

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: September 22, 2015

REGULAR CONSENT EFFECTIVE DATE _____ N/A _____

DATE: September 11, 2015

TO: Public Utility Commission

FROM: Elaine Prause *EP*

THROUGH: *J* Jason Eisdorfer and Aster Adams

SUBJECT: Avista Utilities: (Docket No. LC 61) Requests approval of DSM targets and exceptions to cost effectiveness for specific gas energy efficiency measures.

STAFF RECOMMENDATION:

The Commission approve Avista's 2015-2016 Demand Side Management (DSM) targets, grant cost effectiveness exceptions for those measures summarized in Appendix A, and adopt Staff's recommendations outlined in this report.

DISCUSSION:

Background:

On August 31, 2012, Avista Corporation (Avista or Company) filed its 2012 Natural Gas Integrated Resource Plan (IRP). Within the IRP, Avista's DSM Business Plan anticipated that the natural gas DSM portfolio could be marginally cost effective presuming a 25 percent reduction in avoided costs. This presumed decline in avoided costs was replaced with a new avoided cost forecast that was 50 percent lower than the original forecast leading to a non-cost effective DSM portfolio. Avista filed to suspend its natural gas DSM.

On April 30, 2013, within Order 13-159, the Commission directed Avista to continue its DSM programs in Oregon and achieve a minimum savings of 225,000 therms in 2013 and 250,000 therms in 2014. In addition, the Commission required that Avista provide additional reporting within two years.

On March 2, 2015, the Commission provided additional direction to Avista related to DSM in Order No. 15-063, which acknowledges Avista's 2014 IRP Action plan.

Avista filed the required reports on May 1, 2015, in response to the Commission Order Nos. 13-150 in LC 55 and 15-063 in LC 61. Upon receipt of the reports, Staff found the reports inadequate and was initially unable to provide a clear recommendation to the Commission based upon the information provided and asked Avista to provide additional follow-up information (Appendix B). Due to recent loss of key planning staff at the Company, Avista requested additional time to respond to questions. Over the course of a six-week period, Avista was extremely responsive to Staff's requests, answered all clarifying questions and provided additional data to sufficiently address the requirements in the two orders.

Applicable Statutes, Rules and Orders:

Below is a summary of the 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 program 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 Rule (OAR) 860-027-0310 defines conservation as any reduction in electric power or natural gas consumption as the result of an increase in efficiency of energy use, production, or distribution. In OAR 860-027-0310, the definition of "cost effective" refers back to OAR 860-030-0010, which defines cost effectiveness 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.

OAR 860-027-0310(2) sets out the Commission's policies for evaluating programs proposed by energy utilities. Relevant here are the following:

(a) Incentive:

(A) Least-Cost Resources: 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. An energy utility should not be expected to pursue a course of action that involves an identifiable and sustained loss of profits. The most important criterion for evaluating an incentive program

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).

is its effect on the energy utility's resource acquisition strategy. Incentive programs under which the energy utility can earn higher profits by acquiring resources which are not least-cost resources need not be considered, no matter how well they may suit the other criteria.

(B) Cost Minimization: An energy utility should have the incentive to acquire any resource at the minimum total cost. The set of incentives given the energy utility should not merely influence the choice of which resource to acquire, but the manner of its acquisition as well.

(C) Strategic Manipulation: An energy utility should not have incentives to manipulate the program strategically.

(b) Predictability: Program impacts should be predictable to all participants.

OAR 860-030-0005 further requires energy utilities to provide energy audits upon request by customers and states that the initial utility audit must be without charge.

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

- The total resource cost (TRC) test 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
- 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

² See Order 94-590 at page 14, Docket No. UM 551.

³ Id.

⁴ See Order 94-590 at page 15, Docket No. UM 551.

⁵ Id.

⁶ Id.

- 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
- The utility 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

⁷ Id.

⁸ See Order 94-590 at page 18, Docket No. UM 551.

⁹ Id.

¹⁰ Id.

¹¹ See Order 94-590 at page 19, Docket No. UM 551.

- 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

As stated above, in Order No. 13-159, Docket LC 55, the Commission directed Avista to continue its DSM programs in Oregon and achieve a minimum savings of 225,000 therms in 2013 and 250,000 therms in 2014. In addition, the Commission required that Avista provide the following within two years of the order:¹⁴

- Savings and cost effectiveness of the DSM program.
- Actions taken to reduce delivery costs, including administration costs and audit costs.
- Actions taken to increase the number of cost effective efficiency measures in the portfolio.
- An analysis of non-natural gas benefits of existing and proposed DSM measures.
- An analysis of measure lives for all measures.

In Order 15-063, acknowledging Avista's 2014 IRP Action plan, the Commission states, in relevant part:¹⁵

- a. By May 1, 2015, in addition to those items specified in Order No. 13-159, Avista shall file for Commission approval specific DSM targets for the next two to four years. As part of the filing, Avista should:
 - i. Provide Total Resource Cost (TRC) benefit/cost ratios (BCR) and utility cost test (UCT) BCRs for each measure and program that has a TRC or UCT BCR of less than one;

¹² See Order 94-590 at page 20, Docket No. UM 551.

¹³ See Order 94-590 at page 6, Docket No. UM 551.

¹⁴ Order No. 13-159 at pages 8-9, Docket No. LC 55.

