

BEFORE THE WASHINGTON UTILITIES & TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,

Complainant,

v.

AVISTA CORPORATION d/b/a AVISTA UTILITIES,

Respondent.

DOCKET NOS UE-090134 & UG-090135 (*consolidated*)

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In the Matter of the Petition of

AVISTA CORPORATION, D/B/A AVISTA UTILITIES,

For an Order Authorizing Implementation of a Natural Gas Decoupling Mechanism  
and to Record Accounting Entries Associated With the Mechanism

Docket No. UG-060518 (*consolidated*)

DIRECT TESTIMONY OF MARY M. KIMBALL (MMK-1T)

ON BEHALF OF

PUBLIC COUNSEL

**AUGUST 17, 2009**

DIRECT TESTIMONY OF MARY M. KIMBALL (MMK-1T)  
DOCKET NO. UE-090134, UG-090134, UG-060518

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- Exhibit No. \_\_\_\_ (MMK-2) Avista Reported Residential Gas DSM Savings & Restated 2008 Results to Remove Impact of New Estimates – Washington & Idaho
- Exhibit No. \_\_\_\_ (MMK-3) Avista's Washington & Idaho Natural Gas DSM Savings – Restated to Remove 2008 Changes to Residential Savings Estimates
- Exhibit No. \_\_\_\_ (MMK-4) IPMVP, "Concepts and Options for Determining Energy and Water Savings," Vol. 1, April 2007 (excerpts)

1 **I. INTRODUCTION AND SUMMARY**

2 **Q: Please state your name, employer, and present position and role in the case?**

3 A: My name is Mary M. Kimball and my business address is 800 Fifth Avenue, Suite  
4 2000, Seattle, Washington, 98104. I am employed as a Senior Regulatory Analyst  
5 with the Public Counsel Section of the Attorney General’s Office.

6 **Q: Please briefly outline your education and employment background.**

7 A: I received a B.A. in Political Science from Williams College in Williamstown,  
8 Massachusetts in 1992. In 1997 I received a Masters in Public Policy from the  
9 University of California, Berkeley. Since joining the Public Counsel section in July  
10 2000, I have worked on a wide range of issues in the telecommunications and energy  
11 sectors. With respect to energy-related issues, my work has included service quality,  
12 energy efficiency, decoupling mechanisms, power costs, and affiliate interest issues.  
13 I also oversee the work of Public Counsel’s analyst staff participation in utility  
14 conservation and integrated resource plan advisory groups. In addition, I represented  
15 Public Counsel on the Stakeholder Advisory Group that worked with Titus and their  
16 subcontractor WeatherWise on the Avista decoupling evaluation, which included  
17 participation in numerous conference calls and reviews of draft versions of the Titus  
18 Decoupling Evaluation Report (hereafter “Titus Report”).<sup>1</sup>

19 **Q: Have you previously testified before this Commission?**

20 A: Yes. I testified before the Commission in two service quality proceedings in the US  
21 West-Qwest merger settlement docket (UT-991358), as well as in the Qwest AFOR  
22 proceeding (UT-061625). I also provided testimony in support of the service quality

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<sup>1</sup> *Evaluation of Avista Natural Gas Decoupling Mechanism Pilot: Final Report to Avista and the Stakeholder Advisory Group*, Titus, March 30, 2009 (Titus Report).

1 settlement in Puget Sound Energy’s 2001 general rate case. Finally, I have testified  
2 before the Commission as part of settlement panels in other energy and  
3 telecommunications proceedings.

4 **Q: What is the purpose of your testimony in this case?**

5 A: My testimony will address issues surrounding the Demand Side Management (DSM)  
6 savings claims by Avista for its natural gas DSM programs specifically in connection  
7 with the company’s natural gas decoupling pilot.

8 **Q: Please summarize your testimony.**

9 A: My testimony will discuss the following issues:

- 10 • Avista’s stated annual natural gas DSM performance (claimed therm savings)  
11 is based on savings estimates, which are sometimes referred to as  
12 “engineering estimates” regarding estimated reductions in gas usage from  
13 installation of DSM measures. The annual DSM verification that occurred as  
14 part of the decoupling pilot reviewed these “engineering estimates” but did  
15 not perform any measurement of actual energy usage by DSM program  
16 participants. Consequently, the Commission and other stakeholders do not  
17 have sufficient evidence or information to accurately evaluate Avista’s stated  
18 performance from its natural gas DSM programs.
- 19 • Information provided to Public Counsel through discovery regarding  
20 Schedule 101 DSM program participants, both residential and commercial,  
21 contains some significant anomalies. These anomalies raise questions about  
22 the overall accuracy of the savings claims. They also illustrate the pitfalls of  
23 relying exclusively on savings estimates and underline the need for bill

1 verification analysis that measures actual customer usage accurately and  
2 reliably.

