

AVU-G-15-03

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## Introduction

Avista Utilities has requested the regulatory authority to launch a natural gas demand-side management (DSM) portfolio and recover the anticipated \$1.25 million program expense through a Schedule 191 surcharge on retail rates. The Company has also proposed revisions to the Schedule 190 tariff governing the operations of that proposed DSM portfolio. The Company had previously withdrawn its natural gas DSM portfolio, with Commission approval, due to the substantial reduction in natural gas avoided cost. At that time the Company represented that the reduction in the avoided cost rendered it impossible to deliver the cost-effective performance necessary to benefit consumers.

There are several issues raised by the Company's proposal that bear closer scrutiny to include:

- The use of an avoided cost forecasts that is substantially higher than the expected case avoided cost scenario and the medium case avoided cost with carbon legislation represented by Avista in its most recent (2014) natural gas Integrated Resource Plan<sup>1</sup>.
- The Company proposes to apply a real (inflation adjusted) discount rate to a nominal avoided cost forecast.
- The Company's calculation of both the Utility Cost Test (UCT) and Total Resource Cost (TRC) test are not compliant with industry standards for such metrics.
- The Company projects the performance of the proposed Idaho natural gas DSM performance to be far higher than the independently evaluated performance of the same portfolio within its Washington jurisdiction.
- A brief review of the Company's supporting work papers has led to the discovery of a number of spreadsheet errors.

The comments to follow outline some of the major analytical and policy issues raised by Avista's filing and conclude with a recommendation for denying the Company's request pending a more detailed analytical and policy discussion among a broader cross-section of interested parties.

### Revisions to the Avoided Cost Stream

Avista has chosen to base its cost-effectiveness projections upon an avoided cost stream that is substantially higher than that contained within its 2014 natural gas IRP, both with and without the assumption of carbon legislation<sup>2</sup>. The IRP process provides an opportunity for a fully transparent and comprehensive analysis of supply and demand-side resource cost with provisions for public involvement through a Technical Advisory Committee. The IRP allows all resources to compete on a level playing field so as to lead to a selection of an optimal resource mix.

In bypassing this process and substituting drastically higher avoided cost values the Company is unnecessarily creating a biased criterion for resource selection. There have not been any changes in natural gas markets of such a magnitude so as to justify deviating from the Commission recognized 2014 IRP results.

In addition to the revision to the core avoided cost forecast itself the Company has added an estimate of future total (fixed and variable) capacity costs based upon a calculation for allocating average capacity costs for ratemaking purposes. This approach is inconsistent with the incremental nature of the calculation of avoided cost stream. This is a substantial change from accepted approaches for resource planning, DSM business planning and for DSM cost-effectiveness evaluation.

In addition to the procedural and methodological faults noted above, the Company's estimate of avoided cost contains several spreadsheet reference errors<sup>3</sup> that:

1. Utilize the Company's higher winter avoided cost forecast in the calculation of the annual avoided cost.
2. Layered upon the Company's revised avoided cost forecast is an estimate of future monetized carbon costs that are represented as a 2% escalation, but the calculations actually utilize a 3% annual escalation.

3. Two different discount rates are applied at various points within the calculation of avoided cost.
4. The avoided cost used in the calculation of cost-effectiveness is not equal to the revised avoided cost calculation described by the Company and explained within the work papers accompanying the filing.

The net effect of the revisions outside of the IRP process has been to artificially increase the cost-effectiveness calculations of the Company's proposed DSM portfolio.

### **Applicable Discount Rate**

Avista is also proposing to apply a real (inflation adjusted) discount rate to future costs and benefits. This lower discount rate significantly increases the cost-effectiveness of DSM programs since measure costs are incurred almost exclusively up-front while the benefits (primarily the avoided cost of energy) flow over the life of the measure.

However, the Company is proposing to apply the inflation-adjusted real discount rate to a nominal stream of avoided costs that has not been adjusted for inflation. This incongruity is without rational justification. The Company's work papers indicate that the 6.80% discount rate<sup>4</sup> will be reduced to 4.02%<sup>5</sup>. The application of a real discount rate to a nominal avoided cost stream is an inconsistency that will again artificially inflate the cost-effectiveness of a DSM portfolio.

It is also notable that the Company's present value of avoided cost streams are calculated by applying the discount rate to beginning-of-year values rather than more conventional end-of-year application. While a deviation from the end-of-year industry standard to a mid-year discounting convention might be justifiable, a beginning-of-year assumption presumes that the annual savings from a measure occurs entirely on the first day of each year. This is an unjustifiable deviation from typical analytical practice creating another upward bias to the cost-effectiveness calculation.