¹⁵ Order No. 15-063 at page 2, Docket No. LC 61.

- ii. Provide projected achievable savings for each measure and program identified in item a. above; and
 - iii. Recommend which, if any, measures it is requesting an exception for under docket UM 551, Order No. 94-590.
- b. Participate in NEEA [Northwest Energy Efficiency Alliance]'s new gas market transformation initiative and in the next IRP, include and note specific gas market transformation savings potential that are part of the achievable resource potential.

Analysis:

In its May 1, 2015 report, Avista responded to Commission Order Nos. 13-159 and 15-063 by reporting savings and cost effectiveness of the Company's DSM programs for 2014 and noting steps that it took to make gas programs as cost effective as possible. Avista also provided an analysis of non-energy benefits and measure lives for their measures. Through supplemental responses, the Company provided two-year savings targets, listed BCRs for all measures and made recommendations for measure exceptions under Docket UM 551, Order No. 94-590. In total, all requests outlined in both orders were addressed by the Company.

Staff summarizes below Avista's responses to each Order from the Commission, and Staff's assessment of each response, leading to a listing of Staff's recommendations.

1. Response to Order No. 13-159

The Commission required a report providing an assessment of overall program performance and cost effectiveness improvements made over the two-year portfolio exception timeframe, ending May, 2015.

2014 Program Performance

Order No. 13-159 set a minimum acquisition goal of 250,000 therms. Although the Company achieved 192,955 therms, 77 percent of the 2014 minimum goal, it provided an explanation Staff finds reasonable for low savings achievement and highlighted areas of success.

Of the three main portfolio segments – residential weatherization, residential equipment and commercial – weatherization achieved just 45 percent of its target while the commercial program achieved 85 percent and residential equipment met 90 percent of target. Weatherization measure deemed savings were adjusted downward in 2014 to

better align with actual savings estimates, accounting for the majority of the savings gap. Low gas rates compounded the issue resulting in a lack of a price signal to the customer and a barrier to participation.

Successes in 2014 included a large increase (400 percent) in participation from low income weatherization jobs completed in 2013 and a higher "job to audit ratio" in 2014 where 37 percent of audits resulted in completed measures compared to 29 percent in 2013.

Tables 1 and 2 below are taken from Avista's additional data for the 2015 Evaluation, Measurement and Verification (EM&V) Report, and show the overall portfolio performance for 2014.

Table 1: 2014 Program Summary All Programs					
Program Name	Participants	Total Cost	Incentives	Therms Saved	
RESIDENTIAL PORTFOLIO					
Mandated Residential Audits	627	\$ 192,320.68	NA	NA	
Regular Income Weatherized	233	\$ 243,632.73	\$ 201,407.74	20,160	
Low Income Weatherization	104	\$ 234,005.72	\$ 198,731.70	6,576	
Residential Equipment Incentives Processed	1490	\$ 238,694.15	\$ 212,509.80	80,697	
Total Residential		\$ 908,653.28	\$ 612,649.24	107,433	
COMMERCIAL/INDUSTRIAL PORTFOLIO					
Mandated Commercial Audits	58	\$ 139,968.00	NA	NA	
Commercial/Industrial DSM Measures Completed	99	\$ 298,497.56	\$ 194,246	85,488	
Total Commercial/Industrial		\$ 438,465.56	\$ 194,246	85,488	
Grand Total		\$ 1,347,118.84	\$ 806,896	192,955	

Table 2: Summary of Program and Portfolio Cost Effectiveness with 2014 Avoided Costs

Weighted Average Cost Effectiveness Portfolio Calculations Using 2014 Avoided Costs					
Portfolio	Levelized TRC (\$/therm)	Levelized UCT (\$/therm)	Comparison Avoided Cost (CEL)	TRC Benefit/Cost Ratio	UCT Benefit/Cost Ratio
Residential DSM Programs	\$ 0.73	\$ 0.31	\$ 0.49	0.81	1.57
Comm./Ind. DSM Programs	\$ 0.50	\$ 0.28	**	1.00	1.56
Overall DSM Portfolio	\$ 0.63	\$ 0.29	\$ 0.47	0.86	1.57

** The commercial portfolio is a mix of annual and winter therms. As a result it isn't possible to develop a single comparison avoided cost level using the same methodology applied to other programs.

Program-level cost effectiveness results in Table 2 show an overall portfolio TRC less than 1.0, however, the commercial program TRC is cost effective and the portfolio TRC of 0.86 is encouraging, considering that planned adjustments to program measures and

delivery are expected to improve cost effectiveness. These planned adjustments include removal of some non cost-effective low savings potential measures, reworking ceiling insulation eligibility and adding showerhead measures with quantifiable water savings benefits. The cost reductions and savings increases from these actions will impact future year cost effectiveness analysis.

Actions taken to reduce delivery cost

Avista describes several actions the Company has taken to reduce costs to deliver programs, which include:

- Increased messaging to residential audit recipients resulted in higher job to audit ratio;
- Streamlined incentive processes, minimizing administrative costs;
- Limited free in-home audits to homes built prior to 1980 building code changes, lowering audit costs; and
- Exploring options to further streamline online audits with new software tools.

