of a hedge value for natural gas; and
(3) In six months, the Commission is open to considering the idea of an incentive cap proposal—especially for moderate income and multi-family customers—that includes the following elements:
   (a) Meaningful reduction in incentives;
   (b) Strong protocols to minimize free riders; and
   (c) A design that favors lowest cost, highest savings measures.

Dated this 1st day of Oct., 2014, at Salem, Oregon.

COMMISSIONER ACKERMAN WAS UNAVAILABLE FOR SIGNATURE

Susan K. Ackerman
Chair

John Savage
Commissioner

Stephen M. Bloom
Commissioner

A party may request rehearing or reconsideration of this order under ORS 756.561. A request for rehearing or reconsideration must be filed with the Commission within 60 days of the date of service of this order. The request must comply with the requirements in OAR 860-001-0720. A copy of the request must also be served on each party to the proceedings as provided in OAR 860-001-0180(2). A party may appeal this order by filing a petition for review with the Court of Appeals in compliance with ORS 183.480 through 183.484.

ORDER NO. 14 332

ITEM NO. 1

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: September 30, 2014

REGULAR X **CONSENT** ____ **EFFECTIVE DATE** ____ **N/A**

DATE: September 23, 2014

TO: Public Utility Commission

FROM: Juliet Johnson

THROUGH: Jason Eisdorfer and Aster Adams

SUBJECT: ENERGY TRUST OF OREGON: (Docket No. UM 1622) Request approval of exceptions to energy efficiency cost effectiveness guidelines.

STAFF RECOMMENDATION:

Commission grant cost effectiveness exceptions to those measures summarized in Appendix A and adopt Staff's recommendations outlined in this report.

DISCUSSION:

Issue:

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

Energy Trust filed the required report on July 1, 2014 in response to the PUC Order No. 13-256 in UM 1622. The first round of written comments was due July 24, 2014. Written comments were received by Cascade Natural Gas Company (Cascade), Clean Energy Works (CEW), Home Performance Guild of Oregon (HPG), NW Energy Coalition (NWEC), Northwest Energy Efficiency Council (NEEC), Northwest Natural Gas Company (NWN) and an interested member of the public. The first workshop was held on July 29, 2014. CUB provided verbal comments at the workshop on July 29, 2014. Staff released a draft public meeting memo for comment on August 13, 2014. A second workshop was held August 27, 2014, and parties submitted a second round of

comments on September 15, 2014. The filing center received comments from 26 parties on September 15, 2014.

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) provides within 60 days assistance and advice about ways to save energy, including an energy audit.[1]

Oregon Administrative Rules (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. 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.

[1] 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).

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 concerns 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.[2]

- In cost effectiveness calculations a minimum value of ten percent should be used to account for risk and uncertainty.[3]

- 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.[4]

- Utilities should set demand-side acquisition targets to minimize total resource costs.[5]

[2] UM 551 Order 94-590, response to item 11 and 12 on page 14
[3] Ibid
[4] UM 551 Order 94-590, response to item 11 and 12 on page 15
[5] Ibid

- 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)).[6]

- Utilities should offer incentives to end-users sufficient to meet or exceed acknowledged least-cost plan conservation targets.[7]

- Measures that are not cost effective could be included in utility programs if it is demonstrated that:[8]

  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

  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.[9]

[6] Ibid
[7] Ibid
[8] UM 551 Order 94-590, response to item 13 on page 18
[9] Ibid

- 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.[10]

- The present value of measurement and evaluation costs should be levelized over the expected program life for TRC calculations.[11]

- Utilities lost revenue should not be included in the calculation of the TRC, because they represent transfer payments from consumers.[12]

- 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.[13]

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

> *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.*

[10] Ibid
[11] UM 551 Order No 94-590, response to Item 14 on page 19
[12] UM 551 Order No 94-590, response to Item 15 on page 20
[13] UM 551 Order No 94-590, response to Item 4 on page 6

Analysis:

Energy Trust's Original Proposal

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).

Below is a list of measures and programs for which Energy Trust is seeking exceptions in this filing. Energy Trust provided rationale for each of the measures it proposes to keep based on the Commission Order No. 94-590:

- Single family residential ceiling insulation
- Single family wall insulation
- Single family floor insulation
- Single family duct insulation

- Air sealing as added requirement for ceiling insulation
- Manufactured home air sealing
- Manufactured home duct sealing
- 0.67 and 0.70 EF Water Heaters
- New Homes Builder Option Package with 0.67 water heater
- Solar water heating
- Spa covers
- Select Customer Commercial Projects
- Multifamily ceiling insulation
- Multifamily wall insulation
- Multifamily floor insulation
- Multifamily duct insulation
- Multifamily windows
- Commercial vent hoods with VSDs (2 and 2.5 HP)
- New commercial buildings condensing tank water heater
- New commercial buildings condensing unit heater for non-multifamily
- New commercial buildings market solutions packages

Energy Trust is proposing to remove the following measures:

- Whole home air sealing
- Duct sealing-already removed
- Office dishwashers
- Air to air heat exchangers in new buildings
- Demand control ventilation

The following measures were not originally cost effective, but they have been reworked and they are now cost effective:

- Condensing Tank Water Heater in low-use facilities
- Gas convection oven

Staff's Original Recommendations

Based on Energy Trust's original submittal and the first round of parties' comments, Staff created a draft public meeting memo and released it on August 13, 2014. Staff's draft memo, which is attached as Appendix A to this final memo contained recommendations on Energy Trust's original submittal.

In Energy Trust's filing and early in this docket, the idea of a core residential program was discussed. This concept is described in detail in Staff's draft memo in Appendix A. Staff does not recommend a core program approach be pursued for the reasons outlined in the August 13, 2014 memo. The idea of an incentive cap per residence for weatherization measures was discussed in Staff's draft memo. Staff is no longer recommending an incentive cap be pursued at this time.

In this final memo, Staff only addresses in detail those items that were subject to additional discussion in workshops and those items parties' addressed in their second round comments. For all the other items, Staff's recommendations are stated in the recommendations section of this memo and in the summary table found in Appendix B, but for those items that were not contested, the discussion is not reproduced in the body of this memo.

Summary of Parties' Second Round Comments

Application of TRC and UCT

At the August 27, 2014 public meeting and in written comments, the relationship between the TRC and UCT was a key point of discussion.

CUB believes that the TRC is an important part of the evaluation of energy efficiency, and that in some instances, the UCT may be preferable. For measures that are permanent and will be required at some point in the future in order to respond to climate change, such as wall insulation and air sealing, CUB believes that measures should be offered if the program passes the UCT. CUB asserts that if a long-term measure passes a UCT and is cost effective to the utility, and if the customer understands that the economic payback period is long but the comfort and greenhouse gas savings have real value to that customer, it is not clear why the Commission would not want to encourage that investment.

CUB indicates it understands the Commission's current policy to apply the TRC test with exceptions as outlined in Order No. 94-590 in docket UM 551. CUB expresses concerns that "the granting of exceptions creates the perception that these programs are not cost effective for the utility but are nonetheless being subsidized for some other purpose." CUB argues that "rather than seeing energy efficiency as a utility resource charged to customers like any other resource, this view leads some people to conclude that energy efficiency is a utility tax that is supporting some non-economic social good."

NWEC states that the TRC, combined with UM 551 exceptions criteria works fairly well and should be supported with some improvements. NWEC states that the primary concern of the public utility commission should be a focus on the value of energy efficiency measures and programs to the utility system. NWEC recommends that the final order in this docket should make clear that the utility cost test is the test that measures value to the utility system and measures and programs should be required to pass the utility cost test in order to ensure the utility is acquiring a least cost resource. NWEC suggests the Commission should increase reliance on the UCT to determine which measures benefit the utility system and should be used in program implementation. NWEC suggests that all measures that pass the UCT, but not the TRC, that have identified unquantified NEBs, should qualify for an exception under UM 551.

Cascade Natural Gas (Cascade) offers that there is confusion in press and public discourse stemming from the counter-intuitive results that emerge from relying solely upon the TRC test as the determinant of which individual measures should be incentivized by utility ratepayers. Loss of incentives leads to an erroneous conclusion that estimated future therm savings from affected measures should be removed from a gas utility's IRP since those savings are not cost effective.

In CUB's comments, Bob Jenks described how he went through a DSM training course in the early 1990s. He recalls from his training that there was a concern that focusing too much on the UCT could lead to incentivizing actions that were not in the economic interest of the customer. CUB asserts that this made sense then as it does today, for a lot of measures, particularly those with a medium term life. CUB suggests that there are a set of measures that provide a very long term economic benefit to the utilities, as well as providing comfort and greenhouse gas reduction benefits, where this concern may not be well founded. Wall insulation is given as an example.

HPG says that cutting cost effective energy efficiency investments will raise bills for Oregon families and businesses. HPG says all measures that pass the UCT are cheaper to the utility and its customers than purchasing gas to serve customers and that eliminating UCT cost effective programs will increase the utility's costs and its rates. HPG suggests least cost procurement should be supported and encouraged. HPG goes on to say that if a homeowner is willing to spend their own money to procure energy efficiency, they are contributing to keeping all rates lower and they should be applauded.

HPG suggests that under current Commission policy, the Commission is not required to assign a value to the cost effectiveness exception that would bring the TRC BCR up to 1.0 and such practice should not be employed. HPG suggests UCT's of 1.0 or greater and exception justifications should stand on their own to justify the continuation of incentives. Mitt Jones of Sensible Energy Solutions and Chad Ruhoff of Neil Kelly Company agree with the HPG on this point.

NEEC says they support arguments CUB made in a September 7, 2014 op-ed column in *The Oregonian* that the utility cost test is an appropriate first screen for assurance that ratepayer dollars are being prudently used to acquire the least cost resource for the utility and its customers. NEEC points out that the UCT is not without precedent for utility commissions in the United States. NEEC asserts that utilization of UCT in Oregon as a first arbiter importantly assures that system costs will follow a least cost-least risk path.

Mitt Jones of Sensible Energy Solutions says the TRC is flawed in design and that its flaws were easy to overlook when natural gas rates were high. He says current market conditions make the TRC a problem we can no longer afford to overlook. Mr. Jones says that Commission's current policy is that presumably the TRC tells us whether or not a measure is a good investment for ratepayers. He says that might arguably make sense if the TRC as applied in Oregon also factored in any of the benefits that motivate homeowners to invest in energy efficiency, including non-energy benefits such as comfort and increased home value, but it does not. Mr. Jones suggests that at a minimum the UCT should be given much more weight and the TRC should be applied more fairly.

Mr. Paul Fulsher, an insulation distributor who provided comments and the Metropolitan Alliance for Common Good (MACG) agree that these energy efficiency programs are cheaper to the utilities than purchasing energy to serve customers and ending these incentives will increase the utilities' costs and their rates. Mr. Fulsher says that to the degree a homeowner wants to spend their money to make their home energy efficient and reduce the damage to the environment, they should be applauded.

Cascade Policy Institute (CPI) points out that by statute, Energy Trust must support "cost effective" energy efficiency projects. Cascade supports Energy Trust removing the measures it proposes to remove because they fail cost effectiveness standards. CPI encourages the Commission to deny exception requests made by Energy Trust for measures with TRC BCRs lower than 1.0, including those measures Staff

recommended exceptions for in our draft contained in Appendix A. CPI points out that programs with BCRs of 0.4, 0.5, and 0.6 (i.e., manufactured home duct sealing, spa covers, and 0.67 and 0.70 EF water heaters) are obviously not in compliance with the SB1149 mandate, and therefore should be disallowed. CPI says ratepayers should be rewarded when natural gas prices are low, not punished with arbitrary applied taxes.

Customer protection

NEEC acknowledges that the exclusive use of the UCT in lieu of the more expansive total resource cost test (TRC) can call into question whether larger public or societal economic optimization is being achieved. NEEC mentions that in the infancy of energy efficiency in Oregon, it was not well understood by the general public and it was clearly helpful to assist end use customers by evaluating their financial contributions to project costs relative to the energy benefits received. NEEC concedes that it may well be that some safeguards in this area should remain in place. NEEC believes that some type of education/information effort to insure customers are making choices with their "eyes wide open" prior to performing a set of efficiency measures that pass the UCT but not the TRC could provide two important results. First, it assures that actions that optimize the utility system can be promoted and implemented. Second, it allows the *market* to monetize the total resource value of the transaction. NEEC points out market economies value products and services by the willingness of buyers to engage a transaction at a specific price point. NEEC contends this approach will help maintain an energy efficiency program that meets Oregon's goals and ensure individual consumers continue to have access to programs that assist their endeavors to improve energy efficiency in their buildings.

Mitt Jones of Sensible Energy Solutions says he understands that some within the PUC believe that applying the TRC is important in order to protect consumers. He questions what is meant by "consumer." He says that if by consumer you mean ratepayers, then he contends continuing incentives that achieve a UCT of at least 1.0 achieves that goal. If by consumer, you mean the homeowner purchasing energy efficiency upgrades, then he questions that role. He argues that the consumer protection approach taken by applying the TRC essentially sets a maximum allowable value for the prices homeowners pay for energy efficiency work rather than letting the market set prices through competition. He asks, where else in state government is there an attempt to limit or set pricing, either directly or covertly?

Mr. Jones says that the PUC plays a valuable role in regulating rates in the case of utility monopolies. However, he points out that consumers have plenty of choices when they opt to improve the energy efficiency of their homes. He concludes that the PUC should support policies that focus on buying energy efficiency, a least-cost resource, not on playing a consumer protection role that is questionable at best.

Commission discretion to provide exceptions

In its second round comments NW Natural points out that in Order No. 94-590 of UM 551, the seventh TRC exception criteria listed is "*The measure is required by law or is consistent with Commission policy and/or direction.*" NW Natural requests the Commission exercise its discretion to allow Energy Trust to continue offering incentives on all the measures for which Energy Trust is seeking exceptions. NW Natural believes all those measures should be grandfathered into the portfolio of gas measures offered to customers. NW Natural gives the following four reasons with the following explanations for why it believes exceptions should be granted:

1. *Equity among Oregon residents* – If gas weatherization programs are not offered while electric weatherization programs are, this sends a message to customers that conservation is only necessary or possible with electricity, and perhaps, that customers should change their heating fuel to electricity. NW Natural suggests that allowing measures for parity with the electric offerings is allowed in UM 551 exception C which states "*the measure is included for consistency with other DSM programs in the region*".