3 • There have been several changes to Avista’s assumptions for calculating  
4 therm savings estimates for the residential natural gas DSM programs during  
5 the term of the decoupling pilot. Most of these changes have resulted in  
6 higher reported therm savings for Avista. These modified assumptions and  
7 their impact on reported savings calculations make it difficult to clearly  
8 analyze Avista’s performance over time. I provide an analysis that shows  
9 that if consistent assumptions are used, Avista’s performance in achieving  
10 estimated savings improves for the residential programs during the pilot, but  
11 at a much slower rate than presented in the Titus Report.

12 **Q: Why is it important to evaluate Avista’s claimed savings from its gas DSM**  
13 **programs?**

14 A: The decoupling pilot includes a “DSM Test,” which in part determines the amount of  
15 decoupling deferral revenue the company is allowed to recover from ratepayers. The  
16 amount of decoupling deferral approved for recovery depends in part on whether  
17 Avista has met the natural gas DSM target of savings achievement for Washington  
18 and Idaho combined, as established in its most recent Integrated Resource Plan  
19 (IRP).<sup>2</sup> In addition, the therm savings claims from the natural gas DSM programs  
20 are used to calculate the amount of “lost margins” from these programs. The  
21 Commission has cited its interest in encouraging energy efficiency as a reason for

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<sup>2</sup> *In the Matter of the Petition of Avista Corporation, d/b/a Avista Utilities, For an Order Authorizing Implementation of a Natural Gas Decoupling Mechanism and to Record Accounting Entries Associated with the Mechanism*, UG-060518, Order 04, Final Order Approving Decoupling Pilot Program, February 1, 2007, (hereafter, “Order 04 Approving Natural Gas Decoupling Mechanism”), Appendix A (Settlement Agreement), Section 6.E.(2).

1 approving decoupling on a pilot basis.<sup>3</sup> The Commission has also expressed an  
2 interest in examining and comparing the proportion of “lost margin” from DSM  
3 programs to the amount subject to recovery through a decoupling mechanism.<sup>4</sup>  
4 Public Counsel witness Michael Brosch discusses this issue in his testimony.

5 Public Counsel strongly supports utility DSM programs. Our goal is for these  
6 ratepayer-funded programs to be as robust, cost-effective, and successful as possible.  
7 To that end we believe it is important for the Commission to understand the  
8 implications of utility reported savings estimates from DSM programs, how those  
9 savings calculations can impact reported DSM performance, and the importance of  
10 verifying reported performance according to standard best practices. This will  
11 ensure that achievement claims are as accurate and reliable as possible. Accurate  
12 measurement of DSM results is critical for program design and for policy decision-  
13 making.

14 As Mr. Brosch explains in his testimony, if it is determined that a utility  
15 company requires a financial incentive to engage in energy conservation, Public  
16 Counsel believes that an incentive-based mechanism represents a superior alternative  
17 to decoupling. We would anticipate such a mechanism would include a “DSM  
18 Test,” and thus accurate measurement of DSM savings calculations would also be  
19 important for such a mechanism.

20 / /

21 / / /

22 / / / /

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<sup>3</sup> *Id.*, ¶ 33.

<sup>4</sup> *Id.*, ¶¶ 25-26.





1                    **Disclaimer and Important Information about Avista Utilities**  
2    **Energy Efficiency Programs**  
3

4                    **The Energy Solutions Department of Avista Utilities is**  
5                    **dedicated to making accurate predictions associated with**  
6                    **energy efficiency savings. However, it should be noted,**  
7                    **that the project costs, the energy savings, as well as the**  
8                    **incentives offered by Avista Utilities are only estimates**  
9                    **based on the information provided for this analysis at the**  
10                   **time of its creation.**

11  
12                   **Actual labor and material costs will vary among vendors**  
13                   **and contractors. To protect the integrity of the bidding**  
14                   **process, IT IS NOT RECOMMENDED that you use this**  
15                   **analysis for bid specifications or to compare vendor**  
16                   **project costs. The purpose of this report is to give you an**  
17                   **indication as to the viability of pursuing one or more of the**  
18                   **energy efficiency measures that have been identified in**  
19                   **your facility. *Avista believes the attached report is a***  
20                   ***reasonable, accurate, representation of energy usage and***  
21                   ***opportunities in your facility. However, because of the***  
22                   ***limited scope of our visits, Avista Utilities can not and will***  
23                   ***not guarantee the accuracy, completeness or usefulness of***  
24                   ***the information contained in this report, nor assume any***  
25                   ***liability for damages resulting from the use of any***  
26                   ***information, equipment, method or process discussed in this***  
27                   ***report.***<sup>7</sup>  
28

29                   **Q:     You have emphasized that Avista’s reported therm savings from its DSM**  
30                   **programs are estimates, but didn’t the decoupling mechanism require a “DSM**  
31                   **Verification”?**

32                   **A:     Yes. The decoupling mechanism did require a “verification” of Avista’s annual**  
33                   **DSM savings claims. This verification was performed by the firm Research Into**  
34                   **Action (RIA), with their subcontractor, Nexant, Inc.<sup>8</sup> The 2006 DSM Verification**  
35                   **Report was completed August 20, 2007, the 2007 DSM Verification Report was**

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<sup>7</sup> Avista’s Response to Public Counsel Data Request No. 005, Confidential Attachment B, DSM Application 24655, p. 17. Emphasis in original, including boldface type.

