



EnergyTrust

421 SW Oak St., Suite 300
Portland, OR 97204

1.866.368.7878
503.546.6862 *fax*
energytrust.org

May 22, 2014

Oregon Public Utility Commission
Attn: Filing Center
3930 Fairview Industrial Drive SE
PO Box 1088
Salem, Oregon 97038

Re: Energy Trust Filing for Cost Effectiveness Exceptions for Specific Electric Measures

Attached to this cover letter please find a supporting document that outlines Energy Trust's request for specific electric measure exceptions to the cost effectiveness guidelines established in Commission Order UM 551.

Thank you for your consideration, and please do not hesitate to contact me if you have any questions or need additional information or clarification regarding this filing.

Very truly yours,

Debbie Goldberg Menashe, General Counsel

OSB #89050

503 445-7608

Debbie@energytrust.org

Cost Effectiveness Exceptions Request for Specific Electric Measures

May 22, 2014

Background

In late December 2013, Energy Trust of Oregon updated the electric avoided cost assumptions used to evaluate the cost effectiveness of measures and programs across the territory we serve. The update aligned Energy Trust's key planning assumptions with current utility planning processes and market conditions. Compared to previous electric avoided cost assumptions, the new avoided costs are lower but not by a consistent amount across measures savings shapes and lifetimes. For example, avoided costs for heat pumps with an 18 year measure life declined just 5% while the avoided costs for commercial lighting with a 15 year measure life declined 20%.

In February 2014, Energy Trust completed a review of the impacts to cost effectiveness of current electric measures across all the portfolio of programs. Overall, the measures that are no longer passing cost effectiveness with new avoided costs made up 5.6% of 2013 savings, a small but not inconsequential amount. Actual impacts going forward are more difficult to quantify. Custom projects may be reworked with different, more cost effective approaches with quantified non energy benefits and other measures may have been new to 2013 with low volume that was expected to increase in future years. Either case is difficult to quantify with high confidence.

Once impacts to savings were estimated, OPUC staff recommended that Energy Trust determine which measures meet one or more of the cost effectiveness exceptions in UM551 and file an exception request with the commission. In addition, the 2014 Oregon commercial code effective July 2014 is impacting the future savings assumptions of several of our New Buildings measures. Therefore, they have also been reviewed preliminary for impacts to cost effectiveness due to these baseline changes and are addressed in this exceptions request as appropriate. This memo describes the four categories of actions Energy Trust is recommending and lists specific measures within each category as well as justification for meeting specific exception criteria.

Measure Grouping

Energy Trust follows specific guidelines from the OPUC regarding cost-effectiveness of measures and programs we support. In general, we are directed to only offer incentives to efficiency projects which pass both the utility and TRC cost effectiveness tests. Measures which do not pass the tests may be included in programs if they meet the following additional conditions specified by UM551¹:

- 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%) less the perceived value of bill savings, e.g. two years of bill savings

¹ OPUC UM551 (OR 94-590) Section 13

- 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

Energy Trust is seeking approval from the OPUC for the following proposed non cost effective measures to receive an exception to the cost effectiveness test under conditions specifically tied to the exception categories in UM 551. The measures are defined below with an explanation of how they will be managed and how we believe they do meet at least one of the UM551 conditions.

There are four categories of measures to be considered:

1. Previously cost effective measures that are no longer cost effective yet meet exception criteria in UM551.
2. Previously cost effective measures that are no longer cost effective and we propose to remove.
3. Previously cost effective measures that are no longer cost effective and we propose reworking them in 2014 and asking for an exception under UM551 for continuation of use through 2015.
4. Recognition of measures that continue to not be cost effective but continue to meet exception criteria in UM551.

1. Measures that are no longer cost effective yet meet exception criteria (appendix a)

Energy Trust is seeking approval of these measures from the OPUC as exceptions to the cost effectiveness test.