### The Utility Cost Test and Total Resource Cost Test Standard

Four basic cost-effectiveness metrics have been standardized for the evaluation of DSM programs. Specific analytical methodologies have been most notably documented by the National Action Plan for Energy Efficiency (NAPEE) and the California Energy Commissions Standard Practice Manual. Each of the four cost-effectiveness tests view DSM programs from a different perspective.

The UCT test is designed to measure the utility cost to provide energy to the consumer. The scope of the UCT is restricted to only those costs that would appear on the consumer utility bill. The incremental cost of the promoted measure borne directly by the customer is not within the scope of the UCT test. In Avista's most recent independently reviewed assessment of its Washington natural gas DSM program, those costs borne directly by the customer are over twice as high (221%) as the total cost of running the utility program<sup>6</sup>.

If the objective of a DSM portfolio were to minimize the consumer utility bill without regard to any other consumer cost the UCT test would be the appropriate metric. But a favorable ratio of benefits to costs within the UCT does not in any way indicate that the consumers funding the DSM portfolio will benefit from their investment.

In contrast the TRC test is a metric designed to more comprehensively assess the impact of a DSM program upon the cost of end-use services borne by the ratepayer population, whether these costs are remitted through surcharges levied upon the consumer by the utility or in the form of premiums paid for the equipment or services promoted by the program. Thus a favorable ratio of TRC benefits to TRC costs indicates that the ratepayer population will pay less for end-use services with due consideration to all benefits and costs. Similarly a portfolio that is not TRC cost-effective represents an increase in the customer cost of end-use services. For that reason the Northwest Power and Conservation Council utilizes essentially the same test as its sole criteria for DSM cost-effectiveness within its resource planning process.

The Company has referenced that the TRC test includes a valuation of non-energy benefits that may occur with the adoption of the promoted measure (e.g. increased comfort in comparison to the baseline measure). The Company failed to note that the TRC test also includes the value of non-energy costs as well (e.g. discomfort that may be associated with the measure). The net value of these costs and benefits are a small component of the TRC test for natural gas DSM programs, much smaller than witnessed in electric DSM programs. Difficulties experienced in quantifying non-energy impacts may lead to a very modest upwards or downwards bias the results of the TRC test, but they are important considerations that are not incorporated within the UCT test and are no reason to abandon the expectation that a utility DSM program should pass the TRC test.

The Company's filing references a "... draft revised Memorandum of Understanding ..." with Staff in referencing its proposal to launch a portfolio which is not TRC cost-effective. There is no such publically available document, but Avista's website does contain a Memorandum of Understanding on the subject of cost-effectiveness tests that states that "... all programs and individual measures should have the goal of cost-effectiveness from the total resource, utility and participant perspectives"<sup>7</sup>. That latter document was signed by Staff, the Idaho Power Company, Rocky Mountain Power and Avista. This represents a regulatory approach that is more beneficial to customers.

### **Calculation of Cost-Effectiveness Metrics**

The Company's methodologies for calculating the UCT and TRC cost-effectiveness metrics are not compliant with accepted industry methodologies. These industry standard calculations require the analysis to distinguish between participants who were motivated to adopt a measure as a result of the program from those who would have adopted the measure even in the absence of the program. The latter is termed natural adoption and both the customer costs and benefits of these program participants should be excluded from the cost-effectiveness

calculation. This adjustment is performed by applying a net-to-gross (NTG) factor to the total program participation.

The National Action Plan for Energy Efficiency (sponsored by the U.S. Environmental Protection Agency) specifies that:

“A key requirement for cost benefit analysis is estimating the NTG. The NTG adjusts the cost-effectiveness results so that they only reflect those energy efficiency gains that are attributed to, and are the direct result of, the energy efficiency program in question. It gives evaluators an estimate of savings achieved as a direct result of the program expenditures by removing savings that would have occurred even absent a conservation program. Establishing the NTG is critical to understanding overall program success and identifying ways to improve program performance”.<sup>8</sup>

Similarly the October 2001 California Standard Practice Manual states that for both the UCT and TRC test:

“The avoided supply costs should be calculated using net program savings, savings net of changes in energy use that would have happened in the absence of the program”.<sup>9</sup>

Similarly the same document specifies that the Ratepayer Impact Measure (RIM) test calls for:

“Both the reductions in supply costs and the revenue increases should be calculated using net energy savings”.<sup>10</sup>

Avista’s cost-effectiveness calculations do not include this required net-to-gross adjustment. Excluding such an adjustment overstates the cost-effectiveness of the UCT, TRC or RIM test. The degree of the overstatement is particularly acute in the case of the UCT test. Analysis lacking such an adjustment should not be referred to as either a UCT or TRC calculation.