Actions underway to increase cost effective measures

The Company is working to integrate new measures into its portfolio for Oregon by pulling upon planning resources and measures adopted in Washington and by other utilities in Oregon. These additions include:

- Currently working to adopt smart thermostats in Oregon based upon existing pilots in Washington to replace the current non cost-effective thermostat measure;
- Adding residential showerheads;
- Reworking ceiling insulation eligibility; and
- Planning to eliminate some non-cost-effective measures.

Review of non-energy benefits and measure lives

Avista addressed non-energy benefits in the May 1, 2015 report, as well as within the Company's supplemental response relative to specific measure exceptions. For example, electric energy savings due to lower air conditioning loads with weatherized homes and businesses is one area Avista identified that currently is not captured in the measure analysis.

Staff recommends that Avista pursue further quantification of other fuel savings benefits and incorporate these values into cost effectiveness calculations.

Summary

The Company provides examples of areas where it has worked to improve overall DSM portfolio cost effectiveness and outlined commitments for future improvements and new cost-effective measure additions. In addition, new planning staff was recently added to help meet the need for analysis specific to the Oregon service territory. Although the 2015 portfolio results showed a TRC of less than 1.0, if the Company continues with proposed changes, the overall cost effectiveness is expected to improve over the next few years.

2. Response to Order No. 15-063

This order requires specific savings targets incorporating updated program strategies, measure assumptions and market information. In addition, the Company was asked to reflect upon which non-cost-effective measures met exception criteria within UM 551 and to clearly define that linkage in any exception requests. If measure exceptions could not be justified by applying UM 551 exception criteria, the Company should propose reworking or removing the measures.

Two-year savings targets

Avista's May 1, 2015 report only addressed 2015 targets for DSM programs, and did not extend targets the requested two to four years from Order No. 15-063. However, upon requests from Staff, Avista provided targets from 2015 through 2016 directly from the most recent conservation potential assessment (CPA).

This CPA informed the DSM portion of the Avista 2014 IRP, yet provided what Staff considered somewhat perplexing results that were challenging to interpret. For example, residential savings targets from the study for 2014 were much lower than actually achieved in 2014 by a factor of 10 and commercial savings projections were close to double the actual 2014 commercial savings. Although, in total, the portfolio savings targets appeared reasonable compared to current actual results, the near term market pipeline seemed to provide better indications of goals than looking back to the CPA results. The CPA only included cost effective resources, meaning that measures for which Avista seeks exceptions are not incorporated in the targets.

Upon review of these issues with Avista, both Staff and Avista agreed that taking a new perspective in setting targets was in order. In response, Avista offered additional data to support their new proposed targets provided in Table 3 below. In preparation for the next IRP, Avista will update the CPA.

Table 3. Two-year targets

DSM Goals		
Program	2015	2016
Residential	99,455	105,429
Commercial	80,073	84,076
Total	179,528	189,505

The following plot, Figure 1, shows how these targets compare to past accomplishments by sector.

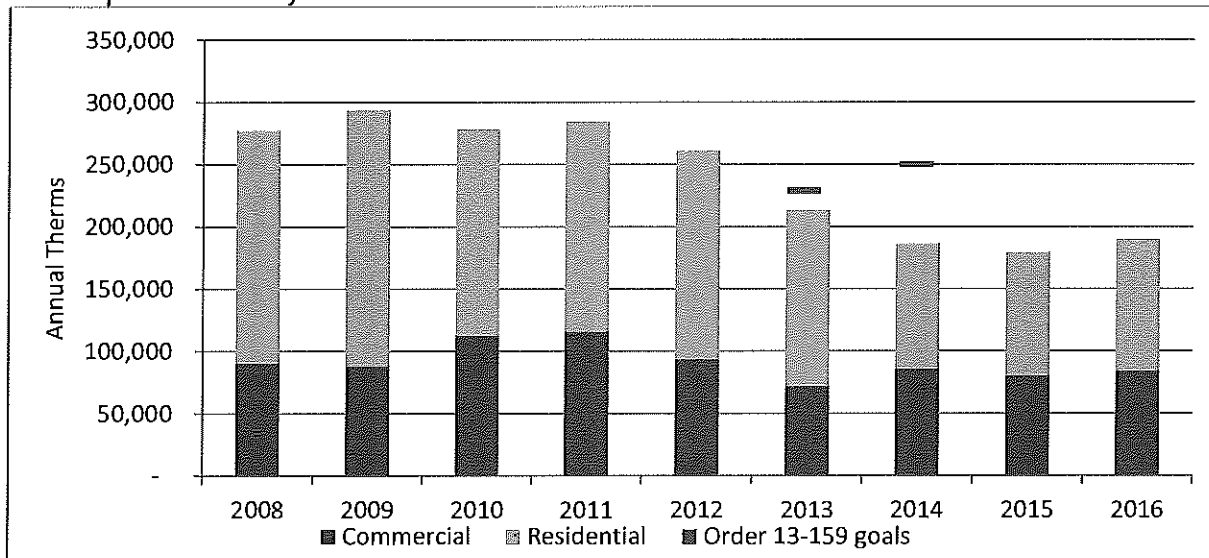


Figure 1. Avista annual therms actual through 2014 and 2015/2016 targets

Although the new two year targets are lower than where the Commission originally set 2013 and 2014 targets (225,000 and 250,000 therms) Staff interprets the 2015 and 2016 targets as a general resetting of goals from which future growth is anticipated.