2. *Customer service expectation* – For years, gas utilities have been required per ORS 469.633 and OAR 860-030-0005 to provide home weatherization audits and energy savings information. NW Natural says that weatherization programs are a natural extension of providing audits and information, which customers have come to expect.

3. *Energy conservation* – Even with low gas prices due to shale gas, NW Natural believes maintaining a weatherization program is essential to ensuring customers continue to understand the value of conservation, a key feature of the Governor's 10 Year Energy Plan.

4. *Durability of savings* - The measures under consideration represent about 18 percent of the residential savings acquired in 2013 and it is important to note that the other 82 percent were largely from instant savings measures such as faucet aerators and showerheads and behavioral savings from OPower letters. NW Natural states that in order to continue saving energy over the long term, we need to target savings from measures with long measure lives.

Cascade Natural Gas (Cascade or CNG) states that eliminating measures such as air sealing, sends mixed messages to the public because these traditional home weatherization measures have provided the core of customer-level energy efficiency improvements for decades. Cascade asserts that adding to the mixed messages is the continuation of providing incentives for core weatherization measures for electrically-heated homes which have not experienced as significant a decline in prices.

Robert Hamerly, of GreenSavers USA, INC points out "poll after poll show that the citizens of Oregon want to support and implement energy efficiency". He states our Governor and our President have called energy efficiency out as a key initiative and our leaders and our citizen are calling on our industry to accomplish their efficiency goals. Mr. Hamerly suggests that in order to address the hundreds of thousands of 50 to 100 year old homes that do not meet today's energy code, have unhealthy indoor air quality and don't satisfy the current resident's comfort needs, we must be accelerating our efforts and expanding the industry instead of prematurely putting the brakes on. Mr. Hamerly points out that when he attends national conferences, industry participants tell him how lucky he is to live in a state like Oregon where there is much forward thinking and planning for the future. He says that if we slash the incentive programs, it will severely impact Oregon homeowners and it will be confusing and disheartening for the public who expects these programs to be working on these larger issues.

Non-energy Benefits (NEBs)

In its initial comments NWEC makes the point that in order for the TRC to be most accurate, it needs to properly account for the incremental cost of energy efficiency measures as well as the participant and non-participant benefits. NWEC is concerned that the decision making approach presented in Staff's original memo dated August 13, 2014 does not adequately address non-energy benefits either in TRC calculations nor in the exception criteria. NWEC points out that UM 551 established criteria A which established an exception based on "*significant non-quantifiable non-energy benefits.*"

NWEC points out that in Staff's original memo, the presence of NEBs are acknowledged but Staff only recommends exceptions for some of the measures, and not others. This raises the question of who decides what is "significant" and on what basis is this decision made? NWEC questions the basis staff used to recommend exceptions for some measures but not others.

NWEC notes that there appears to be agreement among most parties including Staff that current TRC calculations are failing to accurately account for all benefits attributable to particular measures. NWEC points out that Staff mentions the presence of the following NEBs: comfort, noise attenuation, benefits to health as a consequence of reduced drafts and reduced mold problems, increased property values, and an overall belief or feeling that the house is a 'quality home' but fails to mention non-quantified environmental benefits. NWEC is concerned that Staff's approach in the draft memo fails to recognize the non-quantified environmental benefits of energy efficiency.

NWEC continues to believe there is value in comprehensively calculating non-energy benefits when applying the TRC, even though many other parties, including Staff, expressed reluctance to this approach during the workshops in this proceeding. NWEC admits it might be easier and less costly at this time to delay implementation of the full calculation of benefits until more work is done nationally that can be utilized in Oregon. Until then, NWEC asserts we need to make sure the existing process for exceptions under UM 551 is working for those measures with significant NEBs. NWEC finds Staff's approach of attempting to find a middle ground by trying to quantify the impact of NEBs without actually doing any quantification unsatisfactory.

NWEC recommends the following approach which they assert will allow the individual home or business owner to place their own values on non-energy benefits, while ensuring the utility system is getting the energy value of the measure:

1. The Commission should require the measure to pass the utility cost test, which would ensure the measure benefits the utility system.

2. A measure should qualify for an exception based on the demonstrated existing of NEBs.

NWEC proposes that the Commission could further simplify this system by establishing categories of measures that are known to have significant non-quantifiable NEBs to

streamline the exceptions process. NWEC suggests a good candidate for this would be existing homes weatherization.

CEW points out that homeowner purchases are motivated by a number of factors including many direct and indirect benefits. CEW indicates that the thousands of Oregon homeowners who have invested in deep energy retrofits of their own homes, do so for reasons other than energy savings, including comfort, noise reduction, safety, health, home value and more. CEW points out that additional societal benefits include jobs, economic development, and greenhouse gas emission reduction.

CEW, the Northwest Energy Efficiency Council, and the Home Performance Guild of Oregon commissioned a report to review the applicability to Oregon of previous studies done elsewhere on the value of non-energy benefits. The commissioned report concludes that the 10 percent adder currently used to value NEBs in Oregon falls short. The report demonstrates that consumers value these benefits across a broad range. In a study performed in Massachusetts, NEBs associated with thermal comfort, noise and health combined were valued at an average of 23.8 percent of bill savings, with the highest reported values of 128 percent of bill savings. The report also cites two Energy Trust of Oregon evaluations that show 27 percent of Home Performance participants viewed NEBs as more important than energy savings and 64 percent of existing homes participants viewed NEBs as more important than energy savings. CEW asserts that the NEB values are significant and can be quantified. CEW says that either the NEBs should be quantified[14] or UM 551 exception A should be applied.

The HPG agrees that participant non-energy benefits are widely acknowledged for insulation and asks the Commission to seriously consider them. HPG notes that indoor air-quality, particularly in homes with asthma sufferers, is also worth considering.

Chad Ruhoff of Neil Kelly agrees with the HPG and points out a 2009 New Zealand study where it was revealed that a program funded by ratepayer and tax payers that was originally designed to save energy, resulted in substantial health improvements. The study shows results such as days off from school dropped by 23 percent, admissions to hospitals for respiratory conditions dropped by 43 percent and days off work dropped by 39 percent.

[14] CEW's commissioned study recommends that Oregon needs a NEB study either as a standalone effort perhaps jointly funded with partner regional entities, or to be included as part of Energy Trust's current evaluations.

H. Gil Peach & Associates, LLC says that now that we have an official EPA finding of danger on carbon and climate change, the ten percent "adder" should be modified to take into account the damage value of carbon and related emissions for the region.

Peter Tofalvi of Abacus Energy Solutions, LLC says that never in their history have they come across one single homeowner who said "give me only savings through cost effective energy savings measures, I do not care for health and safety benefits." He asks, "what is the meaning of saving thirty dollars per month by insulating the attic, if the family will soon have to spend on cancer treatments due to an exposure to radon through unsealed surfaces?" Mr. Tofalvi goes on to say "You cannot peal NEBs of the face of weatherization measures, just like you cannot separate one side of a coin from the other. Similarly, you cannot separate the best interests of a ratepayer from the best interest of the homeowner and her family as human beings. Have you ever met a residential ratepayer that was also not a human being with his vulnerabilities?"

Mitt Jones of Sensible Energy Solutions asks that NEB associated with reducing climate change effects be considered. He also points out that the same NEBs that Staff, in our draft memo, attribute to ceiling insulation; also apply to the other five core weatherization measures in question.

Mr. Jones says he believes the PUC is losing sight of the public good if it cannot find a way to significantly factor the value of NEBs into its decision-making process about incentives for core weatherization measures, particularly when these measures are good for the utility system (UCT BCR > 1).

Mr. Paul Fulsher also mentions the environmental and home improvement NEBs associated with insulation. Mr. Chamberlain of the AFL-CIO and Native American Youth and Family Center (NAYA) recommend NEBs associated with workforce and economic development be included in cost-benefit calculations.

The OPUC Consumer Services Department received a call from Jes Ryan Bradshaw who asked the Commission to consider extending the program to include NEBs, including impacts on future generations and the stability of the home performance workforce and industry for the long term. Another phone call was received from customer Chris Hagerbaumer who told of his own experience weatherizing his home. He experiences increased comfort in the winter as well as in the summer. He said his family would not have made the investment without CEW. He says he strongly believes

Oregon utilities should do everything they can to be as efficient with energy as possible before adding any new power plants. He asks OPUC to continue to support CEW's role.

Susan Walrabenstein also called the OPUC call center and described that she participated in a CEW program. She said the results have been incredibly important to her overall well-being in her home and have increased her quality of life, due to her no longer needing to keep her home at 56-57 degree Fahrenheit in the winter. She also mentions that the value of her home has increased.

A customer named Paul Roberts read an article on energy efficiency cost effectiveness in *The Oregonian* and called the PUC call center to provide comments. He said that benefits like sound suppression, comfort in the home, and increasing the home's value are intangible things and if customers want them, they should have to pay for them themselves without subsidies from the public. He also said that ratepayers should not be paying for higher wage jobs, but rather that is up to the business community and should not be the purpose of the program. He closed by saying we should be doing things that incentivize people to save energy for the population as a whole, not to feel more comfortable in their own homes.

Cross fuel energy efficiency and equity among users

NW Natural and Cascade point out that any changes to gas measures or programs should be consistent across fuels to avoid inequity and confusion among customers. They contend not doing so sends a message to customer that gas may not be worth conserving in most residential applications. NW Natural recommends offering the same measures for gas heated homes as for electrically heated homes, under UM 551 criteria C – *the measure is needed for consistency with other DSM programs in the region.*

CEW points out that communicating with consumers and channel partners is a costly and challenging pursuit. CEW suggests differences in utility programs impacts adoption and costs. CEW argues that a significant decline in gas weatherization incentives will result in market confusion and increased administrative burden for all other measures affecting both fuel types. CEW suggests policy should strive for consistency regionally and across fuel types. CEW agrees with NW Natural that UM 551 exception criteria C should apply.

HPG points out that it would be nearly impossible to find a gas home without an electric customer in it. HPG suggests all gas homes and thus gas incentives, are leads for

electric savings and yet the gas program doesn't get credit for helping secure those savings.

Chad Ruhoff of Neil Kelly Company says that weatherization measures in a gas heated home almost have a more dramatic impact on electricity usage than on gas usage. Mr. Ruhoff cites personal experience where he installed wall and attic insulation and air sealing in his own home. His electric bill went down just as much as his gas bill because his furnace was not running as much and he did not need to use the electric, plug in heater in his kid's bedroom. He suggests the cross fuel benefits are well worth the support of the incentives.

Mitt Jones of Sensible Energy Solutions agrees that all core weatherization measures provide cross-fuel benefits.

Permanent building stock improvement versus medium-term appliance measure

CUB makes the case that it is worth considering whether measures such as weatherization, that improve the efficiency of building stock, should be considered differently than measures that encourage shorter term efficiency, such as appliance measures.[15] CUB points out five differences between weatherization measures and measures that deal with appliances:

- *For all practical purposes, weatherization measures are permanent* – Assigning a measure life to a permanent home insulation measure places an artificial cap on the projected benefits. The discount rate reduces the future benefits of permanent weatherization measures. Therefore, the permanency of weatherization is not adequately reflected in the current economic analysis.

- *Weatherization programs provide a great deal of benefit to the homeowner* – As long as incentive levels are such that the utility system is providing an incentive that is cost effective to the utility system, it shouldn't matter that a homeowner is making an investment based on a value stream that includes family comfort.

- *Weatherization has additional energy benefits that are not quantified and not limited to natural gas* – Natural gas homes also have electricity. Weatherization can reduce electricity usage as well as gas due to less need for electric space

[15] CUB Comments at 7

heaters in the winter and less need for air conditioning in the summer. Duel fuel benefits of weatherization might be one reason to support consistent weatherization programs between gas and electric homes.

- *Weatherization has energy, reliability and capacity benefits that are not effectively modeled* – Weatherization reduces the utility's exposure to winter prices and reduces the risk that in extreme weather situations there simply will not be the supply necessary in the utility's system. Weatherization reduces the need for storage expansions, such as the expansion to the Mist storage facility that is proposed in NW Natural's latest Integrated Resource Plan (IRP).

CUB points out that practically all analyses that look at how to reduce greenhouse gas emissions to a level generally consistent with Oregon's long-term goals, require retrofitting building stock, such as residential homes. CUB suggests that where retrofit measures pass the UCT it seems like incentives should be offered so energy and greenhouse gas emission benefits can begin to accumulate.

In its second round comments, CEW points out that eighty four percent of Oregon homes were constructed prior to 2000 and built to inefficient energy codes. NEEA's 2011 Residential Stock Assessment reports that substantial progress has been made in areas like ceiling insulation, but the vast majority of Oregon homes suffer from draftiness and excessive heat loss. CEW points out that Oregon lawmakers have advanced legislation like HB 2801 and EEAST to help in transformation of the building stock, however the home weatherization market has not yet been transformed. CEW argues home weatherization measures should be provided an exception under UM 551 criteria B: *May lead to market transformation and reduced costs.*

HPG points out that we live in an increasingly mobile population and someone living in a house heated by one fuel has a strong possibility of re-locating within a few short years to another home with a different source of home heating. HPG supports good quality home weatherization and insulation practice across the entire building stock to ensure continued low energy costs and occupant comfort.

Mitt Jones of Sensible Energy Solutions asks the Commission to consider the fairness of shifting public purpose funds from residential to commercial or industrial energy efficiency programs. He argues that residential ratepayers contributing to public

purpose funding should retain access to incentive programs that support home energy efficiency upgrades.