The marginally cost-effective measures are:

- Duct insulation
- Freezer Recycling
- Zonal Electric Advanced Builder Option Package (BOP)
- LED A-Lamp
- Ozone Laundry in Motels
- Multifamily insulation
- Select sizes of New Commercial HVAC equipment

The following describes the measures that are borderline cost-effective, provides an explanation for why they are borderline cost-effective, and provides justification for why they should continue to be incentivized.

Duct Insulation: Although a relatively small portion of annual program savings, duct insulation is an important residential (single family and multifamily) weatherization measure within the package of

insulation measures (wall, floor, ceiling, ducts) and is rarely installed without other weatherization measures. As a family of measures, weatherization is known to provide significant non energy benefits to participants. These include thermal comfort, noise reduction, home durability, health benefits, and property value increase. Although not quantified and highly variable from participant to participant, these benefits do influence the participant's investment decision.

It is recommended that this measure be included in the program offering to encourage comprehensive weatherization installations with other measures in the package and recognize the significant non energy benefits of residential weatherization. This is consistent with UM551 conditions A and D.

A: The measure produces significant non-quantifiable non energy benefits.

D: Inclusion of this measure will increase participation in the program

Freezer Recycling: Our refrigerator and freezer recycling program has been popular for many years. Although the refrigerator recycling component does continue to pass the measure level cost effectiveness test, freezer recycling is just below 1.0 at 0.95. A weighted average of program volume by unit type (75% refrigerators, 25% freezers) produces a combined TRC of 1.13.

Because the initiative overall is cost effective and the inclusion of freezers helps to increase participation in the program overall, *it is recommended that freezers be included in the offering. This is consistent with UM551 condition D.*

D: Inclusion of the measure helps to increase participation in a cost effective program

Zonal Electric Advanced Builder Option Package (BOP): This advanced efficiency package for new homes is one of three electrically heated home Energy Star packages where the others are cost effective but this one now has a TRC of 0.80. Developers rarely utilize this package but to exclude it would be challenging and inefficient to manage. *We propose continuing to offer this measure with the exception that it is included for consistency with other DSM programs and inclusion helps to increase participation by developers in a cost effective program consistent with UM551 conditions C and D.*

C: The measure is included for consistency with other DSM program in the region

D: Inclusion of the measure helps to increase participation in a cost effective program

LED A-Lamp (310-740 lumens): This new measure was just developed for use in 2014 but with the prior electric avoided costs. Because it's a new measure, we have limited data on cost to date and the expected impact on our savings forecast is difficult to estimate. Based on general trends of increasing demand for LED solutions, we expect volume to grow rapidly. That high volume is expected to drive down cost. In our current analysis we assume \$23/lamp. With just a 10% decline in cost to \$20.70 this measure passes cost effectiveness. Over the next 2 years it's reasonable to assume the market will drive down costs even lower. We believe that by supporting the highest-efficacy LED products we will help drive the market away from lesser-performing LED products, increase customer acceptance, and encourage further efficacy improvements. *We propose continuing to offer this measure with the exception that inclusion of this measure will increase market acceptance, leading to lower costs consistent with UM551 condition B and it will be cost effective within 2 years.*

B: Inclusion of the measure will increase market acceptance and is expected to lead to reduced cost of the measure

Ozone laundry in motels - gas water heat: Ozone laundry systems are applicable to a variety of commercial facilities with laundry services. Ozone laundry systems save both electricity and gas and have non energy benefits from water and detergent savings as well. With the reduced electric avoided costs ozone laundry in motels with gas water heat has a TRC BCR of 0.92. The measure remains cost effective for motels with electric water heat and for both fuels in other facility types with larger laundry loads such as hotels, nursing homes and industrial laundries. This is a newer and largely unknown technology with promising potential but very low uptake so far. *We propose to continue to offer ozone laundry to motels because it is one iteration of an otherwise cost effective measure, excluding one fuel at one facility type may cause confusion and reduce participation in this measure. This is consistent with UM551 condition D.*

D: Inclusion of this measure will increase participation in the program.