<sup>8</sup> While the RFP for the Decoupling Evaluation (conducted by Titus) was developed by an Advisory Group, the RFP for the DSM Verification and the selection of Research Into Action was conducted by Avista alone.

1 completed July 11, 2008, and the 2008 Report was completed February 28, 2009.<sup>9</sup>

2 However, as discussed below, the analysis was not sufficient to verify savings  
3 performance.

4 **Q: Did the DSM Verification Report include actual measurement of energy usage**  
5 **as part of its verification?**

6 A: No. RIA summarizes their review process in the following manner in each of the  
7 three annual reports:

8 The verification methodology for all three programs [residential,  
9 limited income, nonresidential] shared three common components:

- 10  
11 1. Reviewing the paper documentation of the sampled cases to  
12 verify that the input data used to calculate the therms saved on  
13 a case-by-case method were correct;  
14 2. Performing an engineering review of the assumptions that  
15 went into Avista's calculations of therm savings for the  
16 various measures; and  
17 3. Independently calculating therm savings on a case-by-case  
18 basis, using either Avista's assumptions or other sets of  
19 assumptions resulting from the engineering review.<sup>10</sup>

20 As this summary indicates, RIA examined Avista's engineering estimates and  
21 assumptions, but did not examine or measure actual energy usage of DSM program  
22 participants.<sup>11</sup>

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<sup>9</sup> These three annual DSM Verification Reports are included as Attachments H1, H2, and H3 to the Titus Report contained in Mr. Hirschorn's Workpapers.

<sup>10</sup> Attachment H1 to the Decoupling Evaluation, Mr. Hirschorn's Workpapers, *Independent Third-Party Verification of 2006 Natural Gas DSM Energy Savings: Washington and Idaho Programs*, Executive Summary, p. I. (Workpaper, p. E-377). See also 2007 DSM Verification Final Report, Workpaper, p. E-459; 2008 DSM Verification Final Report, Workpaper, p. E-575.

<sup>11</sup> The reports further describe that for the 2006 report, audit samples were developed with the goal of a precision of  $\pm 5\%$ , at a confidence of 95%. However, as described in the 2007 DSM Verification Report, higher than expected rates of documentation error meant that RIA would need very large sample sizes to maintain that level of precision, and thus the 2007 and 2008 Reports employed a sampling methodology with a reduced goal of  $\pm 10\%$  precision and 95% confidence. Attachment H2 to the Decoupling Evaluation, Mr. Hirschorn's Workpapers *Final Report, Independent Third-Party Verification of 2006 and 2007 Natural Gas DSM Savings: Washington and Idaho Programs*, Chapter 3, Audit Methods, p. 9. (Workpaper, p. E-479). See also, Titus Report, Section H, p. 60.

1 **Q: Was consideration given to performing actual bill analysis or bill verification as**  
2 **part of the decoupling pilot evaluation?**

3 A: Yes. Titus and WeatherWise made a proposal to conduct a non-proprietary analysis  
4 that would have included bill verification analysis to examine changes in customer  
5 usage due to Avista’s natural gas DSM programs. Avista rejected that aspect of the  
6 Titus/WeatherWise proposal in what was a “non-consensus” decision.<sup>12</sup> Titus noted  
7 this in its final report.<sup>13</sup>

8 **Q: What would have been the benefits of such an analysis, if any?**

9 A: Such an analysis could have provided further information regarding the accuracy and  
10 reliability of Avista’s reported savings estimates and the “verified” savings. This  
11 kind of analysis also would have provided information regarding the amount of  
12 reduction in usage per customer that is explained by participation in Avista’s DSM  
13 programs in comparison to the amount due to other factors, such as price elasticity.

14 **Q: Did the Titus Report review and comment upon the work of the DSM Verifier?**

15 A: Yes. The Evaluation of Avista’s decoupling mechanism, conducted by Titus and  
16 Weatherwise, discusses the DSM Verification in the Executive Summary and also in  
17 Section H of the Report. The Executive Summary states the following:

18 The DSM Savings Verification Audits were performed as required.  
19 The assumptions made, methods used and results of the report appear  
20 reasonable. While considerable effort was invested to review back  
21 office operations and engineering calculations, *no actual energy*  
22 *measurement or post-installation bill verification was performed by*  
23 *the DSM Savings Verification Auditor.*<sup>14</sup>  
24

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<sup>12</sup> Decisions regarding the pilot evaluation with which not all stakeholders agreed were termed “non-consensus” decisions in the Titus Report.