### **Comparison to Past Performance**

The Company currently offers a natural gas DSM portfolio within its Washington jurisdiction. Given Avista’s longstanding practice of offering identical programs within its contiguous service

territories it is reasonable to conclude that a prospective Idaho portfolio would perform very similarly to the existing Washington portfolio.

Avista's Washington natural gas DSM portfolio has been subject to an external independent evaluation of acquisition of actual operations during the 2012-2013 program years (the most recent independently reviewed period). The results of this independent analysis of actual and verified portfolio performance led to a TRC benefit-to-cost ratio of 0.35<sup>11</sup> (ratepayer benefits being only 35% of costs) and a UCT benefit-to-cost ratio of 0.80<sup>12</sup> (indicating that the utility portfolio benefits were 80% of the reduction in the utility cost).

The proposed Idaho portfolio would be expected to perform similarly. The difference between the cost-effectiveness represented by the Company in its filing and the poor performance of the Washington portfolio is indicative of the magnitude of the revisions that the Company has made to previously accepted analytical methodologies.

### **Schedule 190 Tariff Provisions**

The Company has proposed updated language for Schedule 190, governing natural gas DSM operations. Aspects of this tariff would qualify projects which are definitively cost-ineffective. Specifically the proposed Schedule 190 tariff grants the authority and obligation to extend an incentive of \$3.00 per first-year therm on any qualifying project with a consumer simple payback of up to 15 years (and an even longer discounted payback). The Company is proposing to open eligibility to all projects with measure lives of as short as ten years. Even in the absence of any utility cost associated with the administration of the DSM program, measures which require 15 years to obtain a simple payback but with a measure life of only ten years are clearly cost-ineffective.

### **Conclusion**

Avista's request to impose a \$1.25 million surcharge on Idaho natural gas consumers is based upon a flawed analysis that includes a non-standard calculation of the UCT, TRC and RIM test

that improperly credits the naturally occurring adoption of efficiency measures to the utility DSM program, confuses the allocation of total costs for rate recovery purposes with the calculation of incremental avoided costs for resource planning purposes, incorporates substantial changes to the avoided cost outside of the IRP process and public opportunity for involvement, mixes real discount rates and nominal avoided costs and includes several calculation errors. Avista has projected UCT and TRC performance that is well over twice that observed in its comparable Washington natural gas DSM portfolio, based upon an independent evaluation of actual results.

Given the significant policy and analytical questions raised by this filing and in recognition that there is little (likely no) harm to a reasonable delay we suggest that the Commission deny Avista's application to impose a surcharge to fund natural gas DSM programs through Schedule 191 and the related revisions to Schedule 190 pending the opportunity for public review, comment and discussion by all interested parties.

#### Footnotes

1. The "expected case avoided cost" scenario is found in Appendix 5.4, page 141 of the 2014 Avista Natural Gas Integrated Resource Plan Appendix. The "carbon legislation – medium case avoided cost" is found in Appendix 5.4, page 144 of the 2014 Avista Natural Gas Integrated Resource Plan Appendix.
2. See footnote 1 above.
3. Specific spreadsheet cell references of these errors are available upon request.
4. Page 16 of the Avista Washington / Idaho Demand-Side Management Business Plan.
5. Page 16 of the Avista Washington / Idaho Demand-Side Management Business Plan as well as the Company's work papers supporting this filing.
6. Washington UE-140801 Exhibit BWF-3 summarizes the results of Avista's 2012-2013 Washington DSM portfolio. Per the summary of cost-effectiveness of the natural gas DSM program for that period the customer incremental cost of promoted measures was



\$18,459,614 in comparison to the \$8,335,517 total utility program cost (including both incentive and non-incentive funding).

7. The Company has made this MOU available at <https://www.avistautilities.com/savings/dsm/dsmhistory/Documents/Idaho%20PUC%20DSM%20MOU.pdf>
8. National Action Plan for Energy Efficiency “Understanding Cost-Effectiveness of Energy Efficiency Programs; Best Practices, Technical Methods and Emerging Issues for Policy Makers”, page 4-9
9. The TRC test reference is at page 18 of the October 2001 California Standard Practice Manual. Reference to the UCT test is contained on page 23 of the same document.
10. Page 13 of the October 2001 California Standard Practice Manual.
11. Washington UE-140801 Exhibit BWF-3, page 3.
12. Washington UE-140801 Exhibit BWF-3, page 3.
13. Per the cost-effectiveness summary contained in Washington UE-140801 Exhibit BWF-3 page 3, the actual natural gas DSM portfolio TRC benefit-to-cost ratio was 0.35 vs. the Company’s projected 0.93 benefit-to-cost ratio (2.6 times higher). Similarly the same Washington document references a 0.80 UCT benefit-to-cost ratio in comparison to a 2.02 projection in the Company’s filing (2.5 times higher than the actual Washington performance).

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