Multi-family insulation: Ceiling and floor insulation for electrically heated multifamily units is no longer cost effective with TRC BCRs of 0.53 and 0.46. Similar to gas SF and MF weatherization measures, the significant non energy benefits to the participant are not included in the cost effectiveness test. To justify the assumption that significant non energy benefits are present, we propose to expand the use of the customer facing simple payback tool. Knowing that participants are making the investment decision in efficiency even though energy savings alone do make the business case for the project implies acknowledgement of other benefits associated with the project. We plan to propose consideration of non-energy benefits for gas weatherization measures in the July 1 report to the OPUC and would therefore like to propose a similar approach for electric weatherization measures. *We propose that this measure be included in the multifamily program offering and recognize the significant non energy benefits of residential weatherization. This is consistent with UM551 conditions A and D.*

A: The measure produces significant non-quantifiable non energy benefits.

D: Inclusion of this measure will increase participation in the program.

New Commercial; 5 ton air source heat pump, 2 ton ground source heat pump, 2 ton water source heat pump, 12.5 ton AC unit: Each of these HVAC equipment types at these sizes is no longer cost effective, with TRC BCRs of 0.65, 0.79, 0.79, and 0.78. In 2013, there were no projects that used these measures but there could be future opportunities for which these sizes would be appropriate. Because each size is one specification within a range of sizes that are cost effective, *we propose that these measures continue to be included for consistency in the market with other cost effective equipment sizes. This is consistent with UM551 condition D.*

D: Inclusion of this measure will increase participation in the program.

2. Measures that are no longer cost effective and will be removed

Energy Trust plans to discontinue the following measures within 2014 when reasonable for the market since we do not see a justification for one of the UM551 exceptions to the cost effectiveness test at this time.

Non cost effective custom measures: A significant portion of our industrial and commercial programs savings are from custom projects, those that are designed specific to a site for a particular end use and baseline assumption. Program staff uses custom analysis tools with avoided costs that are aligned with those used by Energy Trust to review prescriptive measures. With the update to electric avoided costs, about 5-7% of the custom savings from 2013 for these programs would not be considered cost effective going forward.

As the program project tools are updated for the new costs by mid-year 2014, custom projects that do not pass will not be offered project incentives. In some cases, site specific non energy benefits may be quantifiable and will be added to the analysis where possible. Where there is not a particular trend of technology that will no longer pass with a clear exception justification, non-cost effective custom projects will not be approved going forward. As we update custom analysis models, projects which had received an incentive offer prior to the avoided costs update will still be approved for incentives. Only newly analyzed projects with the new tools may be impacted.

Going forward, we propose that where there is a specific UM551 exception that is applicable to a custom project, there is an expedited path for approval from OPUC staff based upon agreed upon conditions. Within our response to UM1622 we propose what this path might look like for custom gas projects and propose extending that proposal to custom electric projects as well.

3. Measures that are no longer cost effective and will be reworked for cost effectiveness in 2014 with an exception to continue through 2015 (appendix b)

Energy Trust is seeking OPUC approval for an exception to cost effectiveness through 2015 for the following measures:

- Ductless heat pumps (single family residential, multifamily, and commercial)
- Rim joist insulation
- CEE Tier III refrigerator
- Server Virtualization
- Convection Ovens
- Market Solutions, 1 bundle, 2 package increments, 2 measures

The following describes the measures and the plans to rework them within 2014 for 2015. For each, we see significant benefits to maintaining current offers in the market until 2015 as opposed to discontinuing these measures now and restarting with revised measures next year. In many cases we are awaiting new market research or studies that will help inform our new program designs. Redesigns will impact the entire delivery structure from distributors to trade allies to PMCs and we need time for messaging and transitioning once the internal work is complete. Finally, each of these measures plays an important role in our program strategies and we value the significance of being able to maintain these offerings for the longer term, such that after reworking, they will be cost effective and not need exceptions.