<sup>13</sup> This issue regarding the scope of the evaluation is addressed in the Executive Summary, at n.7, p. 5, and also in Section H, n.108, p. 63. *See also* Exhibit 10 to the Decoupling Evaluation regarding independent modeling.

<sup>14</sup> Titus Report, Executive Summary, p. 5 (Emphasis added; citations omitted).

1 The fact that the DSM Verification did not include any actual measurement of  
2 energy usage or bill verification, either pre- or post-installation of DSM measures, is  
3 discussed further in Section H of the Report, as follows:

4 The verified effect reported in the audit is not “measured” energy  
5 savings. The auditor verified the engineering estimates and the  
6 corresponding assumptions and documentation but did not perform  
7 any post-installation measurement or analysis.<sup>15</sup>  
8

9 Because the DSM Verification did not include any actual measurement of energy  
10 usage, the report provides no firm basis upon which to accept or reject Avista’s  
11 savings estimates.

12 **Q: Has Avista performed any significant measurement and verification of its**  
13 **natural gas DSM programs?**

14 A: No. In discovery for this proceeding we asked Avista to provide copies of all  
15 evaluations or reviews of any of its natural gas DSM programs conducted from 2004  
16 to the present. In its response, Avista referred to the three DSM Verification reviews  
17 conducted by RIA/Nexant during the decoupling pilot, and also to the Titus Report.  
18 In addition, Avista provided an Excel spreadsheet they referred to as “working  
19 documents” related to an evaluation of the pre-rinse sprayer program conducted by  
20 Avista. This spreadsheet indicates that Avista measured actual energy consumption  
21 data for a sample group of twenty participants in the pre-rinse sprayer program.<sup>16</sup>  
22 Avista also provided an eight-page document that outlines the specifications for

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<sup>15</sup> Titus Report, Section H, p. 61. (Citations omitted).

<sup>16</sup> Avista’s Response to Public Counsel Data Request No. 388, Confidential Attachment A (pre-rinse sprayer spreadsheet), and Attachment B (multi-family program specifications). The Excel spreadsheets with data for a sample of twenty participants in the pre-rinse sprayer program show that measurements were sometimes not available or higher than expected because the sprayer was either broken, had been removed, or in one case, the customer had drilled out a new sprayhead nozzle to increase water flow. *Id.* Confidential Attachment A. These are important factors that affect the actual savings achieved from the DSM measure, but would not be discovered through the paperwork and engineering review conducted by RIA/Nexant as the DSM Verification.

1 electric and gas DSM measures within multifamily residential homes, but this  
2 document does not provide an evaluation of the program.

3 **Q: Do you know if Avista is planning to pursue measurement and verification for**  
4 **its DSM programs in the future?**

5 A: Mr. Powell stated in his testimony that Avista has begun developing a revised plan  
6 for DSM measurement and verification during this proceeding.<sup>17</sup> In response to a  
7 discovery request from Public Counsel, Avista provided a draft document outlining a  
8 plan for measurement, evaluation and verification.<sup>18</sup> However, this document is not  
9 yet finalized and has not been shared with or reviewed by Avista’s External Energy  
10 Efficiency (“Triple E”) advisory group. Given the preliminary nature of this  
11 information, I will not address the specific elements of the draft plan in my  
12 testimony.

13 **Q: Does this plan remedy your concerns with the pilot?**

14 A: No. As a general proposition, improvements in DSM measurement are useful and  
15 important for a variety of reasons. The fact that Avista is now pursuing this  
16 approach, however, does not remedy the DSM measurement issues in this case nor  
17 Avista’s failure to meet its burden. The details, results, and timing of any new  
18 measurement approach that Avista would pursue are not known and would not  
19 provide any empirical basis for continuing the pilot. Moreover, DSM measurement  
20 and verification is only one of the problem areas with the decoupling pilot, as the  
21 testimony of Public Counsel witness Michael Brosch discusses.

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<sup>17</sup> Direct Testimony of Jonathan Powell on behalf of Avista, Exhibit No.\_\_\_\_ (JP-1T), p. 8, ll. 1-2.

<sup>18</sup> Avista’s Response to Public Counsel Data Request No. 393, Attachment A.