Through incorporation of new measures, savings are expected to begin to increase. Based on the reasoning and planning analysis provided by the Company (see Appendix B), Staff agrees that these targets for 2015 and 2016 are reasonable and should be approved. While the Company works to implement new measures, residential weatherization savings are expected to decline with elimination of floor insulation and windows and commercial savings will likely remain flat with continued low avoided costs impacting the business case for investments.

Measure exception requests

Below is a list of measures and programs for which Avista is seeking exceptions or planning to remove or rework. Avista provided rationale for each of the following measures that it proposes to keep based on the UM 551 exception criteria in Order No. 94-590:

Residential

- Programmable thermostats
- Windows
- Duct insulation
- Caulking, weather-stripping, and insulation of water pipes
- Wall insulation
- Floor insulation

Commercial

- Furnaces
- Fryers
- Griddles
- Single rack ovens
- Dishwashers

Staff reviewed each measure exception request and agrees with several of Avista's exception justifications as seen in Appendix A, Tables 1 and 2, with a few differences. Below is a summary of each exception request from Avista, on a measure by measure basis, using the UM 551 criteria as the foundation. Staff's recommendations are provided with each request.

Residential thermostats

Avista proposal

The residential programmable thermostat program has a TRC of 0.77. The Company will use data from the Washington Smart Thermostat program as well as other regional programs to change the focus to Smart Thermostats pending favorable cost effectiveness evaluations. Avista will also refine the entry requirements, as well as the incremental costs and savings. The Company's request is to continue offering an incentive for programmable thermostats until April 1, 2016, or until the Smart Thermostat program is launched, whichever comes first.

Staff position

Staff agrees that allowing a temporary exception for programmable thermostats while Avista works to incorporate the smart thermostat measure it is developing in Washington State is reasonable. This measure currently provides a significant portion of their portfolio savings (8 percent) yet it does not meet UM 551 criteria. The smart thermostat approach has a reasonable chance of becoming a cost-effective measure with a high likelihood of costs coming down with market acceptance and more savings than programmable thermostats.

Residential windows

Avista proposal

The Company is proposing the elimination of window incentives by April 1, 2016. However, Avista will look at opportunities to continue to offer incentives for this and other measures based on the possible restructuring of current programs. The Company believes there is opportunity based on the Commission's favorable ruling concerning incentive caps.

Staff position

Staff agrees that removing the window measure in its current state is most reasonable with a TRC BCR of 0.3, even when standard vinyl windows without "extra costs" for other non-energy savings qualities are assumed. As the Company looks to rework this measure, Staff encourages Avista to review the approach that Energy Trust has adopted in considering windows as replacement measures, which is considering only the incremental cost of the more efficient windows, rather than the entire cost of the window as a retrofit measure. The new review would also take into account recent updates to Energy Star U-value ratings for window efficiency.

Residential duct insulation

Avista proposal

The residential duct insulation program has a TRC of 0.9. Avista's request is to continue offering this measure under exception A - *Produces significant non-quantifiable non-energy benefits* and exception E - *Cannot be changed frequently, and will be cost-effective during the period the program is offered.*

This measure involves insulating un-insulated or marginally insulated metal heating and cooling ducts. The potential for condensation as a result of hot or cold moist air

contacting the duct is a potential health issue as mold can grow in this environment. An additional non-quantifiable benefit is increased comfort, especially in rooms furthest from the heat source. The Company also believes that with a TRC of 0.9 this measure has been and will again, be cost-effective during the period the program is offered.

Staff position

Staff supports Avista's exception request under UM 551 exception criteria A and E.

Residential caulking, weather-stripping, and insulation of water pipes

Avista proposal

Insulation of water pipes, weather-stripping and caulking, as specified under OAR 860-030-0010, is included with the installation of new measures but has a TRC of 0.4. Avista requests to continue these measures under exception G - *The measure is required by law or is consistent with Commission policy and/or direction.*

Staff position

Staff agrees with Avista's exception request under UM 551 exception G.

Residential wall and floor insulation

Avista proposal

Wall insulation and floor insulation have TRCs of 0.50 and 0.44 respectively. Avista requests to continue to offer wall insulation under exceptions A - *Produces significant non-quantifiable non-energy benefits,* and C - *Needed for consistency with other DSM programs in the region.* Non-quantifiable benefits include the elimination of condensation and mold in and on wall surfaces. The development of mold in the living environment is a significant health issue. In addition, there are a number of regional programs that still offer incentives for wall insulation.

The Company is proposing the elimination of floor insulation incentives by April 1 2016. However, Avista will look at opportunities to continue to offer incentives for this and other measures based on the possible restructuring of current programs. The Company believes there is opportunity based on the Commission's favorable ruling concerning incentive caps.

Staff position

Staff supports Avista's exception request for wall insulation under UM 551 exception A and exception C. Maintaining wall insulation with a TRC of 0.5 would be consistent with other programs in the region providing some access to wall insulation.

With a TRC of less than 0.5, Staff agrees with Avista's proposal to discontinue floor insulation by April 1, 2016 and encourages the Company to revisit the incentive design for this measure and explore whether requiring ceiling insulation and capping the incentive for floor insulation would be desirable, considering the additional complexity in delivery associated with this type of program design. If Avista sees this option as desirable for customers, it is encouraged to provide a proposal for a new design prior to ending the current floor insulation measure.