Hedge value and forward price curves versus fixed prices

CUB notes that it is important to consider what prices we are comparing energy efficiency to when we model cost effectiveness. CUB notes that there are three forward price curves in PGE's current IRP. In the medium price scenario, the price stays around $4/MMBTU until 2016 and then begins to rise, reaching $6/MMBTU in 2022. CUB notes that gas prices temporarily hit $6/MMBTU earlier this year in 2014, even though PGE's medium forward price scenario doesn't hit $6/MMBTU until 2022. CUB notes the difference between the theoretical future and the actual past is weather. Forward price curves assume weather in any given year will be average, whereas in the actual weather there is a lot of variation. CUB suggests that using standard forward price curves to determine cost effectiveness of energy efficiency is missing the impact of energy efficiency at mitigating cold weather. CUB suggests two possible remedies: 1) modeling could be done in a manner that accounts for weather variation and its impact on loads and prices, or 2) long term fixed price hedges, such as NW Natural's 30 year Encana contract could be used in modeling. CUB suggests that doing neither of these and assuming the forward price curve reflects the economics of energy efficiency is problematic.

CUB also points to lessons learned in the Western Power Crisis, where measures that previously had a payback period of years would have paid for themselves in months or weeks and programs that had previously been cut, could not be rebuilt quickly enough.

In Energy Trust's original filing from July 1, 2014, it notes that in resource planning for electric utilities, a value is included for efficiency resources to reflect the avoided risk of high load / high power price scenarios where underinvestment in efficiency has a high penalty. This value is referred to as a hedge or premium value. A hedge or premium value is included in avoided cost calculations for electricity but not for gas. Energy Trust explained that NW Natural has committed to examine this issue as part of their IRP process and asks the Commission to direct Energy Trust to add a percent value to the estimated benefits from gas efficiency measures or the Commission should consider the absence of this value in granting exceptions. In Staff's draft memo, we supported the Commission recommending NW Natural report back on the status and final determination of the hedge value of energy efficiency.

In its second round comments NW Natural confirms in its 2014 IRP it has committed to assess a premium value to account for the natural gas price volatility hedging value of efficiency savings. NW Natural points out that UM 551, Order No. 94-590 states, "the effect of conservation in reducing uncertainty in meeting load growth is included in the ten percent cost and no separate adjustment is necessary." NW Natural believes that when UM 551 parameters were adopted, the ten percent adder included in utilities' avoided cost calculations was expected to be sufficient for hedging. However, NW Naturals says it is worth investigating the actual value of hedging and is willing to pursue this as part of its public 2016 IRP process or in a separate docket, as suggested at the August 29th workshop.

NWEC agrees with the recommendation made in Staff's original memo to establish a risk mitigation adder for natural gas utilities.[16] They urge the Commission to include a requirement in the order for this docket that gas utilities establish a risk mitigation value for their next IRPs.

Mitt Jones of Sensible Energy Solutions points out that core weatherization measures are low risk and gas prices are not likely to remain low. Berenice Lopez-Dorsey of Home Energy Life Performance Group, Inc. writes that the future of fracking is not certain. She notes that to date, six cities in Colorado have voted to ban or place a moratorium on fracking. If fracking is restricted to a large enough degree, gas prices will undoubtedly rise which will impact gas weatherization cost effectiveness.

MACG writes that it is shortsighted to suggest that temporary low cost of gas today means energy efficiency retrofits do not pay for themselves. Costs for gas will go up in the future.

David Salholm of Pyramid Heating and Cooling points out that weather, an earthquake or effects from outside the country can impact gas prices and we should not cancel programs based on the assumption that gas prices will stay low. He says payback will be long term if not short term.

In response to this docket Phillip Norman provided excerpts from a blog that he writes. In the blog excerpts he asserts gas prices will go up due to future unforeseen fracking regulations.

[16] NWEC notes that the Power Council and some electric utilities have included the benefits of risk mitigation in their determinations of cost effectiveness, while natural gas utilities in Oregon have not.

Market impacts

CEW says loss of incentives for home and duct sealing and insulation (except ceiling) will have an immediate detrimental impact on both market capacity and demand. CEW indicates that with the incentive cuts Staff proposed, thirty eight percent of CEW project would have received no incentive at all. CEW's own analysis showed that proposed incentive cuts would result in a 35 percent drop in expected deep retrofit projects which may mean 5,900 Oregonians may choose not to retrofit their homes. CEW equates this to as much as $70 million in unrealized economic activity.

CEW disagrees with Staff's position that by maintaining ceiling insulation, the relationships and communication lines between Energy Trust and weatherization contractors will be maintained. CEW asserts there will be a major adverse impact to the contractor base. The 2011 NEEA Residential Building Stock Assessment shows that ceiling insulation is the measure of least remaining need in the state. The Assessment reveals that some 300,000 homes in the state have less than R20 insulation, but 900,000 homes are excessively leaky, and 700,000 have insufficient wall insulation. CEW asserts that eliminating incentives reduces energy savings and delivers an adverse economic impact to the state.

HPG says the measure reductions proposed in Staff's draft memo would result in a shift that will likely be too much to absorb without drastic re-evaluation of contractor business model, staffing, and relationship with Energy Trust. HPG says keeping ceiling insulation alone won't be enough to maintain the weatherization and home performance markets until gas prices rise again and will result in Trade Ally's losing interest in working with Energy Trust which would result in a collapse of savings from the existing homes program. HPG says this shift is not necessary and the Commission has, within UM 551, the tools and latitude to maintain incentives for all weatherization measures that pass the UCT with a BCR greater than or equal to 1.0, no matter the BCR of the TRC due to the presence of significant NEBs. Mr. Paul Fulsher, an insulation distributor, who provided written comments in this docket, also alleges that by eliminating most of these incentives, the existing homes program will collapse.

Chad Ruhoff of Neil Kelly Company explains that where there are multiple incentives provided, it drives the number of measures completed up on each job. The administrative time it takes to do the paperwork on incentives is spread over multiple measures, making it worth the investments. He says that if the only incentive available is for ceiling insulation, it is likely the time it takes to complete the paperwork will not be

worth it. He claims the connection between the market and Energy Trust will diminish as he and other contractors will not be as interested in taking the time to keep up on Energy Trust incentives and procedures, go to Trade Ally Round Tables, etc.

H. Gil Peach & Associates, LLC says it is very important not to disrupt the current private sector DSM employment and training. He contends we will need to grow these resources to deal with continuing climate change.

Robert Hamerly of GreenSavers USA, INC says points out it will take a robust industry to accomplish our statewide energy efficiency goals and you cannot have a robust industry if you are continually turning incentives on and off during the early foundational period. Mr. Hamerly contends that if the PUC moves forward with severely reducing incentives this will completely halt the burgeoning industry.

Mitt Jones of Sensible Energy Solutions writes that Staff's proposed incentive cuts would have devastating consequences for programs, companies, and workers that provide home energy upgrades. He goes on to say that maintaining all core weatherization improvements will give us the best chance of keeping the network of Existing Homes Trade Allies strong, and of maintaining our well-trained workforce. Mr. Jones agrees that preserving only one core weatherization measure incentive would not come close to achieving the stated goal of maintaining the market and relationships between Energy Trust and contractors.

Andrew McGough of Worksystems, Inc. concurs that eliminating gas measure incentives would directly impact the level of demand for energy efficiency for residential customers and in turn impact the vibrancy of the industry.

Berenice Lopez-Dorsey from Home Energy Life Performance Group, Inc. writes that because program incentives come from an authentic and trusted sources, homeowners view them as endorsements of their decision-making process. Ms. Lopez writes that many homeowners have stated that incentives get contractors in the door. Without getting in the door, contractors cannot communicate the benefits of energy projects. Mr. David Salholm of Pyramid Heating and Cooling agrees that Energy Trust rebates become endorsements for making wise purchases. Mr. Salholm says that reducing incentives will have a substantial impact on the industry and it will be difficult to pull their knowledge and training back together when we encounter the next energy crunch.

Tom Chamberlain of the Oregon AFL-CIO writes voicing concern about eliminating incentives. He agrees that doing so would directly impact the level of demand for

energy efficiency for residential customers and would impact the vibrancy of the industry that was developed over the last 30 years in our state and the stability of the industry will be compromised.

Existing Homes Program cost effectiveness

In Staff's initial memo, there was a discussion about whether Energy Trust should report the cost effectiveness of the existing homes program at the individual gas and electric level or as a combined program.

In its comments, Energy Trust points out that historically, it has been required to calculate and report program BCRs for the entire dual-fuel program. Energy Trust indicates it delivers the Existing Homes program for electric and gas efficiency in a holistic manner, rather than separating activities for each fuel. Changing this methodology to require separate reporting of the program's cost effectiveness by fuel does not align with how programs are currently designed and implemented to serve customer needs across fuel types. For example, Energy Trust's program marketing, call center, website, and program management are all designed to serve electric and gas efficiency. While performing a Home Energy Review to identify energy-saving weatherization or equipment opportunities in a gas-heated home, Energy Trust may install efficient electric lights or provide an efficient showerhead. If the gas-heated home has electric water heat, that showerhead saves electricity. Therefore, because gas and electric programs are essentially delivered together, Energy Trust recommends the cost effectiveness of the existing homes program be considered from a combined gas and electric perspective.

NWEC recommends the Commission maintain the current practice of evaluating the existing homes program BCR on a combined fuel basis because of the economies of scale in combining gas and electric measures in home program for existing homes. NWEC points out that often times homeowners will install different measures in the same project that address gas and electric usage. Energy Trust should not be required to "dismantle" costs associated with the program for evaluative purposes.

CEW does not believe is it well advised that the Commission regulates at the measure level in the existing homes program. CEW advocates regulating existing homes at the program level rather than the measure level.

Low income weatherization programs

NW Natural points out that electric utilities have a statutory requirement to provide low income weatherization programs whether or not they are cost effective. This requirement comes from an understanding that low income weatherization programs provide other, hard to quantify benefits such as reduced arrearages and disconnections, as well as maintaining housing stock and improving tenants' comfort and health. NW Natural and Cascade appreciate Staff's recommendation in our draft memo that the Commission make it clear in the order for this docket that low income energy efficiency programs are not held to the same UM 551 cost effectiveness standards as non-low income programs. NW Natural believes this is a helpful step in providing clear regulatory guidance that has been missing for gas utilities.

H. Gil Peach & Associates, LLC points out that EPA has declared special vulnerability to climate change for low income households and requests that this be taken into account in cost effectiveness determination for low income programs.

Workforce and economic development

Oregon Tradeswomen, Inc. filed comments indicating their work with CEW since 2009 has helped to create pathways for entry level, living-wage work in weatherization for over 47 graduates of Oregon Tradeswomen, Inc.'s Trades and Apprenticeship Career Class and that CEW's work has been pivotal in the success of women in the field of home performance. These workers are more skilled, so they provide home and business owners with a more quality project that leads to higher energy savings and home comfort. Oregon Tradeswomen, Inc. urges the Commission to take these factors into consideration in the cost effectiveness discussion.

Abacus Energy Solutions filed comments to say that since 2012, they kept losing volume, in large part due to the trend in diminishing ETO incentives for weatherization measures. They indicate that if incentives are discontinued for wall, floor and duct insulation, they will have no choice but to lay off their last employee and either close their doors or reinvent their company to provide very different services. They warn that toady's experienced Trade Ally Network may disappear very quickly.

Andrew McGough of Worksystems, Inc. points out that energy efficiency is an important entry point to the construction trades for jobseekers looking to gain experience in the field and move into a long-term construction career. He indicates proposed incentive cuts would disproportionately hit jobseekers seeking pathways out of poverty, including

people of color, women and veterans. Mr. McGough suggests these types of benefits should not be lost for Oregonians.

Andrew McGough of Worksystems, Inc., Mr. Tom Chamberlain of Oregon AFL-CIO and NAYA voice a concern that OPUC bases their ongoing investments in energy efficiency will little to no workforce or wage standards. Mr. McGough asserts that the energy efficiency industry, utility ratepayers, and Oregon communities could benefit from more rigorous training, wage, and utilization standards for activities where ratepayer funds are invested.

Mr. Chamberlain points out that through partnership with CEW, they have seen how the establishment of wage and benefits standards, training requirements and other high road standards have raised conditions of workers in the weatherization industry and spurred the creation of a permanent workforce whose skill level can assure a high-quality product. MACG also points out that in addition to the benefits for owners and utilities, support for energy efficiency upgrades through programs like CEW support small local businesses and provides living wage jobs for their workers.

NAYA cites a California PUC commissioned study from May 2014 on Workforce Issues and Energy Efficiency that lends support to the connection between achieving energy savings and addressing workforce issues to secure involvement of workers from disadvantaged communities in rewarding careers in energy efficiency. NAYA asserts that by establishing and enforcing criteria for contractor and worker eligibility in incentive programs, high road standards lead to quality work, increasing energy savings and more effectively utilizing ratepayer subsidies.

New Docket to revisit UM 551

CUB, CEW, and Cascade support the Commission opening a new docket to address cost effectiveness issues more broadly. CUB believes it may be worth updating the guidelines and exceptions set forth in Order No. 94-590 to offer a greater role to the UCT and discuss how the UCT can ensure that the utility is acquiring resources at the lowest cost to the utility system. CUB acknowledges that elevating the UCT might require improvements in the UCT methodology (avoided cost calculations, free riders adjustments, etc.)

CUB also suggests that public policy changes that have occurred over the last 20 years also warrant re-opening UM 551. Specifically, the 2007 Oregon legislature passed greenhouse gas goals and the 2013 legislature provided the OPUC authority to approve

voluntary greenhouse gas reduction projects. CUB also cites real-world examples, such as the 2001 Western Energy Crisis, that demonstrate the risk of premature reductions in these programs. SB 844 that was passed by the Oregon Legislature in 2013 allows gas utilities to seek recovery of costs (with an incentive) associated with projects that reduce greenhouse gas emissions.

CEW says it has come to believe that the TRC is an ill fit for assessing cost effectiveness for whole home programs. CEW supports proposals for further study on the alternative use of the UCT for existing homes programs. CEW also supports further study on the idea of an incentive cap, with a scientific approach to home weatherization based on the needs of the structure, while limiting the incentive to be cost effective at the program level. CEW supports extending the waivers until these discussions have occurred.