1 **Q: In your opinion, do the DSM Verification reports provide a true and accurate**  
2 **“verification” of Avista’s reported savings estimates from their natural gas**  
3 **DSM Programs?**

4 A: No, not as the term is typically used in the context of examining the impact of utility  
5 energy efficiency programs. RIA/Nexant examined the estimation techniques Avista  
6 employed, but they did not examine the actual impact of the DSM measures in  
7 reducing program participants’ natural gas usage. In this regard, the accuracy and  
8 reliability of Avista’s savings estimates have not been rigorously tested and  
9 examined. In considering the impact of energy efficiency programs, the terms most  
10 commonly used are “measurement and verification.”<sup>19</sup> It is noteworthy that this very  
11 important term “measurement” is missing from the annual DSM Verification  
12 Reports. As the Titus Report indicates, a verification that reviews paperwork and  
13 engineering estimates but does not measure energy usage is of limited utility.<sup>20</sup>

14 **Q: Can you provide an example that illustrates the deficiency of the verification**  
15 **approach?**

16 A: Yes. The example of the high efficiency furnace is instructive. Each year, the DSM  
17 Verifier accepted Avista’s savings estimate for the high efficiency furnace program.  
18 In 2006 and 2007, RIA/Nexant accepted Avista’s estimate of 72 therms per high  
19 efficiency furnace, and recommended they use this same estimate of 72 therms in  
20 2008. Yet once Avista adjusted the savings estimate upward by 70% (not based on  
21 measurement, but by changing its assumptions) to 123 therms per furnace in 2008,

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<sup>19</sup> Indeed, these terms are used together so commonly that they are abbreviated as “M&V.”

<sup>20</sup> Titus Report, Section H, p. 61. Citations omitted. Titus discusses the pre-rinse sprayer program as an example of how the approach of the DSM Verification “is lacking.” *Id.*

1 RIA/Nexant ultimately accepted that estimate in their 2008 Final Report without  
2 performing any bill analysis or measurement to verify this estimate.<sup>21</sup>

3 **Q: Mr. Powell says at page 7 of his testimony that Avista’s methods to estimate**  
4 **savings “are compliant with the International Performance Measurement and**  
5 **Verification Protocol (IPMVP) standards.”<sup>22</sup> Please comment on that assertion.**

6 **A:** IPMVP sets forth very clearly that in order to verify the impact of a DSM measure,  
7 actual energy usage must be measured. The April 2007 publication that sets forth  
8 the IPMVP for energy savings includes the following statement:

9 “Measurement and Verification” (M&V) is the process of using  
10 measurement to reliably determine actual saving created within an  
11 individual facility by an energy management program. Savings  
12 cannot be directly measured, since they represent the absence of  
13 energy use. Instead, savings are determined by comparing measured  
14 use before and after implementation of a project, making appropriate  
15 adjustments for changes in conditions.

16 \* \* \*

17 Verification of the potential to achieve savings involves regular  
18 inspection and commissioning of equipment. However, such  
19 verification of the potential to generate savings should not be  
20 confused with M&V. *Verification of the potential to generate savings*  
21 *does not adhere to IPMVP since no site energy measurement is*  
22 *required.*<sup>23</sup>

23

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<sup>21</sup> *Final Report, Independent Third-Party Verification of Natural Gas DSM Energy Savings, 2006 through 2008: Washington and Idaho Programs*, Funded by Avista Utilities, Prepared by Research Into Action, February 28, 2009, (hereafter, “2008 Final DSM Verification Report”), Table 4.2: Summary of Engineering Evaluation for Residential Program, p. 43. (Mr. Hirschhorn Workpapers, p. E-625). The two main changes that Avista made to its calculations that increased the savings estimate by 70%, from 72 to 123 therms were to increase the square footage of assumed heat loss by 55% to include heat loss through the floor, and to increase the assumed efficiency improvement of the furnace from 10% to 15%. Avista’s Response to Public Counsel Data Request No. 441, p. 6 and Avista’s Response to Public Counsel Data Request No. 402, Attachment A. These modifications were not identified in the 2006 or 2007 DSM Verification Reports.

<sup>22</sup> Direct Testimony of Jonathan Powell Representing Avista, Exhibit No. \_\_\_\_ (JP-1T), p. 7, ll. 16-17.

<sup>23</sup> International Performance Measurement and Verification Protocol, “Concepts and Options for Determining Energy and Water Savings,” Volume 1. Prepared by Efficiency Valuation Organization (EVO), April 2007, Chapter 2, p. 9, (italics and citations omitted; emphasis added). This document is available through the website of the Efficiency Valuation Organization ([www.evo-world.org](http://www.evo-world.org)), see: [http://www.evo-world.org/index.php?option=com\\_content&task=view&id=272&Itemid=279](http://www.evo-world.org/index.php?option=com_content&task=view&id=272&Itemid=279). This is a voluminous document, but I have provided excerpts containing the sections referenced in my testimony, as Exhibit No. \_\_\_\_ (MMK-4).