Commercial furnaces

Avista proposal

The commercial prescriptive furnace measure has a TRC of 0.72. The Company proposes that additional M&V be performed to validate original assumptions concerning cost and savings and consistency with other regional offerings. The Company request to continue this measure is under exception C - *The measure is needed for consistency with other DSM programs in the region.*

Staff position

Staff does not support Avista's exception request under UM 551 exception criteria C, because the case that it is needed for consistency with other DSM programs in the region does not appear well supported. However, Staff does support asking the Company to take another look at the underlying assumptions for this measure, including incremental cost and measure life, and comparing with other programs in the region. Unless incorporating updated assumptions would result in a cost effective measure, Staff recommends removing this measure as a prescriptive offer and only providing incentives on a custom, site specific basis.

Commercial food service; fryers, griddles, single rack ovens, dishwashers

Avista proposal

The cost effectiveness of the commercial food service program was affected primarily by one measure, which was fryers. Specifically, there were a few fryers which had very high customer cost and their poor TRC performance affected the rest of the food service program.

The average TRC of a “typical” high efficiency fryer is 1.26. The Company is proposing that fryers be segmented between what is considered the typical fryer project and the higher end fryers. Typical high efficiency fryers would still qualify as a prescriptive measure while the high end fryers would be evaluated as site specific. It should also be noted that the high end fryers have non gas benefits that the typical high efficiency fryer does not have. Evaluating these units on a site specific basis will allow for inclusion of those NEBs in the TRC calculation.

The Company is proposing exception criteria B, D, and E for all listed food service and dishwasher measures with a TRC below 1.0. In each case there is lost opportunity if not installed as part of a larger remodel, continuance of programs may lead to reduced costs, and the measure cannot be changed frequently and may become cost effective within the measure life.

Staff position

Staff supports Avista’s exception request under UM 551 exception criteria D and E for food service equipment with TRCs below 1.0 including dishwashers, griddles, and single rack ovens. Combination and convection ovens with TRC BCRs less than 0.5 will no longer be offered as prescriptive measures but will transition to site specific, custom analysis. Regarding gas fryers, staff supports splitting the fryer measure into two tiers, prescriptive for the high volume typical units and custom analysis for the high end fryers. The reworked prescriptive fryer measure would reflect average assumptions seen today which result in a TRC BCR of 1.26 and only cost effective high end models would be provided incentives on a site specific basis.

RECOMMENDATIONS:

Based on Avista’s original submittal and follow up responses to Staff’s requests for more information, Staff believes Avista met the requirements outlined by the Commission in Order Nos. 13-159 and 15-063. The two year targets as proposed by Avista reflect newly implemented cost savings strategies and proposed measure additions that should further improve the overall cost effectiveness of the energy efficiency portfolio for Customers.

Appendix A contains a complete list of the measures for which Avista is requesting exceptions and Staff’s final recommendations.

In addition to the individual measure exception request recommendations, Staff offers the following recommendations:

- Although Avista was very responsive throughout the review process, providing more comprehensive responses in the future will expedite the Commission review process.
- In addition to tracking annual performance through annual therms acquired compared to goal, the Company should report future portfolio performance on a levelized cost basis. A levelized cost metric introduces the importance of persistence of measures and provides a consistent basis when comparing resource options.
- Staff recommends that Avista undertake market research on efficiency levels for residential furnace sales in its territory. Although this measure currently has a TRC BCR of 1.0 and does not need an exception, Staff believes the market baseline is becoming more efficient than currently assumed for this measure definition. Market research related to informing the market baseline for furnace efficiency levels in Avista's Oregon region would be beneficial to track and incorporate into future measure definition if and when updates are needed.
- Staff recommends Avista pursue further quantification of other fuel savings benefits and incorporate those values in cost effectiveness analyses. Examples include benefits of electric energy savings related to reduced air conditioning usage when insulation is installed and water savings related to efficient showerheads.
- Where the Company sees opportunities to revise current DSM tariffs to provide greater flexibility in making minor changes or enhancements that benefit ratepayers while reducing administrative workload in managing regulatory process, Staff recommends Avista staff work with the Commission Staff to propose changes.
- Although the Company's response reflects positive efforts to improve program cost effectiveness, Staff suggests Avista explore other options to program delivery, such as contracting with Energy Trust. As other gas utilities in Oregon have shifted programs to Energy Trust when transitioning to decoupling, Avista should consider this option.

PROPOSED COMMISSION MOTION:

Approve Avista's 2015-2016 DSM targets and cost effectiveness exceptions to those measures summarized in Appendix A and adopt Staff's recommendations outlined in this report.

Appendix A

Table 1: Residential Measures with < 1 TRC

Measure	TRC BCR	UCT BCR	2014 Savings (therms)	% of 2014 Program Savings	% of 2014 Portfolio savings	Future Resource Potential	Avista Proposed Action	Staff Recommendation
Programmable Thermostats Program:								
Thermostats	0.78	1.74	15,147	100%	8%	Large	Continue while transitioning program to smart thermostats.	Temporary exception while transitioning to new cost effective measure
TOTAL			15,147	100%	8%			
Residential Weatherization Program:								
Windows	0.3	0.5	1,129	5.60%	0.60%	Small	Discontinue and explore incentive cap options	No exception - plan to phase out or rework
Duct Insulation	0.9	1.5	517	3.10%	0.30%	Small	Continue under core residential program using exception A and E	Exception - UM 551 Criteria A and E
Caulking, Weather stripping, pipe insulation	0.4	0.6	778	3.90%	0.40%	Small	Continue under core residential program using exception G	Exception - UM 551 Criteria G
Wall Insulation	0.5	0.6	1,732	8.60%	0.90%	Small	Continue under core residential program using exception A, and C	Exception - UM 551 Criteria A
Floor Insulation	0.44	0.7	4,540	22.50%	2.40%	Moderate	Discontinue and explore incentive cap options	No exception - plan to phase out or rework with cap design/ceiling requirement
TOTAL			8,794	44%	5%			