Ductless heat pumps (DHPs): Energy Trust first started offering DHPs as a pilot effort with NEEA in 2009 with the measure initially just meeting cost effectiveness with a TRC of 1.0. This market has grown significantly (14% of 2013 residential program savings) and is expected to contribute at least that much

savings in 2014. The commercial and multifamily (new and existing) programs see DHPs as a growth area as well, although not as urgently as single family residential. Although we had expected costs to decline over the years, we've seen the number of indoor heat exchangers (indoor heads) per outside compressor exceed one frequently, keeping average project costs up and TRC BCRs at 0.75 for climate zone 1 and 0.80 for climate zone 2.

We propose to continue to offer DHPs in 2014 while working on educating the market and clearly conveying to participants that for the majority of electrically heated homes, most of the energy savings come from the installation of a single indoor head. Participants who choose to install multiple indoor heads will do so for reasons other than energy savings and Energy Trust will continue to offer incentives for these applications. For 2015 we plan to rework our program design to better target the project conditions that result in cost effective savings.

Rim joist insulation: Although a small contributor to overall savings, we propose reworking this measure for 2015 so that it's included as a requirement with wall insulation where accessible and we will no longer offer an incentive as a discrete measure. We propose keeping the measure for continuity until we can implement the changes in 2015.

CEE Tier III refrigerator: CEE Tier III refrigerators are 30% more efficient than Energy Star, and have a TRC of 0.85. While only 0.4% of our 2013 New Products program, this measure is used across residential and commercial programs and is an important connection to maintain in the retail appliance markets. We propose continuing to offer this measure through 2014 as we transition into a new design for 2015 based on recent process evaluation, looking at less costly options and specific model designs. Because we have succeeded in transforming the market through 3 progressively more efficient refrigerator specifications, we believe that the current tier is a good market transformation target.

Server virtualization: Our expectation is that virtualization should be cost effective. Its low BCR is not a result of the new avoided costs, but did come to light during our cost effectiveness review process. Participants appear to have paid substantially more to implement this measure in 2012 and 2013 than they had paid in previous years. This increased cost is about five times more than we had expected when originally testing the measure and results in a TRC of 0.5. We propose to continue to offer this measure through 2015 while we investigate whether the sudden cost increase was a result market changes or if there was technical or data entry error and to correct it. If there is a market reason for the cost increase we will reevaluate the measure, make any program adjustments that might address the cost, or if necessary remove the measure.

Commercial convection ovens: Energy Star electric convection ovens, both full and half size are borderline cost effective at the updated avoided costs. As part of our gas cost effectiveness review, we are in process of reconsidering the cost assumptions for all our commercial cooking equipment measures and we have evidence that the equipment is less costly than we assume. We propose to continue offering convection ovens through 2014 and updating the measures as needed for 2015.

Market Solutions – bundles and elective measures: Energy Trust's New Buildings program designed and developed a 'market specific incentive offering' in 2012 that provides more savings opportunities for the small commercial new construction market. The structure of the new offer is specific to building

type: retail, office, restaurant, grocery, schools, and multi-family (mid-rise and high-rise). For each building type, measures are bundled into “Good, Better, and Best” packages.

In September, 2012, Energy Trust filed an exception request for eight electric and gas measures within the Market Solutions packages which do not pass the TRC cost effectiveness test based on assumptions for performance and cost. The same electric measures which did not pass then continue to not pass with the new avoided costs and are listed in category 4. Additionally one bundle, one elective measure and two increments between tiers are now not passing. These are listed below.

The cost effectiveness testing of the Market Solutions bundles is complicated by the 2014 commercial building code update which will change the baseline, savings, costs, and therefore cost effectiveness of many measures within these bundles. All of the Market Solutions packages will need to be updated because of the code change. Four of the six Market Solutions offerings, those where shell and HVAC measures make up large portions of the savings, are modeled to account for interactive effects. Code increases to shell and HVAC measures will have a ripple effect through these bundles and even the measures not directly affected by the code change must be reanalyzed. All of the non-cost effective measures listed below and in category 4 are parts of modeled bundles. *We propose keeping all these measures in the current packages for now since the packages are slated to be updated next year for the code change and updating the packages twice in a short time span is labor intensive and potentially disruptive to the market.*