1 It is difficult to square Mr. Powell’s statement about IPMVP compliance with the  
2 statement above from the Protocol itself.<sup>24</sup> As I discussed earlier, there has been no  
3 significant measurement and verification of Avista’s natural gas DSM programs.

4 Another area where I am concerned that Avista may not be fully compliant  
5 with IPMVP is in regard to some of its savings estimates. The Protocol emphasizes  
6 that savings estimates should be “conservative.” This is one of the “fundamental  
7 principles of good M&V practice” as set forth in the IPMVP.<sup>25</sup> In the example  
8 discussed previously, Avista recently increased the savings estimate for a high-  
9 efficiency furnace from 72 therms to 123 therms. Avista’s claimed savings estimate  
10 of 123 therms per furnace assumes installation of a 95% efficient furnace, but  
11 customers need only install a 90% efficient furnace to qualify for the rebate. In fact,  
12 the company’s calculation worksheets estimate that installation of a 90% furnace  
13 would reduce usage by 83 therms.<sup>26</sup> In this regard, the savings estimate of 123  
14 therms does not on its face appear to be “conservative.”

15 Additionally, the fact that many Avista customers participate in more than  
16 one program could mean that actual savings from a particular program are not as  
17 large as currently estimated by Avista. For example, Avista’s calculations for  
18 savings resulting from residential insulation programs appear to assume a “base

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<sup>24</sup> Please also see discussion above regarding the revised measurement and verification plan Avista appears to be developing during this proceeding.

<sup>25</sup> International Performance Measurement and Verification Protocol, “Concepts and Options for Determining Energy and Water Savings”, Volume 1. Prepared by Efficiency Valuation Organization, April 2007, Chapter 3, p. 11.

<sup>26</sup> The current calculations provided by Avista in discovery assume a 15% improvement from a base case of an 80% efficient furnace. Avista’s Response to Public Counsel Data Request No. 402, Attachment A. In other discovery responses Avista indicated the 15% improvement is from a base case of 78% to 92.5%. Avista’s Response to Public Counsel Data Requests No. 283, Attachment A, and Public Counsel Data Request No. 441, p. 6. Avista has indicated that an increasing proportion of customers are installing furnaces with an efficiency rating greater than 90%. Public Counsel has requested additional information and data from Avista regarding the proportion of customers installing 95% efficient furnaces.



1 case” of an 80% efficient gas furnace in the home.<sup>27</sup> However, the DSM  
2 Verification Reports indicate that many customers participate in more than one  
3 program.<sup>28</sup> Moreover, Avista’s furnace program is one of the most popular  
4 programs in terms of the number of participants.<sup>29</sup> If many or most of the customers  
5 participating in the insulation program have furnaces with 90% or higher efficiency  
6 ratings, their actual therm savings (reduced usage) would be lower. In this regard, it  
7 might be more conservative to assume gas heat efficiency of higher than 80% as the  
8 “base case” for the insulation programs.

9 **Q: Mr. Powell states in his testimony that Avista will continue to retain an**  
10 **independent verifier and that the consultant “will be requested to develop a**  
11 **verification methodology that will address the concerns and recommendations**  
12 **identified in the [Titus] Evaluation Report.”<sup>30</sup> Is this sufficient?**

13 A: No. Avista is apparently acknowledging the flaws of the DSM verification as it was  
14 conducted during the three-year term of the decoupling pilot. As with Mr. Powell’s  
15 testimony about Avista’s “plan” for measurement, which I have discussed above, this  
16 does not remedy my concerns with the pilot mechanism. Mr. Powell’s testimony on  
17 this issue does not provide anything beyond the vague statement quoted above. There  
18 is no explanation or discussion as to what such a revised scope of work might entail.  
19 The only recommendation or concern described in Mr. Powell’s testimony relates to  
20 the use of Professional Engineers or Certified Energy Managers to perform pre-

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<sup>27</sup> Avista’s Response to Public Counsel Data Request No. 402, Attachment A.

<sup>28</sup> The 2006 DSM Verification Report states that more than 60% of residential customers participate in two or more rebate programs, and nearly 30% participate in three or more. 2006 DSM Verification Report, p. 8. (Mr. Hirschhorn’s Workpapers, p. E-392).

<sup>29</sup> Avista’s Response to Public Counsel Data Request No. 283, Attachment A.

<sup>30</sup> Direct Testimony of Jonathan Powell Representing Avista, Exhibit No. \_\_\_\_ (JP-1T), p. 8, ll. 13-14.