Table 2: Commercial Measures with < 1 TRC

Measure	TRC BCR	UCT BCR	2014 Savings (therms)	% of 2014 Program Savings	% of 2014 Portfolio savings	Future Resource Potential	Avista Proposed Action	Staff Recommendation
Commercial Equipment								
Furnaces	0.72	1.5	5,645	6.6%	3%	Moderate	Continue under prescriptive commercial program using exception C	No exception - plan to phase out or rework or shift to custom only
TOTAL			5,645	6.6%	3%			
Commercial Prescriptive Food Service								
Fryers	0.72	1.9	10,100	11.80%	5.40%	Moderate	Continue offering incentives on all cost effective measures. Continue offering incentives on fryers, griddles, and single rack ovens under exception criteria B, D, and E. All other measures revert to site specific.	Rework prescriptive fryers as proposed.
Gas Griddle	0.65	1.6	0	0.00%	0.00%	Small		Exception for griddles and single rack ovens - UM 551 Criteria D and E.
Single Rack Oven	0.76	2.51	0	0.00%	0.00%	Small		Convection and combination ovens rework to custom analysis
Conv Oven	0.48	1.5	646	0.80%	0.30%	Small		
Combination Oven	0.36	1.47	0	0.00%	0.00%	Small		
Commercial Prescriptive Dish Washers								
Washer HT	0.48	1.3	405	0.50%	0.20%	Small	Continue under core food service program using exception criteria B, D, and E	Exception - UM 551 Criteria D and E
UC Washer	0.43	1.4	217	0.30%	0.10%	Small		
Dish Washer Door Low Temp	0.86	1.72	0	0.00%	0.00%	Small		
Dish Washer Single Tank Conveyor High Temp	0.53	1.22	0	0.00%	0.00%	Small		
Dish Washer Single Tank Conveyor Low Temp	0.54	1.24	0	0.00%	0.00%	Small		
Dish Washer Multi Tank Conveyor High Temp	0.77	1.54	0	0.00%	0.00%	Small		
Dish Washer Multi Tank Conveyor Low	0.62	1.24	0	0.00%	0.00%	Small		
TOTAL			17,013	19.90%	9.10%			

Appendix B – Supplemental responses from Avista – Part 1, Goals

2015 & 2016 DSM Goals

DSM Goals		
Program	2015	2016
Residential	99,455	105,429
Commercial	80,073	84,076
Total	179,528	189,505

2015 Assumptions

- Residential weatherization results will be less due to the elimination of the floor insulation measure.
- Setting the maximum attic insulation value to R15 will reduce the number of attic jobs by approximately 30 percent to 40 percent. In addition, data indicates that homes with existing insulation values below R15 are generally smaller and therefore will impact the claimed savings.
- Avista currently links window incentives to attic, wall, or floor insulation. Approximately 22 percent of attic jobs include windows. While it isn't known how many of those customers installed attic insulation in order to qualify for the window incentive, it is expected that some customers will choose to forgo insulation due to the elimination of window incentives.
- Commercial site specific savings is higher in the first half of 2015 as compared to 2014 and the trend is expected to continue through the end of the year. However, the lower avoided costs could impact final results. An analysis of the 2014 commercial portfolio using the avoided costs from the most recent IRP reduced therm savings by 26 percent. It is expected that the prescriptive measures will produce results similar to 2013 and 2014.

2016 Assumptions

- Residential results include savings related to a showerhead program currently under review.
- Also reflected in the results is the transition to smart thermostats. While smart thermostats will save more energy over conventional programmable thermostats, fewer units will be installed due to cost and difficulty for self-install.
- Commercial results will remain flat in 2016.

Appendix B – Supplemental responses from Avista – Part 2, Exceptions

Additional data request for 2015 EM&V Report for Oregon

Below please find the 2014 savings recalculated with 2014 avoided costs as well as more description around the exceptions requested for measures or programs operating under a TRC or UCT of 1.

Table 1: Summary of Program savings

Table 1: 2014 Program Summary All Programs				
Program Name	Participants	Total Cost	Incentives	Therms Saved
RESIDENTIAL PORTFOLIO				
Mandated Residential Audits	627	\$ 192,320.68	NA	NA
Regular Income Weatherized	233	\$ 243,632.73	\$ 201,407.74	20,160
Low Income Weatherization	104	\$ 234,005.72	\$ 198,731.70	6,576
Residential Equipment Incentives Processed	1490	\$ 238,694.15	\$ 212,509.80	80,697
Total Residential		\$ 908,653.28	\$ 612,649.24	107,433
COMMERCIAL/INDUSTRIAL PORTFOLIO				
Mandated Commercial Audits	58	\$ 139,968.00	NA	NA
Commercial/Industrial DSM Measures Completed	99	\$ 298,497.56	\$ 194,246	85,488
Total Commercial/Industrial		\$ 438,465.56	\$ 194,246	85,488
Grand Total		\$ 1,347,118.84	\$ 806,896	192,955