Market Solutions – Retail, Good

The Market Solutions Good bundle for the retail sector with electric heating does not pass cost effectiveness with the new avoided costs. The TRC BCR is 0.94. The retail offering has seen the least uptake of all the Market Solutions packages and the program plans to change the lighting requirements of the package to accommodate the display lighting needs of the retail sector. In addition code changes for 2014 are causing the program to revisit the HVAC and shell measures within the bundles and to remodel savings for all measures. The program plans to redesign the offering such that the bundles are all cost effective. *We propose keeping the current offering while the updates are in progress.*

Market Solutions – Increments of packages

- **Schools package from Good to Better**
- **Multifamily package from Good to Better**

For each market segment, the increasing packages are intended to push the market higher and to drive everyone towards Best. Along the way, the Good to Better increments for two market segments do not appear to provide *incremental* cost effective savings for the incremental cost. When these Better packages are compared to the code baseline, they do pass. Energy Trust tests the increment of the “tiers” for all tiered measures to see if the next step is incrementally better for the participant. In these cases, the BCRs are 0.86 and 0.87, close to one but economically slightly worse off than the first step.

Both the Schools and Multifamily offerings are affected by the 2014 code change. Particularly, new requirements for shell and water heating efficiencies will cause all tiers of the bundles to be re-evaluated and perhaps redesigned. The program expects the increments between the tiers to be cost

effective in the future. However, it is possible that the increment will be slightly less than one due to the complexity of designing the bundles. *We propose keeping the currently offering while the updates are in progress and if necessary to accept future borderline incremental cost effectiveness for otherwise cost effective bundles in alignment with UM551 condition D.*

D: Inclusion of the measure helps to increase participation in a cost-effective program

Market Solutions – Schools, Bi-level lighting; Offices, 25% LPD

These lighting electives for school and office packages are now marginally not cost effective with new avoided costs and TRC BCRs of 0.92 for each. As mentioned above, the schools and office offerings are modeled packages that are slated to be reanalyzed in response to the 2014 code change. Additionally, there has been an expectation that the cost of the lighting control for the schools measure is decreasing, as are the costs for many LED technologies applicable to the office measure. The program will review recent project costs to determine if the costs used in the cost effectiveness tests are still accurate. It may be possible these updates will resolve the cost effectiveness of both measures.

Since lighting is a major end use, retaining these elective options are important to the packages. In addition, the program is promoting the schools bi-level lighting measure be included in the next Reach Code and inclusion in the program can prepare the market to meet that goal. This measure can be used as a demonstration to encourage projects to explore new lighting controls schemes and is recommended to be included in the Market Solutions offering. *This is consistent with UM551 condition B.*

B: Inclusion of the measure will increase participation in the program and is likely to influence a downward price trend.

4. Measures that continue to not be cost effective and continue to meet cost effective exception criteria in UM551

Energy Trust is seeking OPUC approval for continuation of exceptions to cost effectiveness tests for the following electric measures:

- Market Solutions recently excepted measures
- Nest pilot
- Solar water heating – commercial and residential
- 1 HP motor
- Commercial vent hoods with VFDs<2HP
- Irrigation measures
- 4', 1,2,and 3 lamp T8 fluorescents within particular instances

Market Solutions measures

In October of 2012 the OPUC granted an exception² to the New Building program to offer the following non-cost effective measures in the Market Solutions offering: radiant heating and cooling in offices, air barriers in offices, fan static pressure reduction in offices and retail, and phantom plug load reduction in offices. Reduced avoided costs have dropped the cost effectiveness of these measures further, while the long lead time of new construction projects has not allowed enough volume of these measures to either influence cost reductions through market volume or better understand costs of new technologies.

These measures are part of the Market Solutions packages which are currently under review due to code changes and there may be changes to the savings or costs of these measures as a result of that work. However, at this time we expect the following measures may continue to not be cost effective for the next few years. For reference, the specific exception categories linked to each measure from the 2012 exception are listed.

Market Solutions - Radiant heating and cooling in offices

A: There are known significant non energy benefits associated with this measure that are hard to quantify such as increased leasable space and increased floor to ceiling height resulting in potential for increased rent.