1 and/or post-installation energy audits.<sup>31</sup> However, this addresses only the  
2 recommendations in the Titus Report pertaining to large site-specific projects. The  
3 Titus Report also provided recommendations concerning the residential and  
4 commercial (termed “prescriptive”) programs, such as performing “post installation  
5 monitoring by reviewing the weather-normalized usage of prescriptive program  
6 participant’s pre and post installation.”<sup>32</sup> This general assertion that Avista will  
7 pursue a new approach to DSM savings verification with unknown parameters at an  
8 uncertain future time provides no basis for continuation of this decoupling  
9 mechanism.

10 **III. CLOSE EXAMINATION OF AVISTA’S SAVINGS**  
11 **ESTIMATES REVEALS SOME SIGNIFICANT ANOMALIES**  
12

13 **Q: In reviewing Avista’s reported DSM savings claims, were you able to perform a**  
14 **complete audit of their programs?**

15 A: No. A full audit of the DSM programs was not feasible. However, through  
16 discovery Public Counsel obtained substantial amounts of data about the programs. I  
17 have examined sample projects within the data. This “spot check” analysis yielded  
18 some surprising results, which raise further questions about the reliability of the  
19 savings claims.

20 **Q: Could you describe the type of data you examined as part of this analysis?**

21 A: Yes. In general I examined two types of data obtained through discovery in this  
22 proceeding, as described below.

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<sup>31</sup> *Id.*, p. 7, ll. 1-5.

<sup>32</sup> Titus Report, p. 63.

1                   First, Public Counsel obtained detailed information and data regarding DSM  
2 projects for Schedule 101 customers where the reported savings claim exceeded  
3 2,400 therms. As discussed in the Titus Report, Avista's gas Schedule 101 is  
4 designed for residential and low usage commercial customers using less than 200  
5 therms per month (or 2,400 therms annually).<sup>33</sup> Most of these projects were for  
6 commercial and industrial customers. Information that I reviewed for each DSM  
7 project included the DSM Incentive and Savings calculations, the Energy Efficiency  
8 Agreement signed by Avista and the customer (if an agreement was necessary and  
9 signed), and documents related to project costs and incentives paid by Avista. This  
10 information was provided by Avista in discovery, along with billing summaries that  
11 allowed me to examine customer usage patterns prior to and following installation of  
12 the DSM measure or measures. Due to the voluminous nature of the information and  
13 the number of projects, I focused my attention primarily on projects that occurred in  
14 2007 and 2008.

15                   Second, I reviewed an extensive Excel spreadsheet, with over 20,000 entries,  
16 for Avista's residential natural gas DSM programs in Washington and Idaho, from  
17 2004 through 2008. This spreadsheet contains data for each program participant,  
18 including the amount of reported claimed savings, the incentive paid, the project

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<sup>33</sup> Titus Report, p. 65. In general, a customer using more than 200 therms per month (or 2,400 therms annually) would be served by Avista gas Schedule 111, although there are exceptions, particularly if usage is seasonal. Only Schedule 101, which is composed of approximately 90% residential customers, are subject to the decoupling surcharges. An average residential customer uses about 830 to 850 therms of natural gas annually. Titus Report, Table G-5 New Versus Existing Customer Usage, p. 52.

1 cost, as well as information regarding Avista's changes to its savings estimates for  
2 each program.<sup>34</sup>

3 **Q: Could you describe the results of your analysis of the 2008 data in more detail?**

4 A: Yes. Individual customer data and documentation from a select group of Schedule  
5 101 commercial and industrial gas customers contains some serious anomalies which  
6 are difficult to explain. My review of DSM projects at eleven (11) different  
7 customer locations in 2008 showed the following:

- 8 • Two projects involved installation of multiple DSM measures at warehouse-  
9 type space that are currently unoccupied or have been very minimally  
10 occupied since installation of the DSM measures.<sup>35</sup> One project involved  
11 three different DSM measures (two separate insulation measures and an  
12 HVAC measure), with reported savings of 12,046 therms in total for the three  
13 measures.<sup>36</sup> Actual billing usage summaries for the four gas meters serving  
14 this building show that at three of the meters, total annual usage has been less  
15 than 300 therms for the past year, while at the fourth meter, total annual gas  
16 usage was only about 1,200 therms for the past year. In discovery, Avista  
17 stated that "the building's minimal occupancy is not consistent with it [sic]  
18 intended use."<sup>37</sup> Given the minimal gas usage at this project site, the  
19 reported savings of 12,046 therms will very likely not be realized.

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<sup>34</sup> Avista's Response to Public Counsel Data Request No. 283, Attachment A. Avista also provided data regarding participation levels and savings claims for its Oregon customers from 2004 to 2008. *Id.*

<sup>35</sup> Avista's Responses to Public Counsel Data Requests No. 354 and No. 355; Avista's Response to Public Counsel Data Request No. 006.

<sup>36</sup> Avista's Response to Public Counsel Data Request No. 354; Avista's Response to Public Counsel Data Request No. 6, Confidential Attachment B, DSM Project 25444.