In addition to looking at more closely at the role of the UCT and the TRC, in the subsequent docket Cascade would support investigating alternatives to the Energy Trust "high touch" approach in delivering residential energy efficiency measures in the more rural areas of Oregon.

H. Gil Peach & Associates, LLC requests the opening of a new docket where cost effectiveness approaches can be flexibly addressed. It contends the old system was appropriate for the late 1980's but a modified framework is required to take account of new realities.

Mr. Chamberlain of the AFL CIO says he would like to see a broader discussion about how to best serve the global interests of ratepayers and the working people of Oregon. NAYA offers comments with the hope that this discussion will evolve toward an approach that best serves the interests of the ratepayer, which include low income communities and communities of color.

Cost effectiveness and Senate Bill 844 (SB 844)

Relative to SB 844, CUB is concerned that measures that fail the TRC, but pass the UCT, demonstrating they are cheaper than the utility purchasing gas resources, would generally be available as SB 844 projects but at a higher cost to customers. Under 844 the utility is allowed to charge customers a premium as an incentive to reward the utility for its work, including the risks, in developing the program. As a result, the customers would be paying more for these gas-emission reduction measures. CUB asserts that it

makes no sense to eliminate measures from the ETO only to have the same measures provided by the gas utility for a higher cost.

NWEC states that while they agree with comments made in Staff's initial memo that the issues is slightly premature because the rulemaking for SB 844 is not yet final, they find CUB's argument compelling and urge the Commission to consider this point, including potentially creating an additional exception under UM 551 for projects that would be eligible under SB 844. NWEC points out that giving more weight to the UCT in cost effectiveness decisions could also solve this dilemma.

CUB suggests it is worth considering whether these measures could be accepted under UM 551 Criteria G, specifically if "*the measure is required by law or is consistent with Commission policy and/or direction*," it could be included in utility programs despite not being cost effective under the TRC. CUB and NWEC agree that greenhouse gas reduction could also be considered a "*significant and non-quantifiable, non-energy benefit*" in UM 551 criteria A and existing homes weatherization measures could be given exceptions based on that premise.

Process for approving exceptions

In Staff's August 13th draft memo, it was recommended that the Commission continue to allow minor exceptions to be reviewed and approved by Commission Staff. If Staff believes an exception request rises to the level of a more significant request, we will ask Energy Trust to submit a formal exception request that will go through the docket process and be reviewed by the Commission.

Staff did not support Energy Trust's request to approve its own cost effectiveness exceptions for major custom energy efficiency measures. In Energy Trust's comments submitted September 15, 2014, it expressed concern about Staff's recommendation not to delegate authority for custom project exceptions to Energy Trust planning staff. Energy Trust anticipates a higher volume of projects engaged in early design assistance in 2015. A streamlined process would be valuable in allowing Energy Trust to approve incentive payments where non-measure-specific costs and savings for integrated design projects are identified.

Pilots

In Staff's August 13th draft memo Staff expressed support for Energy Trust implementing pilot projects without seeking Commission approval each time because it

is understood that a pilot project may not be cost effective, but should lead to a cost effective program or the measure or program should be discontinued within a reasonable time period. Energy Trust appreciates the Staff support for a streamlined approach to consideration of pilot efforts.

Energy Trust notes that the grant agreement between Energy Trust and the PUC supports treating pilots differently as follows: *"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."* Based on this, Energy Trust suggests that through this docket the Commission consider a change to its program cost effectiveness analysis with respect to measures covered in pilot efforts for funding Energy Trust work to bring emerging technologies to market. As a first step, Energy Trust proposes identifying new, separate performance measures for 2015 for Energy Trust-funded NEEA emerging technology efforts (both electric and gas) and for pilots in the gas portion of the Existing Homes program. These new performance measures would be set within existing Docket No. UM 1158 which is the Docket in which Energy Trust performance measures are regularly updated.

The proposed action in UM 1622 would be for the Commission to signal that where such separate performance metrics are established, pilot and emerging technology costs should be looked at independent of annual program benefit/cost calculations.

Specific measure recommendations

NW Natural recommends the Commission use its discretion to continue all measures for which Energy Trust is seeking an exception. Similarly, Cascade would support the Commission's adoption of Energy Trust's recommendations as included in their report. CUB argues that wall insulation and air sealing should be included based on an expanded interpretation of the UM 551 exception criteria.

In Energy Trust's comments, it recommends Staff reconsider its original recommendation that the Commission not approve an exception for the air sealing/ceiling insulation pilot. Energy Trust says preliminary data from the pilot is very promising, showing a possibility that 85 percent of gas savings may be achieved at one third of the cost. This means that the combined program may achieve a higher TRC than ceiling insulation alone and the TRC BCR for incremental air sealing may be close to or greater than one.

HPG recommends Energy Trust maintain incentives for ceiling, wall, floor and duct insulation for both gas and electric; maintain incentives for performance air sealing; and restore incentives for duct air sealing.

In NEEC's second round comments, they encourage the Commission to employ maximum creativity to maintain natural gas energy efficiency effort while remaining consistent to its mandate to ensure prudence in the use of ratepayer dollars.

H. Gil Peach & Associates, LLC says that now is a good time to keep programs in place and strengthen them due to future resource shortage and climate change effects.

Abacus Energy Solutions, LLC asks the Commission to maintain incentives for testing, air sealing, attic, wall, floor, and duct insulation. Robert Hamerly of GreenSavers USA and Mitt Jones of Sensible Energy Solutions ask the Commission to continue funding residential energy efficiency programs at current levels, or to increase these funding levels.

Chad Ruhoff of Neil Kelly Company recommends the Commission not discontinue incentives for wall, floor and duct insulation or air sealing because doing so would cause the connection between Energy Trust and the market/contractors to be lost. He also asserts there are cross fuel benefits of the incentives that are not being taken into consideration. Additionally, he asserts these measures are in the best interest of rate payers / public.

Mr. Paul Fulsher asks the Commission to continue these important incentives. Berenice Lopez-Dorsey of Home Energy Life Performance Group asks the Commission to continue all incentives currently being offered. Metropolitan Alliance for Common Good provided comments supporting continuing utility subsidies as important incentives for energy efficiency measures for owners of homes and small businesses. Mr. David Salholm of Pyramid Heating and Cooling does not believe we should discontinue the rebates for insulation in gas heated homes. Chris Hagerbaumer supports the Commission increasing energy efficiency. Susan Walrabenstein opposes the elimination of any incentive program.

Staff's Response

Application of TRC and UCT

Commission's current policy

The current construct for cost effectiveness at the Oregon PUC is not strictly the TRC or the UCT. Although Energy Trust is required to report both TRC and UCT benefit cost ratios to the Commission for measures and programs, the Commission uses a customized and flexible approach to determine which measures should be included in energy efficiency portfolios. In Oregon, a 10 percent conservation benefit adder is included in cost effectiveness calculations to account for non-quantifiable benefits and other externalities. Because avoided costs include this adder, the Commission's construct is in some ways closer to a societal cost test than a TRC. In addition, the exceptions spelled out in UM 551 and summarized at the beginning of this document give the Commission great latitude to make cost effectiveness determinations based on the specific and unique circumstances of individual measures and programs. In this way, the Commission is not constrained by rigid TRC cost / benefit determinations. The exceptions are flexible and anticipate the fact that values other than those factored into TRC BCRs exist that help measures get through the cost effectiveness screen.

Although the Commission does not exclusively use the TRC BCR to determine whether a measure should be allowed, they do view the TRC as a valuable tool in weighing the *overall value* of a measure in terms of the magnitude of total costs versus benefits. Indeed, the TRC test is the only test designed to determine whether an investment in energy efficiency makes sense economically when all of its costs and benefits are included. Where it is possible and reasonable, non-energy benefits are quantified (such as water and detergent savings with high efficiency washing machines) and factored into cost / benefit calculations. Without a screen like the TRC, there is not a clear way to gauge the relative value of measures from a total cost and benefit perspective.

Staff acknowledges that the TRC is not a perfect cost test and that there are benefits that are not quantified and included in cost effectiveness calculations. Because the TRC is not perfect and because there are benefits that are not easily quantified, including those whose value may arguably exceed the 10 percent adder, the Commission allows for exceptions where they determine specific conditions warrant them. There is not a hard and fast criterion for where an exception is warranted. Rather, the Commission uses its discretion to weigh information, both qualitative and

quantitative, as to whether or not an exception is warranted. The Commission looks at *both* the TRC and UCT BCRs.

Staff believes the Commission's current approach to cost effectiveness is flexible and generous. The avoided costs that are used to determine cost effectiveness are based on the gas companies' most current market price forecast data, which are developed for the utility's IRP. These values are representative of the incremental cost for each utility to serve demand with supply side options. NW Natural's 2014 IRP states the following are included in the Company's market price forecast:

- The long term gas price forecast compiled from a consultant's gas price forecast;
- A price for carbon included in the gas price forecast.
- Gas storage carrying costs for inventory;
- Upstream variable transmission costs;
- Peak related on-system transmission costs

After market price forecast data is developed, the 10 percent conservation benefit is added to the avoided cost to account for non-quantifiable benefits and externalities.

The Commission allows Energy Trust to apply administrative and program delivery costs at the program level rather than measure level. In this way the individual measure UCT and TRC BCRs are not burdened with program administrative and delivery costs.

What about the Utility Cost Test?

Many parties in this docket are suggesting the Commission should consider using the UCT to establish cost effectiveness because the UCT only includes the costs paid by the utility and not the total cost of the measure. Staff has the following concerns about moving to this approach:

1. Incentive dollars are ratepayer dollars and they should not be spent on measures that cost much more than they save, particularly where alternatives exist that are cost effective from a total cost and benefit perspective. Ratepayer dollars should be spent where they provide the most bang for the buck in terms of energy and dollars saved. Where customers are primarily being motivated by non-energy benefits (be they personal or societal), it is more likely that those customers would make the decision to install measures absent Energy Trust incentives. These individuals can be considered free riders. In the case of free riders, people who would undertake the investment even without incentives, we are just

transferring money from one set of customers to another. Wealth transfer and free ridership should not be subsidized by ratepayers.

2. The UCT in and of itself does not provide any information about the value of the energy efficiency measure. Any measure, no matter how economically marginal can pass the UCT if the incentive is set low enough. Staff is concerned that if the UCT alone were used as a screen, it could justify using other ratepayers' money to help incentivize high-cost/low impact measures.

3. Incentives are seen by some as a signal that the energy and economic benefits of a measure are greater than the costs of a measure. Even some contractors who have commented in this docket admit that homeowners use the presence of incentives as an endorsement of their decision-making process. If incentives are provided for measures that pass the UCT and fail the TRC test, a homeowner who thinks the presence of an incentive signals that the measure pays for itself in energy savings is being misled.

4. There are opportunity costs for customers and for Energy Trust. Dollars spent on "poor" measures are not spent elsewhere either by the participating customer themselves or by Energy Trust and ratepayers as a whole. The Commission's cost effectiveness approach is designed to determine whether ratepayer money is spent on measures whose total costs exceed their benefit, and where the economic and energy benefits do not outweigh the costs, the money should stay in ratepayers' pockets.

Summary

Staff believes the Commission has a durable and disciplined test to determine which measures to incent with other ratepayer's money. Staff believes the Commission's approach to use the TRC and provide exceptions for good reasons is a thoughtful, reasoned approach. In fact, through this approach, Staff is proposing that the Commission grant an exception for some weatherization measures in homes to maintain some level of program activity even though at this time none of the single-family existing homes gas weatherization measures are economic from a pure TRC perspective.

Customer protection

Some parties believe that with adequate notice of payback to customers, the Commission should not concern itself with whether or not a measure's economic and energy benefits are greater than the total measure cost. Others are concerned with what they view as the PUC focusing on consumer protection rather than acquiring least cost resources.

Staff views the Commission's current practice as not motivated by a desire to micromanage individual customer's decisions (which customers are free to continue to make whether incentives are offered or not) but more about using ratepayer dollars prudently and more cost effectively, on measures that save more than they cost. There has to be a reasonable screen for what measures ratepayer dollars are spend on.

Commission discretion to provide exceptions

NW Natural makes an argument for the Commission exerting its discretion to allow Energy Trust to continue offering incentives for all measures for which Energy Trust is seeking exceptions based on UM 551 exception criteria G – *the measure is required by law or is consistent with Commission policy and/or direction.* Staff does not agree and continues to support the Commission approving exceptions for single family ceiling insulation and not wall, floor or duct insulation.

NW Natural also argues that there should be parity between electric and gas measures, which NW Natural argues could be covered by UM 551 exception C – *the measure is included for consistency with other DSM programs in the region.* Staff understands NW Natural's position but notes that there *are differences* between the cost of gas and the cost of electricity. If the avoided costs were equal for gas and electricity and incentives were being offered in one case and not the other, Staff would agree that there's an equity or parity argument. However, in this case, gas is cheaper and gas customers benefit from low gas prices. Staff does not support continuing to use ratepayer dollars to incentivize measures whose costs are greater than their benefits, just because parallel measures are being offered for electric measures where avoided costs are higher.

Staff does not support providing exceptions based on customer service expectations, conveying the value of energy conservation, or the durability of savings as argued by NW Natural. Nor does Staff support exceptions based on Cascade's argument that eliminating measures such as air sealing provides mixed messages to the public.

Non-Energy benefits (NEBs)

Staff acknowledges that NEBs exist for existing homes weatherization measures. Although Order No. 94-590 exception criteria A allows for measures to be included in programs when they are not cost effective if there are significant non-quantifiable NEBs, it is silent about to what extent NEBs should be factored into cost effectiveness calculations. The TRC BCR for ceiling insulation is between 0.5 and 0.7, whereas for wall, floor and duct insulation, the TRC BCRs are between 0.2 and 0.3. Staff recognizes the presence of NEBs such as comfort and noise reduction. Staff also appreciates there are risk reduction and cross fuel benefits of energy efficiency and societal benefits associated with carbon reduction.