Table 2: Summary of Program and Portfolio Cost Effectiveness with 2014 Avoided Costs

Weighted Average Cost Effectiveness Portfolio Calculations Using 2014 Avoided Costs					
Portfolio	Levelized TRC (\$/therm)	Levelized UCT (\$/therm)	Comparison Avoided Cost (CEL)	TRC Benefit/Cost Ratio	UCT Benefit/Cost Ratio
Residential DSM Programs	\$ 0.73	\$ 0.31	\$ 0.49	0.81	1.57
Comm./Ind. DSM Programs	\$ 0.50	\$ 0.28	\$ -	1.00	1.56
Overall DSM Portfolio	\$ 0.63	\$ 0.29	\$ 0.47	0.86	1.57

* Customer incremental costs have been reduced by the value of BETC payments received by the customer in accordance with the accepted standard practice TRC test methodology.

** The commercial portfolio is a mix of annual and winter therms. As a result it isn't possible to develop a single comparison avoided cost level using the same methodology applied to the other programs in the portfolio.

*** Commercial NEB's have been added where they could be quantified.

Table 3: Summary of Programs over TRC/UCT of 1

Residential > 1 TRC

Measure	TRC BCR	UCT BCR	2014 Savings (annual therms)	% of 2014 Program Savings	% of 2014 Portfolio savings	Future Resource Potential	Proposed Action
Single Family Attic Insulation:							Continue under Core Residential Program
Attic	1.61	1.2	11,365	56.4%	5.9%	Moderate	
TOTAL			11,365	56.4%	5.9%		
Single Family HVAC:							Continue under Core Residential Program
Furnace	1.00	2.26	65,550	100.0%	34.0%	Large	
TOTAL			65,550	100%	34%		

Commercial > 1 TRC

Measure	TRC BCR	UCT BCR	2014 Savings (annual therms)	% of 2014 Program Savings	% of 2014 Portfolio savings	Future Resource Potential	Proposed Action
Commercial							Continue under Core Commercial Program
Site Specific	1.01	1.6	61,025	71.4%	32.7%	High	
Commercial							Continue under Core Commercial Program
Prescriptive Shell	1.17	2.4	7,450	8.7%	4.0%	Moderate	
TOTAL			68,475	80.1%	36.7%		

Table 4: Summary of Programs under TRC/UCT of 1
 Residential < 1 TRC

Measure	TRC BCR	UCT BCR	2014 Savings (annual therms)	% of 2014 Program Savings	% of 2014 Portfolio savings	Future Resource Potential	Proposed Action
Programmable thermostats:							Continue for 2015 while transitioning program to smart thermostats.
Thermostats	0.76	1.74	15,147	100.0%	7.9%	Large	
TOTAL			15,147	100%	8%		
Single Family Windows:							Continue, using a fixed cost per sq/ft. using exception criterion A and D
Windows	0.1	0.5	1,129	5.6%	0.6%	Small	
Single Family Ducts							Continue under core residential program using exception A and E
Ducts	0.9	1.5	617	3.1%	0.3%	Small	
Caulking and Weather stripping and pipe	0.4	0.6	776	3.9%	0.4%	Small	Continue under core residential program using exception G
Single Family Wall Insulation:							Continue under core residential program using exception A, and C
Wall	0.50	0.6	1,732	8.6%	0.9%	Small	
Single Family Floor Insulation:							Discontinue and explore incentive cap options
Floor	0.44	0.7	4,540	22.5%	2.4%	Moderate	
TOTAL			8,794	44%	5%		

Commercial < 1 TRC

Measure	TRC BCR	UCT BCR	2014 Savings (annual therms)	% of 2014 Program Savings	% of 2014 Portfolio savings	Future Resource Potential	Proposed Action
Commercial Prescriptive HVAC furnaces							Continue under prescriptive commercial program using exception C
Furnaces	0.72	1.5	5,645	6.6%	3.0%	Moderate	
Commercial Prescriptive Food Service							Continue offering incentives on all cost effective measures. Continue offering incentives on fryers, griddles, and single rack ovens under exception criteria B, D, and E. All other measures revert to site specific.
Fryers	0.72	1.9	10,100	11.8%	5.4%	Moderate	
Conv Oven	0.48	1.5	646	0.8%	0.3%	Low	
Gas Griddle	0.65	1.60	0	0.0%	0.0%	Low	
Double Rack Oven	1.48	3.08	0	0.0%	0.0%	Low	
Combination Oven	0.36	1.47	0	0.0%	0.0%	Low	
Single Rack Oven	0.76	2.51	0	0.0%	0.0%	Low	
10 Pan Steamer	2.32	4.21	0	0.0%	0.0%	Low	
6 Pan Steamer	2.32	4.21	0	0.0%	0.0%	Low	
5 Pan Steamer	2.32	4.22	0	0.0%	0.0%	Low	
4 Pan Steamer	2.32	4.21	0	0.0%	0.0%	Low	
3 Pan Steamer	2.32	3.79	0	0.0%	0.0%	Low	
Commercial Prescriptive Dish Washers							Continue under core food service program using exception criteria B, D, and E
Washer HT	0.48	1.3	405	0.5%	0.2%	Low	
UC Washer	0.43	1.4	217	0.3%	0.1%	Low	
Dish Washer Door Low Temp	0.86	1.72	0	0.0%	0.0%	Low	
Dish Washer Single Tank Conveyor High Temp	0.53	1.22	0	0.0%	0.0%	Low	
Dish Washer Single Tank Conveyor Low Temp	0.54	1.24	0	0.0%	0.0%	Low	
Dish Washer Multi Tank Conveyor High Temp	0.77	1.54	0	0.0%	0.0%	Low	
Dish Washer Multi Tank Conveyor Low Temp	0.62	1.24	0	0.0%	0.0%	Low	
Total			17,013	19.9%	9.1%		