B: Providing an incentive will increase market adoption and lower the cost of installations over the timeframe.

E: As the initiative launches, it's important to have an offer to the market that won't change often and includes promising core measures like this one from the beginning that has good reason to become cost effective over the next 2 years as project costs continue to be tracked.

Market Solutions - Air Barriers in offices

D: Inclusion of this measure will increase participation in the program, specifically the "Best" track

E: As the initiative launches, this option is important to have from the beginning to combine with others (1) to increase the potential for mechanical system downsizing, which could lower costs, possibly rendering the measure cost-effective on a net cost basis, and (2) because with market acceptance the cost will decline (or be found to be lower than our initial estimate). We will revisit the measure within 2 years to assess how costs evolve.

Market Solutions - Fan Static Pressure Reduction, offices and retail

B: Providing an incentive will increase market adoption and lower the cost of installations over the timeframe

E: As the initiative launches, this option is important to have from the beginning to combine with others (1) to increase the potential for mechanical system downsizing, which could lower costs,

² OPUC Docket No. 1622. October 9, 2012.

possibly rendering the measure cost-effective on a net cost basis, and (2) because with market acceptance the cost will decline (or be found to be lower than our initial estimate). We will revisit the measure within 2 years to assess how costs evolve.

Market Solutions - Phantom Plug Load Reduction, offices

B: Inclusion of this measure will increase participation in the program by offering an option for an end use not currently covered. The cost assumption is just slightly higher than what would need to be seen in the market for a BCR = 1 and increased adoption is likely to influence a downward price trend.

Nest pilot (Web enabled thermostat) – The thermostat used with the Nest heat pump controls pilot is not calculated to be cost effective. This was true from the start of the pilot, but there is high uncertainty about the savings, and we've already received an exception for the pilot, to ascertain the true savings. We propose continuation of the exception through the term of the pilot as is consistent with UM551 condition F.

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

Solar water heating (0.2% program savings) is not cost effective but evaluation results have shown that participants recognize significant non energy benefits when making their purchase decision. These benefits are largely weighted toward how this investment provides environmental benefit through fully offsetting direct use of natural gas. We propose continuing to offer solar water heating to residential customers recognizing the significant non energy benefits participants assign to the business case for their investment, consistent with UM551 condition A.

A: The measure produces significant non-quantifiable non energy benefits.

1 HP motor is very seldom used and has not been cost effective but continued to be offered as one size in a range of sizes that's reasonable for the market place to keep. We propose maintaining this measure consistent with UM551 condition D.

D: Inclusion of the measure helps to increase participation in a cost effective program

Commercial vent hood with VFD < 2HP: Commercial vent hoods with VFDs under 2HP in size continue to not be cost effective but are important to offer within the range of sizes (up to 5HP). We propose that this measure continue to be included in the new commercial offering for schools, groceries and restaurants with other cost effective HP sizes across the range of equipment options. *This is consistent with UM551 conditions D.*

D: Inclusion of this measure will increase participation in the program.

Irrigation measures listed below are a small group within a large list of prescriptive measures we have offered in common with BPA and with ODOE's SPP program for several years. Most of the measures listed below did not pass cost effectiveness tests when first offered.

- Wheel line leveler
- Drain Replacement
- Drop tube or hose extension
- Impact Sprinkler
- Rotating Sprinkler

Due to the desire to be consistent with other DSM programs in the region and include measure to increase participation in a cost effective irrigation program overall, we offered the measures. They are a very small portion of Production Efficiency annual savings (0.7%). *We propose continuing to offer these measures based upon those two exception categories consistent with UM551 conditions C and D.*

C: The measure is included for consistency with other DSM program in the region

D: Inclusion of the measure helps to increase participation in a cost effective program

4', 1, 2 and 3 Lamp T8s within particular instances

Some T8 lighting measures with particular lamp-ballast combinations do not pass the TRC at the new avoided costs. These make up 1.43% of the Existing Buildings program savings, a small portion of the overall lighting savings. Some individual fixture types with 32W and reduced watt (28W and 25W) T8s and some combinations of fewer lamps and higher ballast factors are not cost effective. Providing incentives for only some fixtures and only with prescribed ballast factors would cause confusion in the market and reduce participation. The program total savings for T8s are cost effective.