For measures with TRC BCRs of 0.2, the value of comfort, noise attenuation, indoor air quality improvements, and all other non-energy benefits would need to be 400 percent more valuable to customers than the avoided energy cost value in order to bring the TRC BCR up to 1.0. A study on NEBs performed in Massachusetts and referenced in CEW's second round comments surveyed customers about their personal valuation of the NEBs associated with energy efficiency measures. At the very high end, customers valued the NEBs associated with thermal comfort, noise and health benefits at 128 percent of bill savings. On average Massachusetts customers valued these same NEBs at 24 percent of their bill savings. Staff recognizes there are regional differences between Massachusetts and Oregon and bill savings cannot be directly equated to avoided energy cost value. However, it remains true that for ceiling insulation, with a TRC BCR of 0.5, the NEBs would need to be valued at 100 percent of the avoided cost value in order to reach a TRC BCR of 1.0, whereas for wall, floor and duct insulation with TRC BCRs of 0.2, NEBs would need to be valued at 400 percent.

Staff does not support developing a set definition of what is meant by "significant" in terms of Order No. 94-590 criteria A. In terms of environmental and climate NEBs, it is not the role of the PUC to attempt to monetize either directly or indirectly environmental or climate impacts associated with energy efficiency.

Staff continues to recommend the Commission grant an exception based on UM 551 exception criteria A (significant hard to quantify NEBs) for ceiling insulation, but not approve exceptions for single family wall, floor, and duct insulation. Staff does not view NEBs associated with wall, floor and duct insulation (or whole home air sealing) as weighty enough to justify continuing measures with TRC BCRs of 0.2 and 0.3.

Permanent building stock improvement versus medium-term appliance measures

In its comments CUB makes a distinction between permanent building stock improvements and medium-term appliance measures. CUB points out four characteristics of permanent building stock improvements that they argue them more valuable than medium-term appliance measures. Staff does not believe that those additional benefits make up the difference between a TRC BCR of 0.2 and 1.0, or said another way, Staff does not believe those benefits, combined with all other NEBs are 400 percent more valuable than the energy savings associated with those measures.

Staff also does not support CEW's argument that the home performance market has not yet been transformed and exceptions for that market should be provided under UM 551 criteria B: *May lead to market transformation and reduced costs.*

Hedge value

Staff understands that there is risk reduction value associated with gas efficiency measures that are not currently being factored into cost effectiveness calculations. Electric utilities have begun to calculate a hedge or risk reduction value of energy efficiency. In Energy Trust's original July 2014 filing they indicated that the risk avoidance factor currently used in Energy Trust avoided costs is 16 percent of the forward market prices when evaluated over the portfolio resource weighted average measure life of 12 years. Staff continues to believe that because of differences between the nature of gas and electricity, such as gas storage and long-term contracts, the hedge or premium value for gas would be less than for electricity.

NW Natural has agreed to calculate a hedge value for energy efficiency in their next IRP. Staff supports NW Natural developing a hedge value to be considered for inclusion in cost effectiveness calculations. Additionally, Staff supports Energy Trust and the natural gas utilities working together the next time avoided costs are to be updated, or sooner, to explore options such as those suggested by CUB that would more rigorously account for the impact of energy efficiency at mitigating the risks of cold weather.

Market impact and economic and workforce development

Staff hears that many stakeholders are concerned that cutting incentives will impact the weatherization market. Staff also understands that there are also concerns that by just maintaining incentives for ceiling insulation and not floor, wall or duct insulation, the

relationship between Energy Trust and its trade ally contractors will be diminished. Staff is sympathetic to these concerns and recognizes the difficult position the Commission is in, in that it must weigh the potential market impacts of its decision to the weatherization industry with the impacts to ratepayers of continuing to use ratepayer dollars to provide incentives for measures whose costs substantially outweigh their energy saving benefit at this time. Staff agrees that trade ally relationships are valuable and took time and energy to develop.

Because ratepayer dollars are what incentives are made of, Staff does not recommend continuing to provide incentives for measures with TRC BCR of 0.2 and 0.3 in order to help sustain a specific market or organization or to facilitate continued level of interactions between Energy Trust and its Trade Allies network. Staff does not see these as prudent bases for regulatory decision-making because they impact money from hundreds of thousands of gas utility customers.

Some parties argued that the OPUC should employ workforce or wage standards for projects that make use of ratepayer dollars. Staff notes that workforce and wage standards are outside the purview of the OPUC.

Existing Homes Program

Staff understands the points Energy Trust and NWEC make regarding the interconnectedness of how the gas existing homes program and the electric existing homes program are delivered. For example, audits identify both electric and gas savings in a home. Also, Energy Trust's program marketing, call center, website, and program management are all designed to serve electric and gas efficiency. Staff agrees with Energy Trust and NWEC that for the purpose of evaluating *program* cost effectiveness, the existing homes program should be reported and considered as a combined gas and electric program. Staff supports Energy Trust reporting the TRC and UCT BCRs for the existing homes program for gas and electricity combined, rather than for each fuel type separately.

SB 844 and cost effectiveness

Relative to CUB's and NWEC's arguments that SB 844 should be used as a basis for providing exceptions to those measures that pass the UCT but do not pass the TRC, Staff continues to believe it is too early to make this determination. The Commission has not yet established what criteria it will use to approve SB 844 projects and so it is preliminary to use SB 844 as a basis for applying an existing exception or creating a

new one. In the future, once criteria for applying SB 844 are established, parties may come back and make specific proposals to the Commission.

New Docket to revisit to UM 551

Staff does not support opening a new docket at this time to explore cost effectiveness issues in more detail, and specifically to explore if and how use of the UCT should be expanded. Staff maintains that we have a good solid test that is flexible and that it takes important factors into account in making determinations on cost effectiveness or granting exceptions to cost effectiveness standards.

If in the future, the Commission is interested in any of the following or other energy efficiency cost effectiveness issues, a new proceeding could be initiated to consider:

- Whether an additional UM 551 criteria should be considered that focuses on lost opportunity measures;
- Whether generally the TRC should be applied at the program level rather than the measure level; and
- A hedge value for gas measures, if the Commission does not want to wait for the NWN IRP evaluation of the issue.

Process for approving exceptions

Staff continues to not support delegating authority to Energy Trust to approve exceptions for major custom energy efficiency measures. Staff does support the kind of integrated design Energy Trust describes and is willing to recommend flexibility in the types of exceptions that may arise. If future experience shows that major opportunities are lost due to this requirement, Energy Trust should come back to the Commission with documentation and a request that this issue be reexamined.

Pilots

Staff supports, during the next update of Energy Trust Performance Measures, that a new performance measure related to pilots and market transformation work be explored. If a new performance measure or measures are developed that are agreeable to parties and to the Commission, then the Commission can consider isolating the costs associated with those pilots and market transformation activities into a separate category, apart from standard program cost effectiveness tests.

Summary

Among other arguments summarized above, parties have maintained that UM 551 criteria A (significant non-quantifiable NEBs), or criteria C (consistency with other programs in the region) could be used by the Commission in this proceeding to justify exceptions for more than ceiling insulation. The basis of the argument for criteria A is that the 10 percent efficiency adder is not sufficient to account for cross-fuel benefits, the hedge value of energy efficiency, the durability of long-term insulation measures, environmental and climate benefits of these measures, and workforce and economic development benefits. The basis for the argument for criteria C is that because of cross fuel benefits and for consistency in the market, incentives should be offered for the same gas and electric weatherization measures. Staff does not support these recommendations.

Staff supports the Commission maintaining their current cost effectiveness policy of focusing on the TRC test with adders where appropriate and granting exceptions or waivers based on UM 551. Staff continues to believe this is a robust and flexible approach to cost effectiveness, grounded in using ratepayer dollars to support those measures whose economic and energy benefits outweigh their costs.

RECOMMENDATIONS:

Staff continues to support an exception for single-family residential ceiling insulation, which has a TRC BCR of between 0.5 and 0.7, but not for single family wall, floor, or duct insulation, which have TRC BCRs of between 0.2 and 0.3. The basis of Staff's recommendation for an exception for ceiling insulation is the presence of significant NEBs. A secondary benefit is that it enables Energy Trust to maintain some connection with residential weatherization Trade Allies. Staff supports an exception for Energy Trust's air sealing pilot as a requirement for ceiling insulation but does not support Energy Trust reinstating incentives for standard air sealing as has been requested by some. Appendix B contains a complete list of the measures for which Energy Trust is requesting exceptions, with Staff's final recommendations.

In addition to the individual measure recommendations in Appendix B, Staff offers the following recommendations:

In addition to the individual measure recommendations in Appendix B, Staff offers the following recommendations:

- Staff supports Energy Trust reporting cost effectiveness for existing homes program as a combined number that includes both gas and electric measures and delivery combined.

- Staff supports NW Natural developing a hedge value as part of their next IRP. Staff recommends the Commission require parties to work together to consider an appropriate hedge value for gas efficiency measures. This should include exploring options such as those suggested by CUB that would more rigorously account for the impact of energy efficiency at mitigating the risks of cold weather.

- Staff recommends the Commission approve isolating the costs associated with pilots and market transformation activities into their own category apart from standard program cost effectiveness tests, once appropriate Energy Trust Performance Measures are developed.

- Staff recommends continuing to allow minor exceptions to be reviewed and approved by Commission Staff. Staff encourages Energy Trust to continue to propose to Staff measures that it believes are minor. If Staff agrees, they will consider and if appropriate approve the exception. If Staff disagrees, Energy Trust will be asked to submit a formal exceptions request that will go through the docket process and be reviewed by the Commission.

- Staff continues to not support delegating authority to Energy Trust to approve exceptions for major custom energy efficiency measures. Exception requests should be made for these to Commission Staff.

- Staff supports the Commission acknowledging as part of the order for this docket that, as with electric efficiency programs, gas low income energy efficiency programs are not held to the same UM 551 cost effectiveness standards as non-low income programs.

- Staff does not recommend moving to a core program or incentive cap approach at this time.

PROPOSED COMMISSION MOTION:

Grant cost effectiveness exceptions to those measures summarized in Appendix B and adopt Staff's recommendations outlined in this report.

UM 1622 - Energy Trust cost effectiveness exceptions

Appendix A

DRAFT

ITEM NO. 1

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: September 30, 2014

REGULAR X **CONSENT** ____ **EFFECTIVE DATE** N/A

DATE: August 13, 2014

TO: Public Utility Commission

FROM: Juliet Johnson

THROUGH: Jason Eisdorfer, Maury Galbraith and Aster Adams

SUBJECT: ENERGY TRUST OF OREGON: (Docket No. UM 1622) Request approval of exceptions to energy efficiency cost effectiveness guidelines.

STAFF RECOMMENDATION:

Commission grant cost effectiveness exceptions to those measures summarized in Appendix A and adopt Staff's recommendations outlined in this report.

DISCUSSION:

Issue:

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

Energy Trust filed the required report on July 1, 2014 in response to the PUC Order No. 13-256 in UM 1622. In its report Energy Trust listed 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 Order No. 94-590 from Docket No. UM 551.

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.

Rule:

Below is a summary of applicable statutes, rules, and orders.

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) provides within 60 days assistance and advice about ways to save energy, including an energy audit.

Oregon Administrative Rules (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 concerns 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 4000kWh 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.[1]
- In cost effectiveness calculations a minimum value of ten percent should be used to account for risk and uncertainty.[2]
- 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.[3]
- Utilities should set demand-side acquisition targets to minimize total resource costs.[4]
- 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)).[5]
- Utilities should offer incentives to end-users sufficient to meet or exceed acknowledged least-cost plan conservation targets.[6]
- Measures that are not cost effective could be included in utility programs if it is demonstrated that:[7]

  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

  C. The measure is included for consistency with other DSM programs in the region

[1] UM 551 Order 94-590, response to item 11 and 12 on page 14
[2] Ibid
[3] UM 551 Order 94-590, response to item 11 and 12 on page 15
[4] Ibid
[5] Ibid
[6] Ibid
[7] UM 551 Order 94-590, response to item 13 on page 18

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.[8]

- 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.[9]

- The present value of measurement and evaluation costs should be levelized over the expected program life for TRC calculations.[10]

- Utilities lost revenue should not be included in the calculation of the TRC, because they represent transfer payments from consumers.[11]

- 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.[12]

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

> *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.*

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[8] Ibid
[9] Ibid
[10] UM 551 Order No 94-590, response to Item 14 on page 19
[11] UM 551 Order No 94-590, response to Item 15 on page 20
[12] UM 551 Order No 94-590, response to Item 4 on page 6

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 – Measure Exception Requests:

Below is a list of measures and programs for which Energy Trust is seeking exceptions in this filing:

- Single family residential ceiling insulation
- Single family wall insulation
- Single family floor insulation
- Single family duct insulation
- Air sealing as added requirement for ceiling insulation
- Manufactured home air sealing
- Manufactured home duct sealing
- 0.67 and 0.70 EF Water Heaters
- New Homes Builder Option Package with 0.67 water heater
- Solar water heating
- Spa covers
- Select Customer Commercial Projects
- Multifamily ceiling insulation
- Multifamily wall insulation
- Multifamily floor insulation
- Multifamily duct insulation
- Multifamily windows
- Commercial vent hoods with VSDs (2 and 2.5 HP)
- New commercial buildings condensing tank water heater
- New commercial buildings condensing unit heater for non-multifamily
- New commercial buildings market solutions packages

Energy Trust is proposing to remove the following measures:

- Whole home air sealing
- Duct sealing-already removed

- Office dishwashers
- Air to air heat exchangers in new buildings
- Demand control ventilation

The following measures were not cost effective, but they have been reworked and they are now cost effective:

- Condensing Tank Water Heater in low-use facilities
- Gas convection oven

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 program in 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)

In its filing, Energy Trust provided UM 551 rationale for each of the measures it proposes to keep. Appendix A contains a table of measures Energy Trust is proposing exceptions for along with the BCRs for each measure. Staff supports Energy Trust removing from their programs these measures they are currently proposing to remove.

Below Staff lays out three potential directions the Commission could take in response to Energy Trust's proposal for cost effectiveness exceptions for individual measures.