Explanation for programs under a TRC/UCT of 1 requesting exception under UM 551 Residential Programmable Thermostat: The residential programmable thermostat program has a TRC of 0.77. The Company will use data from the Washington Smart Thermostat program as well as other regional programs to change the focus to Smart Thermostats pending favorable cost effectiveness evaluations. Avista will also refine the entry requirements, as well as the incremental costs and savings. Our request is to continue offering an incentive for this program through the end of 2015 or until the Smart Thermostat program is launched, whichever comes first.

Residential Shell Measure Windows: Historically windows have not had a TRC greater than one, but are used as an incentive for attracting customers to the other cost effective programs and measures. Current program guidelines require that windows be installed with at least one major shell measure and that existing windows are single glass. These requirements would not change under this proposal. Additionally, the high costs for windows indicates that the customer is gaining some non-quantifiable non-energy benefit for purchasing specialty wood, Fiberglas, and or other window product without gains in efficiency over basic vinyl. In an attempt to increase the TRC of this measure, the Company will evaluate the use of a fixed incremental cost based on the actual cost or the average cost of vinyl high efficiency windows whichever is less. Our request to continue offering this measure is under exceptions A - *Produces significant non-quantifiable non-energy benefits*, C - *Are needed for consistency with other DSM programs in the region*, and D - *will help to increase participation in a cost-effective program*.

It is Avista's experience that many homes with single glass windows experience issues with condensation and ultimately mold. The negative health effects of mold in a living environment are well documented and the Company believes that this along with comfort and security are just some of the non-quantifiable energy benefits of windows. The Company also notes that window upgrades are available through many utility programs throughout the region. In addition, window upgrades have a demonstrated track record as a measure that opens the door to other efficiency opportunities.

Residential Shell Measures Insulation: Wall insulation and floor insulation have a TRC of .50 and .44 respectively. Our request to continue offering wall insulation under exceptions A - *Produces significant non-quantifiable non-energy benefits*, C - *Are needed for consistency with other DSM programs in the region*. Non-quantifiable benefits include the elimination of condensation and mold in and on wall surfaces. As with windows, the development of mold in the living environment is a significant health issue. In addition, there are a number of regional programs that still offer incentives for wall insulation.

The Company is proposing the elimination of floor insulation incentives by the end of 2015. However, Avista will look at opportunities to continue to offer incentives for this and other measures based on the possible restructuring of current programs. The Company believes there is opportunity based on the Commission's favorable ruling concerning incentive caps.

Residential Duct Insulation: The residential duct insulation program has a TRC of 0.9. Our request is to continue offering this measure under exception A - *Produces significant non-quantifiable non-energy benefits* and exception E - *Cannot be changed frequently, and will be cost-effective during the period the program is offered.*

This measure involves insulating un-insulated or marginally insulated metal heating and cooling ducts. As with windows, the potential for condensation as a result of hot or cold moist air contacting the duct is a potential health issue as mold can grow in this environment. An additional non quantifiable benefit is increased comfort, especially in rooms furthest from the heat source. The Company also believes that with a TRC of 0.9 this measure has been and will again, cost-effective during the period the program is offered.

Residential Caulking, Weather-stripping, and Insulation of Water Pipes: Insulation of water pipes, weather-stripping and caulking, as specified under OAR 860-030-0010, is included with the installation of new measures for either program and considered cost effective. We request to continue these measures under exception G - *The measure is required by law or is consistent with Commission policy and/or direction.*

Commercial Prescriptive Furnace Program: The commercial prescriptive furnace program has a TRC of 0.72. The Company proposes that additional M&V be performed to validate original assumptions concerning cost and savings and consistency with other regional offerings. We request to continue this measure under exception C - *The measure is needed for consistency with other DSM programs in the region.*

Commercial Food Service Program: The cost effectiveness of the commercial food service program was affected primarily by one measure which was fryers. Specifically there were a few fryers which had very high customer cost and their poor TRC performance affected the rest of the food service program.

The average TRC of a "typical" high efficiency fryer is 1.26. The Company is proposing that fryers be segmented between what is typical and the higher end fryers. Typical high efficiency fryers would still qualify as a prescriptive measure while the high end fryers would be evaluated as site specific. It should also be noted that the high end fryers have non gas benefits that the typical high efficiency fryer does not have. Evaluating these units on a site specific basis will allow for inclusion of those NEBs in the TRC calculation.

The Company is proposing exception criteria B, D, and E for all listed food service and dishwasher measures with a TRC below 1.0. In each case there is lost opportunity if not installed as part of a larger remodel, continuance of programs may lead to reduced costs, and the measure cannot be changed frequently and may become cost effective within the measure life.