We propose to continue to offer these measures because these measure increase participation in a cost effective program and for consistency with other DSM programs in the region consistent with UM551 conditions C and D.

C: The measure is included for consistency with other DSM program in the region

D: Inclusion of the measure helps to increase participation in a cost effective program

Summary

Energy Trust of Oregon recommends that the OPUC approves the following non cost-effective electric measures as exceptions to the cost effectiveness test.

- Duct insulation
- Freezer Recycling
- Zonal Electric Advanced Builder Option Package (BOP)
- LED A-Lamp
- Multifamily insulation
- Ozone Laundry in motels

- New Buildings HVAC equipment, particular sizes

Energy Trust is seeking OPUC approval for an exception to cost effectiveness through 2014 for the following measures:

- Ductless heat pumps (single family residential, multifamily, and commercial)
- Split system heat pumps
- Rim joist insulation
- CEE Tier III refrigerator
- Server Virtualization
- Convection Ovens
- Market Solutions measures, one package and 2 package increments

Energy Trust is seeking OPUC approval for continuation of exceptions to cost effectiveness tests for the following electric measures:

- Market Solutions recently excepted measures
- Nest pilot
- Solar water heating –residential
- 1 HP motor
- Commercial vent hoods with VFDs ,<2HP
- Irrigation measures
- 4', 1,2,and 3 lamp T8 fluorescents within particular instances

Appendix A: Measures with exception reasoning							
Measure Name	Program	2013 Savings (kWh)	% 2013 electric program savings	20 yr achievable potential	UCT BCR	TRC BCR	Exception Criteria
Duct Insulation	Existing Homes	32,877	0.09%	small	5.13	0.92	A,D
Freezer Recycling	Products	2,495,942	4.1%	medium	1.00	0.95	D
Zonal Electric Advanced Builder Option Package (BOP)	New Homes	3,426	0.01%	small	2.10	0.80	C, D
Commercial LED A-Lamp (310-740 lumens)	Existing Buildings	new measure in 2014		large	2.06	0.90	B
Ozone laundry, motel, gas water heat	New & Existing Commercial	-	-	small	1.86	0.92	D
Multifamily attic insulation	Existing multifamily	31,956	0.09%	small	1.80	0.53	A
Multifamily floor insulation	Existing multifamily	23,316	0.06%	small	2.50	0.46	A
Heat Pump, AAHP, 5 Ton	New Commercial	-	-	small	2.91	0.65	D
Heat Pump, Ground Source, 2 ton	New Commercial	-	-	small	2.87	0.79	D
Heat Pump, Water Source, 2 Ton	New Commercial	-	-	small	2.87	0.79	D
AC Unit 12.5 ton 2010 Code	New Commercial	-	-	small	2.50	0.78	D
Appendix B: Measures to be reworked for 2015							
Measure Name	Program	2013 Savings (kWh)	% 2013 electric program savings	20 yr achievable potential	UCT BCR	TRC BCR	Exception Criteria
Ductless heat pumps - residential Zone 1	Existing Homes	4,374,650	12.1%	large	3.79	0.75	C, 2014 - rework for 2015
Ductless heat pumps - residential Zone 2	Existing Homes	634,296	1.8%	large	3.83	0.76	C, 2014 - rework for 2015
Ductless heat pumps - multifamily	Existing Multifamily	30,852	0.1%	medium	3.80	0.66	C, 2014 - rework for 2015
Single family rim joist insulation	Existing Homes	10,488	0.03%	small	7.60	0.60	C, 2014 - rework for 2015
CEE Tier III refrigerator - Products	Products, Existing & New MF,	235,678	0.39%	medium	1.00	0.85	C, 2014 - rework for 2015
Server Virtualization	Existing Buildings	356,602	0.44%	medium	1.30	0.50	C, 2014 - rework for 2015
Estar convection ovens	New & Existing Commercial	45,103	0.06%	small	2.60	0.84	C, 2014 - rework for 2015
Market Solutions - Package							
Retail Market Solutions Good (electric)	New Commercial	no savings in 2013, future		growth	3.20	0.94	E, 2014 - rework for 2015
Market Solutions - Increments of packages							
School Market Solution Better- Good	New Commercial	no savings in 2013, future		growth	1.40	0.86	E, 2014 - rework for 2015
Multi-family Market Soultuons Better-Good (electric)	New Commercial	no savings in 2013, future		growth	2.19	0.87	E, 2014 - rework for 2015
Market Solutions - electives							
School Market Solution bi-level lighting elective	New Commercial	no savings in 2013, future		growth	3.86	0.92	E, 2014 - rework for 2015
Offices Market Solutions 25% better than code lighting	New Commercial	no savings in 2013, future		growth	3.40	0.61	E, 2014 - rework for 2015