1) Take a measure by measure approach, much like Docket No. UM 1696 and make a yes or no determination for each measure individually on its own merit, based on cost effectiveness and the UM 551 exception criteria.

2) Consider instituting a core program approach whereby a set of measures are considered core and part of a standard utility service package not subject to cost effectiveness screening.

3) Consider instituting an incentive cap for residential shell measures. The cap would be significantly less than current incentive levels for non-cost effective shell measures. Within the cap, Energy Trust could have flexibility about what to incentivize. Energy Trust would be held to performance standards that incent acquiring the biggest "bang for buck" measures. Staff is still looking into what this type of approach would look like and how it would be applied.

Below, Staff expounds on each approach to cost effectiveness exceptions for gas efficiency measures.

1) Measure by Measure approach

Below is a summary of each exception request from Energy Trust on a measure by measure basis, using UM 551 as the foundation. Staff's recommendations accompany each request. Comments received from parties were considered in development of these recommendations.

Single family residential ceiling, wall, floor and duct insulation

Energy Trust proposal

The TRC BCR for single family residential ceiling, wall, floor, and duct insulation is 0.5, 0.2, 0.2, and 0.2, respectively. For standard track measures, which do not include Clean Energy Works Oregon (CEWO) or Energy Trust's home performance track, the TRC BCRs are greater at 0.7, 0.3, 0.3, and 0.2, respectively. The utility cost test (UCT) BCRs for all these measures are 1.0 or greater.

Energy Trust asserts that insulation measures provide significant benefits to customers beyond energy savings. Those non-energy benefits (NEBs) include comfort, noise attenuation, benefits to health as a consequence of reduced drafts and reduced mold problems, increased property values, and an overall belief or feeling that the house is a "quality home". Many of these benefits are difficult to quantify and so are not included in the TRC BCR.

Energy Trust recently released a customer-facing online tool to help customers assess the financial case for their projects by calculating the simple payback of measures using bid costs. Energy Trust asserts this system may inspire some customers to ask for alternative bids, and may lead to reduced measure costs. Additionally, Energy Trust contends that if customers are provided with energy payback analysis of their investments in insulation, and they continue with projects with long paybacks, it is reasonable to assume that NEBs are a significant influence on their final decision.

In their filing, Energy Trust proposes that insulation measures be provided as part of a core residential program.

Staff position

Staff acknowledges that insulation measures provide benefits to customers beyond energy savings. Staff notes that these benefits clearly fall into the UM 551 exception criteria A - *The measure produces significant non-quantifiable non energy benefits.*

Although UM 551 exception criteria A allows for measures to be included in programs when they are not cost effective if that criteria is met, it is silent about to what extent NEBs should be factored into cost effectiveness calculations. Staff will not attempt to put a number or weight on the importance of NEBs in insulation cost effectiveness calculations. However, Staff does not believe NEBs alone are enough to compensate for a TRC BCR of 0.2 or 0.3.

Staff also understands that there are some cross fuel benefits of insulation that are not accounted for in the TRC BCR. These include for example reduced electricity use in a well-insulated gas heated home because of less need for portable electric heaters to supplement gas heat during very cold days and less need for air conditioning in the summer.

Staff recognizes that there are risk reduction benefits of energy efficiency for electricity and gas. As Northwest Energy Coalition (NWEC) points out in their comments, price and market condition forecasts are always uncertain and risk hedging remains an important consideration to the benefits of energy efficiency. NWEC also points out that the Northwest Power Planning and Conservation Council and some electric utilities have included the benefits of conservation risk mitigation in their determinations of cost-effectiveness, but natural gas utilities in Oregon have not.[13] In their filing, Energy Trust points out that the electric risk avoidance factor currently used in Energy Trust avoided electric costs is 16 percent of the forward market prices when evaluated over the portfolio of resources weighted average measures life of 12 years.[14]

Energy Trust has worked hard to develop a trade ally network with weatherization contractors. Staff sees value in preserving those relationships. Gas prices always change and are likely to go up again in the future. It would be expensive and take time to re-establish relationships if all weatherization measure incentives were discontinued and then had to be reinstated.

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[13] NWEC UM 1622 Comments filed July 24, 2014, pages 2 &3

[14] Energy Trust July 1,2014 filing in UM 1622 *Cost-Effectiveness Review for Specific Gas Measures and Programs*, page 32

Staff recommends the Commission grant an exception based on UM 551 exception criteria A (significant hard to quantify NEBs) for ceiling insulation, but not approve exceptions for single family wall, floor, and duct insulation. Staff recognizes the presence of NEBs such as comfort and noise reduction. Staff also appreciates the risk reduction and cross fuel benefits of energy efficiency. However, Staff does not see these as weighty enough to justify continuing measures with TRC BCRs of 0.2 and 0.3. By maintaining ceiling insulation (the most cost effective of the insulation measures) the relationships and communication lines between Energy Trust and weatherization contractors will be maintained.

Air sealing as added requirements for ceiling insulation

Energy Trust proposal

Energy Trust reports that whole-home air sealing had a TRC BCR of 0.3 in 2012 and that went down to 0.17 in late 2013. Energy Trust plans to continue to offer this measure through 2014 but in 2015 will discontinue it as a stand-alone measure. Energy Trust is proposing a pilot whereby an incentive would be provided for air sealing when performed along with ceiling insulation. The pilot would be evaluated in mid-2015 and if successful may result in a proposal to rework air sealing as a requirement for ceiling insulation. Because this is a proposed pilot, BCRs for these combined measures are not known.

Staff position

Staff is skeptical that combining two non-cost effective measures will result in a cost effective bundle of measures. Unless Energy Trust can provide reasonable support for why these two non-cost effective measures will likely result in something that is cost effective, Staff recommends that this pilot not be given a cost effectiveness exception.

Manufactured Home Duct and Air Sealing

Energy Trust proposal

Duct and air sealing for manufactured homes continues to not be cost effective with TRC BCRs of 0.4 and 0.5 and UCT BCRs of 0.4 and 0.5. Energy Trust offers incentives for both measures for gas and electric heated homes at the full cost of the measure to encourage participation. The majority of projects are seen for electrically-heated homes where the TRC BCRs are 2.7 and 2.4. Energy Trust suggests that narrowing eligibility to only electric-heated homes creates confusion and may impact acquisition of electric-heated home projects. It is based on this that Energy Trust proposes to continue the

measure under UM 551 exception criteria C – for consistency with other programs in the region. The Commission has previously granted an exception for these measures.

Staff position

Staff understands the Energy Trust's position that maintaining this measure will support cost effective duct and air sealing on electrically heated manufactured homes through consistency and reduced market confusion. Additionally, according to Energy Trust, these measures account for just 0.22 percent of total program saving. Staff recommends the Commission maintain incentives for manufactured homes duct and air sealing.

0.67 and 0.70 Energy Star Gas Water Heaters

Energy Trust proposal

The TRC BCR for 0.67 and 0.70 Energy Star gas water heaters is 0.6 and the UCT BCR is 1.0. Energy Trust notes that there is a significant variance in incremental cost between water heater brands and contractors. For some vendors who sell high volumes of water heaters, the TRC was close to 1.0. UM 551 exception criteria B is that inclusion of the measure will increase market acceptance and lead to reduced costs. Energy Trust believes that with implementation of a range of upstream tactics to improve sales, some of which are being developed in concert with other programs across the country, there will be greater market acceptance of high efficiency gas water heaters and costs will go down. New federal standards for these units are scheduled to take effect in mid-2015. Energy Trust points out that its efforts at increasing market adoption prior to mid-2015 should help transition the market to wider acceptance of the Energy Star efficiency level and may lead to more effective and rapid adoption of the standard.

Staff position

Staff proposes that an exception be provided for 0.67 and 0.70 water heaters under UM 551 exception criteria B.

Solar Water Heating

Energy Trust proposal

This measure continues to not be cost effective with a TRC BCR of 0.12 and a UCT BCR of 1.0. Energy Trust proposes to keep the measure under UM 551 exception criteria A – produces significant non-energy benefits. Energy Trust suggests the

significant non-energy benefits are environmental values and a desire to build a new industry, be a technology leader, and achieve energy autonomy.

Staff position

Staff does not support an exception for solar water heating. Staff does not believe that NEBs can be sufficient enough to make this measure cost effective. Consistent with Commission action in Docket No. UM 1696, Staff recommends this exception not be granted.

Spa Covers

Energy Trust proposal

Spa covers for spas heated with gas have a TRC BCR of 0.5 and a UCT BCR of 1.6. The majority of spa covers incented by Energy Trust are heated with electricity. In 2013 Energy Trust incentivized 533 electric spa covers and only 24 gas covers. Electric spa covers have a TRC BCR of 2.0. When the electric and gas spa covers are considered together, they have a TRC BCR of 1.0. Energy Trust is recommending an exception for this measure on the basis that inclusion of the measure will maintain consistency with the electric offer for the region and minimize market delivery confusion, which corresponds with UM 551 exception criteria C.

Staff position

Staff sees the benefit of continuing to incent electric spa covers which are cost effective with a TRC BCR of 2.0. Staff also understands the market confusion that would ensue if incentives were offered for electric and not for gas spa covers. From a retailer's perspective, it would likely be difficult to confirm whether a spa was heated with electricity or gas in order to decide whether to provide an incentive or not. Staff also appreciates that only 24 gas spa cover incentives were provided in 2013 compared to 533 for cost effective electric installations. For these reason, Staff supports an exception for spa covers under UM 551 exception criteria C.

New Homes Builder Option Package with 0.67 water heater

Energy Trust proposal

Energy Trust indicates in their filing that the impact of reduced gas avoided costs on the New Homes and Products program measures is very small. There is one new homes builder option package, that Energy Trust indicates is rarely used, that includes a 0.67 water heater. This package is no longer cost effective. The TRC BCR for this package

is 0.6 and the UCT BCR is 1.1. Energy Trust is requesting an exception under exception criteria B (will increase market acceptance and lead to reduced cost) and C (for consistency with other programs in the region).

Staff position

At the July 22, 2014 public meeting where the Commission addressed the UM 1696 electric energy efficiency exception requests, there was discussion of lost opportunity efficiency measures. At least one Commissioner verbalized in general terms support for additional leniency on cost effectiveness when it came to lost opportunity measures.

Lost opportunity measures are those measures that are not discretionary but rather where there is one or a very limited number of opportunities to install the measures and the measure could be in place for many years. When a lost opportunity measure is being incentivized, the incentive is encouraging selection of higher-efficiency equipment or building practices than would typically be chosen at the time of a purchase or design decision. For lost opportunity measures, one cannot change their mind or go back and install the measure if conditions, such as gas prices, change in the future. Staff sees the New Homes Builder Option Packages as lost opportunity measures. For that reason, and because of the UM 551 exception criteria Energy Trust has proposed, Staff recommends the Commission grant an exception for New Homes Builder Option Package with 0.67 water heaters.

<u>Multifamily ceiling, wall, floor and duct insulation</u>

Energy Trust proposal

The TRC BCRs for multifamily ceiling, wall, floor, and duct insulation are 0.4, 0.4, 0.3, and 0.3, respectively. The UCT BCRs are 1.2, 1.3, 1.1, and 1.0, respectively. Although the investment decision for multifamily may be quite different than for single family due to the building owner assuming the cost of the tenant improvement, the non-energy benefits of weatherization in a living space are similar between the two programs. In addition, building owners may enjoy the benefits of having a more desirable property for tenants, resulting in potentially lower turnover, higher rents, and the ability to promote lower energy costs to prospective renters.

Energy Trust is proposing exceptions to cost effectiveness for multifamily insulation as they did for single family insulation, recommending they be included as part of a core residential program.

Staff position

As with single family, Staff acknowledges the presence of non-energy benefits but does not believe those benefits are weighty enough to justify an exception where the TRC BCR is 0.4 and 0.3. However, for consistency with Staff's single family recommendations, Staff recommends that an exception be granted for multifamily ceiling insulation, but not for wall, floor, or duct insulation. Customers can still choose to install these measures, but Staff recommends they not be given ratepayer incentive dollars to do so.

Multifamily window retrofits

Energy Trust proposal

The TRC BCR for multifamily windows is 0.2 and the UCT BCR is 1.3. Energy Trust has done surveys that suggest that few multifamily window projects would take place without Energy Trust incentives. Energy Trust notes that there are many non-energy benefits associated with shell measures, including windows. Those NEBs are described previously. Energy Trust is seeking an exception for multifamily windows based on the presence of significant NEBs.

As with multifamily insulation, multifamily windows also have the landlord – tenant dynamic where the landlord pays for improvement but presumably the tenant is the primary beneficiary of the energy savings.

Staff position

Staff notes that single family windows for gas heated homes are cost effective, but multifamily windows for gas heated homes are not. Staff agrees that there are non-energy benefits associated with multifamily windows. Staff also notes that to some extent multifamily windows can be seen as lost opportunities, being installed at the time of a major remodel or at the time of vacancy in a rental property. However, based on the information Staff has to date, Staff does not believe that the presence of NEBs nor the fact that multifamily windows can be considered lost opportunities are enough to compensate for a TRC BCR of 0.2. Therefore, Staff does not recommend an exception for multifamily windows.

Commercial vent hoods with variable speed drives (2 and 2.5 HP)

Energy Trust proposal

The TRC BCR for this measure is 0.2 and the UCT BCR is >1. Energy Trust explains

that this particular application of variable speed drives saves both electricity and gas, because it influences the exhaust rate from spaces that are often gas-heated. Energy Trust offers incentives for a range of commercial vent hood sizes, most of which are cost effective. In Docket No. UM 1696 Energy Trust requested and received an exception for commercial vent hoods with variable drives that were less than 2 horsepower (HP) on the grounds that including the 2 HP hood would provide consistency and reduce confusion and labor costs that would result from an inconsistent incentive offering, particularly when the non-cost effective measure represented a small fraction of the units installed.