Appendix C: Measures to continue exceptions							
Measure Name	Program	2013 Savings (kWh)	% 2013 electric program savings	20 yr achievable potential	UCT BCR	TRC BCR	Exception Criteria
Market Solutions - Measures							
Radiant heating and cooling in offices	New Commercial	no savings in 2013, future		growth	2.34	0.94	A,B,E
Air Barriers in offices	New Commercial	no savings in 2013, future		growth	4.46	0.80	D,E
Fan static pressure reduction, office and retail	New Commercial	no savings in 2013, future		growth	4.19	0.87	B,E
Phantom plug load, offices	New Commercial	no savings in 2013, future		growth	2.14	0.89	B
Nest Pilot	Existing Homes	no savings in 2013, future		growth	1.75	0.80	F
Solar water heating - residential	Existing Homes	62,529	0.17%	small	2.32	0.41	A
1hp motor	Existing Commercial	0	0%	small	2.08	0.32	D
Commercial vent hoods with VFD, <2HP	New & Existing Commercial	13,310	0.01%	small	1.80	0.83	D
Irrigation prescriptive measure group							
Irrigation: Wheel Line Leveler	Production Efficiency	528	0.00%	small	0.67	0.15	C,D
Irrigation: Drain Replacement		41,914	0.03%	small	8.21	0.60	C,D
Irrigation: Drop Tube or Hose Extension		6,713	0.00%	small	1.51	0.70	C,D
Irrigation: New or Rebuilt Brass Impact Sprinkler		119,679	0.09%	small	1.45	0.44	C,D
Irrigation: Rotating Sprinkler for low-pressure		750,543	0.54%	small	2.07	0.45	C,D
4', 1 lamp T8 (high performance, 0.85<BF<1.0)	Existing Commercial &	62,498	0.1%	medium	>1	0.85	C,D
4', 3 lamp T8 (high performance, 0.85<BF<1.0)	Production Efficiency	453,826	0.5%	medium	>1	0.91	C,D
4', 1 lamp T8 (25 watt high performance, BF<0.85)		12,289	0.0%	medium	>1	0.47	C,D
4', 1 lamp T8 (28 watt high performance, 0.85<BF<1.0)		31,181	0.0%	medium	>1	0.66	C,D
4', 1 lamp T8 (28 watt high performance, BF<0.85)		132,386	0.2%	medium	>1	0.61	C,D
4', 2 lamp T8 (25 watt high performance, 0.85<BF<1.0)		39,857	0.0%	medium	>1	0.87	C,D
4', 3 lamp T8 (25 watt high performance, 0.85<BF<1.0)		20,977	0.0%	medium	>1	0.83	C,D
4', 3 lamp T8 (25 watt high performance, BF<0.85)		117,086	0.1%	medium	>1	0.85	C,D
4', 3 lamp T8 (28 watt high performance, BF>1.01)		291,311	0.3%	medium	>1	0.88	C,D
4', 4 lamp T8 (25 watt high performance, 0.85<BF<1.0)		1,179	0.0%	medium	>1	0.49	C,D