Energy Trust is requesting a continuation of the exceptions that were previously granted for 0.5 and 1.0 HP hoods under the UM 551 exception criteria D; inclusion of this measure will increase participation in the program. Energy Trust is also seeking an exception for the 2 and 2.5 HP hoods because it claims that including these measures will lead to ease of implementation in the marketplace. Energy Trust indicates that although the 2.0 and 2.5 HP units are not cost effective, they see limited uptake in the market. The majority of these new hoods are larger than 2.5 HP and are cost effective.

Staff position

Staff understands the Energy Trust's position that the 0.5, 1.0, 2.0 and 2.5 HP hoods are sizes within a range of sizes, the majority of which are cost effective. Staff also recognizes that these hoods may be considered lost opportunity measures as they are most likely installed at the time of construction or major remodel. However, Staff does not support an exception for these hoods because of their low TRC BCR.

<u>New Commercial Buildings condensing tank water heater</u>

Energy Trust proposal

These measures are cost effective in high water use building types such as restaurants and laundry facilities, but are not cost effective in low water use buildings. For the total program as currently defined, the TRC BCR is 0.4 and the UCT BCR is 1.8. Beginning in 2015, the program will claim savings for this measure separately based on building type, and will exclude the lowest saving buildings from the offering. The only building type that remains of concern is schools, where condensing tank water heaters were not cost effective in 2013 because a number of water heaters went to new schools with limited hot water use. Energy Trust will be moving toward a new more targeted approach to educate designers and developers and explain that the extra cost of condensing tank water heaters are justified only in schools with high hot water use such as locker facilities and full service cafeterias. With this new approach, Energy Trust expects the average cost effectiveness in schools to improve. Accordingly, Energy

Trust is suggesting an exception under UM 551 exception criteria B – inclusion of the measure will increase market acceptance and is expected to lead to reduced cost of the measure.

Staff position

Staff understands the issue and the remedy Energy Trust is proposing. Based on this remedy and excluding the low savings applications Staff supports this exception under UM 551 exception criteria B. Because these water heaters are also going in new commercial buildings, Staff also recognizes these as lost opportunity measures which is another reason we support an exception.

New Commercial buildings condensing unit water heater for non-multifamily buildings

Energy Trust proposal

Condensing unit heaters are not cost effective for many building types and are not a common HVAC choice. The current TRC BCR for this measure is 0.5 and the UCT BCR is >1. Energy Trust proposes to rework this measure to better align it with a similar Production Efficiency measure. It will be removed from buildings where it is not cost effective.

Staff position

Staff supports Energy Trust reworking this measure and only keeping it where it is cost effective.

Demand Control Ventilation (DCV)

Energy Trust proposal

The TRC BCR for this measure is 0.6 and the UCT BCR is >1. Energy Trust explains that most projects using DCV go through the Special Measures track rather than use this prescriptive measure. In Special Measures, track measures are evaluated in context of a specific building and are tested for cost effectiveness in each application. Energy Trust proposes to continue this measure as part of the HVAC calculator through the end of 2014 and then after that only offer it as a custom measure where it is cost effective.

Staff position

Staff supports Energy Trust continuing this measure as part of the HVAC calculator

through 2014 and then only doing the measure in custom applications where it is cost effective.

New Commercial buildings market solution packages

Energy Trust proposal

Energy Trust is requesting exceptions for four New Commercial buildings market solution packages that have TRC BCRs between 0.6 and 0.8 and UCT BCRs of between 1.0 and 4.5. Energy Trust's New Buildings program designed and developed a 'market specific incentive offering' in 2013 that provides more savings opportunities for small commercial new construction market. For each building type (retail, office, restaurant, grocery, school, and multifamily) measures are bundled into "good, better and best" packages. This is an innovative model that has been quite successful in getting small business owners to act when they otherwise might not. The Commission previously granted exceptions for two of the four measure packages for which Energy Trust is seeking exceptions. The two measures previously excepted are:

- Air barriers in offices elective
- Radiant heating and cooling in offices under the "Best" track

The two new market solution exceptions being requested are:

- Multifamily (gas heat) increment between "Better to Best" and "Good to Better"
- Tankless water heat in offices

Staff position

Staff supports exceptions for these New Commercial market solutions packages and measures for the reasons cited by Energy Trust in their submittal and because Staff views these new commercial building market solution packages as lost opportunity measures.

2) Core Program Approach

The previous section laid out a measure by measure approach to dealing with non-cost effective energy efficiency measures. Another approach the Commission might consider is to define a core program that includes basic measures that would not be subject to cost effectiveness limitation. Energy Trust proposed a core program in its July 2014 filing in this docket. It was suggested that single family and multifamily ceiling, wall, floor and duct insulation, as well as duct sealing could be considered as

part of a core program. Below is a summary of parties' comments on this issue and Staff's response.

Parties' comments

Northwest Natural Gas (Northwest Natural or NWN) supports the idea that weatherization measures should be offered as part of a utility's basic customer service and that the cost of delivering these incentives should not be subject to cost effectiveness screening. NWN believes customers and policy makers in Oregon expect that utilities will offer basic weatherization services.[15]

NWN points out four other reasons it believes a core program should be considered:

- Customers would receive consistent messaging about savings opportunities
- Utilities would not incur costs for starting, stopping, and restarting programs
- Would prevent lost savings opportunities that would occur if a program or measures were not always available
- Measures would be fuel neutral so would not be controversial in a changing market

The Northwest Energy Efficiency Council (NEEC) states it believes that some type of core program services seems justified despite current challenges to cost effectiveness tests. NEEC points to the fact that common sense practices of reducing home air leakage, sealing gaps in home heating duct work, and providing sufficient insulation have been encouraged regardless of heat source since the beginning of the region's energy efficiency program efforts in the early 1980's. NEEC says this has led to a market expectation that energy efficiency programs will provide assistance for homeowners to implement these measures. NEEC compares the utility service or core program idea to other basic services that utilities provide to their customers on issues related to safety, stewardship, billing, and security.

Cascade Natural Gas (Cascade or CNG) also supports the concept of a core residential program that includes air sealing and that is provided independently of cost effectiveness. Cascade points out that a core program concept leaves the customer free to determine for themselves, in light of the incentives provided through the Core Program, the level of non-energy benefits they perceive and/or realize as they do their household calculus of what they are willing to pay for the measure.

[15] NWN points to ORS 469.633 and OAR 860-030-0005 where gas utilities are currently required to provide energy audits and information regarding energy efficiency measures. NWN also points to the fact that independently owned electric utilities are required to charge customers a public purpose charge for the steady investment in energy efficiency programs.

The Home Performance Guild of Oregon (HPG or the Guild) recommends the PUC work with Energy Trust and stakeholders to better understand the core program concept. HPG suggests that careful consideration be given to what would be included in a core program. HPG would recommend considering consumers' expectations first, regardless of the cost effectiveness of the measure. HPG also recommends that careful consideration be given to how the core program would be justified. HPG also strongly recommends that air sealing continue to be offered as an incentivized Energy Trust program because they see it as a hallmark of the weatherization program.

Clean Energy Works (CEW) believes the idea of a core program or basic utility service has merit and deserved additional study. CEW proposes that a core program should be focused on minimum home performance standards.

At the July 29, 2014 workshop, the Citizens' Utility Board (CUB) and NWEC voiced concerns about the idea of a core program. CUB noted that in the 1990s energy efficiency was viewed as a utility service and not as resource acquisition. CUB said the risk of moving back to the service model is that it takes away from the idea of energy efficiency as a resource. CUB believed there could be a lot of downsides to the core program idea that have not yet been thought through.

NWEC said that a core program may not be needed and that we may be able to solve the issues in a simpler way that is more consistent with UM 551.

Staff's response

Staff understands the desire of some parties to see core energy efficiency measures offered as a utility service outside the bounds of cost effectiveness. However, Staff agrees with CUB and NWEC that the idea of a core program goes contrary to the idea of energy efficiency as a resource that competes on par with supply side resources. Staff does not recommend the Commission support moving to a core program or utility service model that operates outside cost effectiveness. Staff believes, as NWEC, that UM 551 with the cost effectiveness exceptions provided in Order No. 94-590 provides the needed flexibility to incent measures that provide greater customer benefits and is a better tool to use to address cost effectiveness challenges in a way that benefits ratepayers in the long run. Further, Staff believes that allowing energy efficiency measures that are not cost effective to be implemented under a core program without ongoing regulatory review would not be good policy.

3) Incentive Cap Approach

Another alternative approach the Commission could elect to take is to set an incentive cap for weatherization measures that is well below current incentive levels. Energy

Trust would be provided flexibility to incent measures within that cap. The cap would be significantly less than current incentive levels for non-cost effective shell measures. Energy Trust would be held to performance standards that would encourage them to acquire the biggest "bang for buck" measures.

Staff is interested in looking more at the idea of an incentive cap for weatherization measures and will continue to research what such a cap might look like, how it would operate, and how it would impact overall cost effectiveness. Staff is open to public comment on this idea.

Gas Existing Homes Program Cost Effectiveness

Energy Trust proposal

The gas portion of the existing homes program is not currently passing the utility cost test. The gas portion of the existing homes program had a UCT BCR of 0.7 in 2013 and is projected to have the same in 2014. The TRC BCR for the gas existing homes program was 0.9 in 2012, 0.8 in 2013, and is projected to be 1.5 in 2014. When the electric and gas measures that make up the existing homes program are combined, they result in TRC BCRs and UCT BCRs that have been and are projected to continue to be greater than one. Historically, Energy Trust has reported program BCRs as a single number that combined gas and electric measures. Because this docket is focused on gas only, Energy Trust looked at the numbers from strictly a gas perspective for the purposes of the July 1st filing.

To bring the gas portion of the existing homes program TRC BCR up in 2014, Energy Trust plans to increase the number of energy saver kits that are distributed. Up to 40 percent of savings are planned to come from kits in 2014.[16] The gas energy savings that come from kits are primarily from showerheads and faucet aerators. Energy Trust acknowledges that the savings from showerheads in the future may be limited.

Energy Trust runs through various scenarios in their filing and demonstrates that in order for the gas existing homes program to pass the UCT, there must be at a minimum a reduction in the delivery and incentive costs.[17]

[16] Energy Trust July 1,2014 filing in UM 1622 *Cost-Effectiveness Review for Specific Gas Measures and Programs*, page 18
[17] Ibid, page 20

The Grant Agreement between Energy Trust and the PUC requires that[18]:

> *Individual conservation programs will be designed to be cost-effective…*

And[19]:

> *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.*

Staff response

The Commission has a choice to continue to look at cost effectiveness of the existing homes program as a whole, or to look separately at gas and electric measures and require each to have a UCT and TRC BCRs greater than one.

If the Commission elects to consider the existing homes program from the gas and electric perspective separately, Staff recommends that the Commission allow exceptions for the gas existing homes program but require Energy Trust to find a way bring the UCT BCR and TRC BCR of the gas existing homes program to 1.0 or greater by the end of 2015.

Additional Energy Trust Requests

In addition to the specific exception requests for gas efficiency measures, the July 1, 2014 Energy Trust filing also contained recommendations related to:

A. Streamlining the approval process for prescriptive measure exceptions
B. Streamlining the approval process for custom measure exceptions
C. Inclusion of a hedge or risk mitigation value in estimating avoided cost forecasts

Below are a summary of each of these with Staff's recommendations.

A. Streamlining the approval process for prescriptive measure exceptions

[18] Subsection e of the Guidelines contained on page 14 of the Grant Agreement between Energy Trust and the PUC clearly states
[19] Ibid, Guideline I

Energy Trust proposal

The Commission has directed Energy Trust to request approval whenever new measures are not cost effective based on a simple TRC calculation but appear eligible for exceptions under the categories listed in UM 551. This includes pilot projects. Currently, Energy Trust uses a two-pronged approach when considering exceptions:

a. For minor exception requests, where the size and scope are limited, Energy Trust provides details to PUC Staff who review and if appropriate, provide approval through an email. A copy of the email is kept on file by the PUC Staff.
b. For major exception requests, Energy Trust provides an official filing and requests an exception. PUC Staff opens a docket, solicits comments from parties, and then makes formal recommendations to the Commission at a public meeting. Commissioners then make a decision on the exception request at the public meeting.

Energy Trust requests that this process be more formally defined going forward and asks the Commission to consider more clearly describing the difference between "minor" and "major" exceptions. Energy Trust also asks the Commission to consider not requiring reviews or formal exceptions for limited duration pilot activities.

Staff position

Staff recommends continuing to allow minor exceptions to be reviewed and approved by Commission Staff. Staff does not feel the need to establish a formal definition of major and minor requests. Staff encourages Energy Trust to continue to propose to Staff measures that it believes are minor. If Staff agrees, they will consider and if appropriate approve the exception. If Staff disagrees, Energy Trust will be asked to submit a formal exceptions request that will go through the docket process and be reviewed by the Commission.

Pilot projects clearly fall within UM 551 exception criteria F which states:

"*The measure or package of measures is included in a pilot or research project intended to be offered to a limited number of customers.*"

Additionally, subsection e of the Guidelines contained on page 14 of the Grant Agreement between Energy Trust and the PUC clearly states (emphasis added):

> *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

Staff supports Energy Trust implementing pilot projects without seeking Commission approval each time. It is understood that a pilot project may not be cost effective, but should lead to a cost effective program or the measure or program should be discontinued within a reasonable time period.

Commission Staff is requiring Energy Trust to update avoided costs every two years after which Energy Trust should come before the Commission and summarize the measures that are no longer cost effective. Exception requests, if any, should be made at that time, even if a previous exception had been granted. Energy Trust should plan to discontinue measures that are no longer cost effective and are not granted exceptions within a reasonable time period. Staff recommends that at the same time exception requests are made, Energy Trust should also provide a summary of pilot projects in process or in the planning stages.

B. Streamlining the approval process for custom measure exceptions

Custom measures are efficiency measures where savings, costs, cost-effectiveness, and in some cases incentives, are determined based on a site-specific calculations. At certain times in the past, Energy Trust planning Staff approved custom measures themselves based on UM 551 criteria. In those times, Energy Trust believed many projects benefited from the ability to identify and approve appropriate exceptions with a single phone call allowing the planning engineer to continue to move forward on a project without delay. Energy Trust believes that expediency in approving custom exceptions can support innovation and lead to potentially capturing important learnings.

Energy Trust suggests the Commission consider one or more of the following:

- Allow Energy Trust planning Staff to review and approve custom project exceptions. Energy Trust could provide to PUC Staff a structured process for reviewing what exceptions Energy Trust made quarterly. Based on quarterly reviews, Staff could decide to take this authority back from Energy Trust.
- Energy Trust could create a list of measures where further experience can help identify costs and savings and/or further practical experience is likely to lead to increased savings and lower costs. Energy Trust could request an exception covering all the measures on this list. In this way, exceptions could be pre-arranged in advance of the "press of construction schedules."
- Measures could be analyzed for cost effectiveness as part of a bundle.

Staff is not convinced that this is a large problem. Staff is not comfortable with any of these approaches and is not comfortable with Energy Trust approving cost

effectiveness exceptions on major custom energy efficiency measures. Staff will do our best to turn around exception requests in a timely manner. In the meantime, Energy Trust should document where opportunities arose that could not be capitalized and where savings and learnings were forgone because of the current exceptions approval process.

C. Inclusion of a hedge or risk mitigation value in estimating avoided cost forecasts

Energy Trust proposal

Energy Trust notes that in resource planning for electric utilities, a value is included for efficiency resources to reflect the avoided risk of high load/high power price scenarios where underinvestment in efficiency has a high penalty, compared to the low penalty for over-buying efficiency in a low load/low price scenario. This value is referred to as a hedge or premium value. For electric utilities, a hedge or premium value is included in avoided cost calculations on top of the ten percent energy efficiency adder that was defined in the Northwest Power Planning Act of 1980.

There is no current estimate of this value for gas. Energy Trust asserts that NWN has committed to examine this issue as part of their 2015 IRP. Until the gas value is analyzed, Energy Trust suggests that the Commission direct them to add a percent value to the estimated benefits from gas efficiency measures or the Commission should consider the absence of this value in granting exceptions.

Parties' comments

NWEC supports the inclusion of a risk avoidance value for efficiency programs in Oregon because price and market condition forecasts are always uncertain. NWEC points to the Northwest Power and Conservation Council (Power Council) which says over the past 15 years efficiency has proven to be a very stable electricity resource that ends up being a better deal for electricity customers at least 95 percent of the time. NWEC says that while the Power Council and some electric utilities have included the benefits of conservation risk mitigation in their determinations of cost-effectiveness, natural gas utilities in Oregon have not. NWEC emphasizes that the benefit of energy efficiency to the utility and its customers as a tool to reduce risk and price uncertainty is currently overlooked in the cost-effectiveness analysis for gas utilities in Oregon.

Cascade also supports the ongoing examination of including a hedge or risk mitigation value in estimating avoided cost forecasts. Cascade would like to see a strong analytical case made before an adder is applied.

Staff's response

Energy Trust indicates that the electric risk avoidance factor currently used in Energy Trust avoided electric costs is 16 percent of the forward market prices when evaluated over the portfolio resource weighted average measure life for 12 years. Staff believes that because of differences between the nature of gas and electricity, such as gas storage and long-term contracts, the hedge or premium value for gas would be less than for electricity. Therefore, although Staff acknowledges the value will be greater than zero, it will not likely be large enough to cause measures with TRC BCRs of 0.5 or less to be anywhere close to becoming cost effective.

Staff supports the exploration of a risk mitigation adder, much as is used for electric utilities. Such an adder should be developed through the IRP process. In Energy Trust's filing it is indicated that NWN has agreed to look at a hedge value as part of the development of its 2015 IRP. Staff supports the Commission recommending NWN report back on the status and final determination of the hedge value of energy efficiency.

Additional Parties Comments

Written comments were received by Cascade, CEW, HPG, NWEC, NEEC, NWN and an interested member of the public. CUB provided verbal comments at the workshop on July 29, 2014. Their comments are grouped by topic and summarized below.

Parties' comments related to the idea of a core program and the risk benefits of energy efficiency are presented in previous sections of this memorandum and will not be repeated here. What follows is a summary of additional comments and Staff's response.

Non-energy benefits and how cost tests are currently being applied

Parties' comments

NWEC voices support for the framework established under Order 94-590 in UM 551 and for looking at measures from both a TRC and UCT perspective. NWEC requests that the Commission examine whether we are utilizing and implementing cost tests correctly, and particularly whether we are accurately accounting for all the costs and benefits attributable to a measure. NWEC believes that we may be failing to account for substantial non-energy benefits in the TRC calculation. NWEC asks what protocols could be put in place in Oregon to ensure that we are adequately accounting for benefits in our evaluation frameworks.

NWN pointed out the current commission policy regarding NEBs contained in Order No.

94-590: "A utility should calculate cost savings and other non-energy benefits if they are significant and there is a reasonable and practical method for calculating them." NWN says it may be useful to discuss if the 10 percent adder for NEBs is sufficient enough to ensure that the value and costs of benefits in the TRC are balanced.

CEW points to the 5,000 homeowners who have invested in whole home retrofits in recent years for what they call "benefits well beyond energy efficiency alone."

HPG points to the fact that NEBs are widely acknowledged for insulation. HPG points out improved indoor air quality as another important NEB. The Guild also voiced support for a concept that was originally brought up by Portland General Electric and Pacific Power in Docket No. UM 1696 to seek out and develop improved information on non-energy benefits.

Customer comment

A customer named Paul Roberts read an article on energy efficiency cost effectiveness in *The Oregonian* and called the PUC call center to provide comments. He said that benefits like sound suppression, comfort in the home, and increasing the home's value are intangible things and if customers want them, they should have to pay for them themselves without subsidies from the public. He also said that rate payers should not be paying for higher wage jobs, but rather that is up to the business community and should not be the purpose of the program. He closed by saying we should be doing things that incentivize people to save energy for the population as a whole, not to feel more comfortable in their own homes.

Staff's response

Staff acknowledges that non-energy benefits exist for weatherization measures. Staff does not support Energy Trust or the utilities spending large amounts of money to define and quantify the value of non-energy benefits. Staff supports the Commission considering NEBs in a general way as they look at case by case exception requests under UM 551.

<u>Measure and fuel type aggregation</u>

Parties' comments

CEW points out that in terms of HVAC, homes function as systems and weatherization measures work together to achieve a level of home performance that is both efficient and safe. CEW suggests that whole home programs should be viewed as single interventions and that weatherization measures be lifted to a higher level of

aggregation.

CEW says they are uncertain of the benefits to segregate measures by fuel type for home weatherization. They point out that homeowners have limited choice in fuel type and weatherization measures outlive average remaining occupancy by four times. Any residential ratepayer may not enjoy the benefits of avoided costs by fuel type.

Likewise HPG and NEEC also point out that we live in an increasingly mobile society and someone living in a house heated by one fuel type has a good possibility of re-locating within a few short years to another home with a different source of heat. Both contend that good quality home weatherization and insulation practices across the entire building stock is the best way to ensure that a mobile population enjoys the benefits of lower energy costs and good occupant comfort.

Staff's response

Staff recommends the Commission support the current policy of looking at programs by fuel type so that gas and electric customers individually support solid cost effective programs, and so that one fuel type is not subsidizing another. That being said, Staff is open to exploring more the idea of an incentive cap for all weatherization measures that could be used to flexibly incent measures that provide the best bang for the buck for customers. The total program would need to be cost effective. Staff will work with Energy Trust and parties on developing this alternative more fully.

Specific exception requests

Parties' comments

A few parties mentioned support for exceptions for specific measures in their comments. These are summarized below:

NWN recommended exceptions be granted and Energy Trust continue to offer incentives for the following measures:

- 0.67 and 0.70 EF Energy Star water heating
- Solar water heating
- Spa covers
- New home builder option package with 0.67 EF water heater
- Multifamily window retrofits
- Customer projects where there are non-energy benefits
- Commercial kitchen vent hoods

- Condensing tank water heaters
- Market Solutions measures
- Manufactured home duct and air sealing
- Whole home air sealing

CEW recommends UM 551 exception criteria A – significant non-quantifiable non-energy benefits be used to support an exception for whole house energy retrofits.

Cascade supports the concept of a core program that specifically includes whole-home air sealing. Cascade also supports the continuation of incentives for multifamily ceiling, wall, floor, and duct insulation measures as part of a core residential program.

HPG supports continuing incentives for whole home air sealing and wall, floor, and duct insulation.

Staff response

Staff does not support continuing to offer direct incentives for air sealing or for wall, floor, or duct insulation. Staff acknowledges there are currently unaccounted for NEBs and risk mitigation benefits; however, Staff does not see these benefits as large enough to warrant providing exceptions to cost effectiveness tests, where TRC BCRs are in the range of 0.2.

Senate Bill 844 (SB 844)

Party comments

CUB did not submit written comments in response to Energy Trust's July 1, 2014 filing. However, at the workshop on July 29, 2014 CUB talked about the potential interactions between this docket and SB 844, which says gas utilities can do things that reduce greenhouse gas emissions if they also benefit customers. CUB pointed out that technically anything that passes the UCT benefits customers. CUB suggested that anything that falls between the TRC and UCT could technically be applied to SB 844. If energy efficiency were implemented through SB844 it would cost more to customers because the utility can earn a higher return on their investment. CUB suggested that one way to handle this would be that the PUC could consider a new exception based on applicability to SB 844, whereby efficiency that passes the UCT but not the TRC could be acquired through a standard efficiency program rather than a more expensive SB 844 project.

CUB proposed that approved SB 844 projects could help determine a threshold value of carbon reductions which could tell us where the exception should be applied in the

future.

Staff response

Staff is interested in this approach, but has not yet given it enough consideration to offer a recommendation. Given the status of SB 844, this may be a preliminary concept at this time.

Other items

In addition to the items mentioned above, the following issues were brought up by parties. Staff's response is included in the bullets below:

- CEW encourage the Commission to look at the potential benefits of more rigorous training, wage, and utilization standards. Staff does not support this recommendation because it is outside the purview of the Commission.
- Cascade recommended that as part of future investigations into simplifying program delivery and/or reducing program costs, consideration be given to Cascade's own experience with delivering programs. Staff does not view this docket as the appropriate place to address this suggestion.
- Cascade supports exploring ways to streamline the approval process for cost effectiveness exceptions. Staff supports streamlining exception approval for pilots and continuing the Staff approval process for minor exception requests but not for major requests as discussed previously in this memorandum.
- NWN recommends the Commission provide clear acknowledgement that low income weatherization programs are invested in for many reasons and are not expected to meet the cost effectiveness standards in UM 551. Staff agrees with NWN that low income weatherization programs are not intended to meet UM 551 cost effectiveness standard and for clarification recommends the Commission acknowledge that fact in the final order for this docket.

Conclusion

Consistent with how UM 1696 was handled; Staff has considered each of Energy Trust's cost effectiveness requests and made recommendations on each measure consistent with UM 551. Appendix A contains a summary of Staff's recommendations for each measure. Staff does not recommend the Commission support moving to a core program or utility service model that operates outside cost effectiveness. Staff believes that UM 551 is a better tool to use to address cost effectiveness challenges in

a way that benefits ratepayers in the long run.

One potentially reasonable alternative to a measure by measure UM 551 approach would be for the Commission to establish a per residence incentive cap for weatherization measures. Staff will work with parties and Energy Trust to develop this concept further.

If the Commission elects to consider the existing homes program from the gas and electric perspective separately, Staff recommends that the Commission require Energy Trust to find a way to bring the UCT BCR and TRC BCR of the gas existing homes program to 1.0 or greater by the end of 2015.

Staff recommends continuing to allow minor exceptions to be reviewed and approved by Commission Staff. Staff supports Energy Trust implementing pilot projects without seeking Commission approval each time.

Staff is not comfortable with Energy Trust approving cost effectiveness exceptions for major custom energy efficiency measures without consulting PUC Staff. Staff will do our best to turn around exception requests in a timely manner. In the meantime, Energy Trust should document where opportunities arose that could not be capitalized on and where savings and learnings were forgone because of the current exceptions approval process and report this back to Staff at an appropriate time.

Staff supports the Commission recommending NWN report back on the risk reduction value of energy efficiency determined though modeling in its 2015 IRP.

Staff acknowledges that non-energy benefits exist for weatherization measures. Staff does not support Energy Trust or the utilities spending large amounts of money to define and quantify the value of non-energy benefits. Staff supports the Commission considering NEBs in a general way as they look at case by case exception requests under UM 551.

Staff supports the Commission making clear that low income energy efficiency programs are not held to the same UM 551 cost effectiveness standards as non-low income programs.

PROPOSED COMMISSION MOTION:

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Appendix A - Items where Energy Trust is proposing cost effectiveness exceptions under UM 551

Measure	*TRC BCR*	*UCT BCR*	*Energy Trust recommendation*	*Staff recommendation:*
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	Approve based on NEBs, cross fuel benefits, lack of risk value, payback estimator, maintain market
Single family wall insulation	0.2 - 0.3	0.9		No exception
Single family floor insulation	0.2 - 0.3	0.9		No exception
Single family duct insulation	0.2			No exception
Air sealing as added requirement for ceiling insulation	N/A	N/A	UM 551 Criteria F - Pilot	No exception - unless ETO can make case for why pilot would be fruitful
Manufactured home air sealing	0.5	0.5	Exception C - Majority of manufacutred 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 manufacutred 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
Mulitfamily 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	0.6 - 0.8	1 - 4.5	Multiple UM 551 critieria - A ,B, D, and E	Support exceptions based on UM 551 Criteria A, B, D, and E

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

Measure	*TRC BCR*	*UCT BCR*	*Energy Trust recommendation*	*Staff recommendation:*
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 manufacutred 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 manufacutred 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
Mulitfamily 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 effecitve. 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 pack	0.6 - 0.8	1 - 4.5	Multiple UM 551 critieria - A ,B, D, and E	Support exceptions based on UM 551 Criteria A, B, D, and E

Appendix B