<sup>37</sup> Avista's Response to Public Counsel Data Request No. 354. Bill summaries provided in Confidential Attachment A to Public Counsel Data Request No. 354.

1                   The other project included two insulation measures with reported  
2 savings of 7,839 therms at a warehouse building that Avista has indicated is  
3 currently unoccupied. The amount of claimed savings was developed using  
4 an insulation calculator, which considers factors such as the size of the  
5 building (square feet), heating fuel type, heating degree days, and the level of  
6 existing and proposed insulation. The calculator then provides the amount of  
7 estimated existing and proposed annual usage if the insulation measure is  
8 installed, with the difference representing the estimated savings.<sup>38</sup> In  
9 response to discovery, however, Avista recognized that estimating the  
10 anticipated annual gas usage for this site was difficult:

11                   It is difficult to say what the estimated annual therm  
12 usage would be because the actual use of the space was  
13 unknown at the time as well as the type of heating  
14 source that may have been utilized in the space.<sup>39</sup>  
15

16                   Indeed, as noted above, Avista has indicated this building is currently  
17 unoccupied, which suggests that savings of the amount estimated are not  
18 likely.<sup>40</sup>

19                   • One project for “Rooftop Service” at a commercial retail location involved  
20 reported savings by Avista of 3,492 therms related to a “thermostat  
21 modification” made by a certified contractor. However, examination of the  
22 billing summaries for the two gas meters serving the location show that usage

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<sup>38</sup> Avista’s Response to Public Counsel Data Request Data Request 006, Confidential Attachment B, DSM Application 27841, p. 24.

<sup>39</sup> Avista’s Response to Public Counsel Data Request No. 355(g).

<sup>40</sup> Actual billing data shows therm usage of 900 therms or higher per month for a five month period after Avista paid the incentive amount to the customer, followed by four months of much lower or zero usage, which confirms Avista’s statement that the site is unoccupied. Avista’s Response to Public Counsel Data Request No. 355, Confidential Attachment A.

1 at one meter increased by about 730 therms for the year following the DSM  
2 measure, while usage at the other meter decreased by only about 340  
3 therms.<sup>41</sup> Avista described the nature of this DSM measure in the following  
4 manner:

5 The “thermostat modification” is one of several  
6 potential adjustments that a technician can make as  
7 part of the AirCare Plus program. As part of the  
8 program, a technician would gather information on the  
9 various rooftop units as well as building type and  
10 thermostat settings. All of the data was then processed  
11 by the proprietary software included in the AirCare  
12 Plus Savings Estimator developed by Braun and  
13 Mercer at Purdue University. The system would then  
14 suggest changes that the technician should make to  
15 either the thermostat or rooftop unit. For thermostats,  
16 depending on the pre-condition of the unit, the  
17 technician would make the recommended changes.  
18 For example, the technician could change the  
19 thermostat settings i.e. removing the override  
20 condition, changing the schedule to match building  
21 operating hours and/or changing the heating set point.  
22 *Based on those changes, the software then calculated*  
23 *the savings based on the estimated usage of the pre-*  
24 *condition versus the estimated usage of the post-*  
25 *condition. Estimated usages are based on pre-set*  
26 *assumptions for that building type and size.*<sup>42</sup>

27  
28 These descriptions illustrate why evaluation, measurement and verification  
29 for a program of this nature would be particularly relevant. For example, in  
30 the Rooftop Program described above an evaluation could examine whether  
31 the contractors actually made all of the changes to thermostat settings,  
32 whether the customer changed or overrode the settings, and could examine

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<sup>41</sup> Avista’s Response to Public Counsel Data Request No. 59, Confidential Attachment A. The billing data is not weather normalized, but nevertheless shows that the most recent 12-month period had slightly more degree days than the prior 12-month period, suggesting usage would be slightly lower. *Id.*

<sup>42</sup> Avista’s Response to Public Counsel Data Request No. 359 (Emphasis added). Avista has indicated this program is not being offered in 2009. *Id.*

1 the accuracy of the software savings estimator in predicting savings (reduced  
2 usage) by measuring actual energy usage before and after the DSM measure.  
3 The 2008 DSM Verification Report reduced the amount of savings for “Other  
4 non-residential site-specific” projects, which included the Rooftop Program,  
5 to 80.3% of reported savings.<sup>43</sup> However, actual billing data discussed  
6 above, which showed a net increase in gas usage across the two customer  
7 meters, generally suggests that savings of 3,492 therms or even a much lower  
8 amount is not likely at this location.

9 • One project for a Schedule 101 industrial customer reported claimed savings  
10 of 5,600 therms from installation of an on-demand insulated hot water  
11 measure. However, this savings estimate was based upon anticipated annual  
12 natural gas usage of almost 20,000 therms following installation. A review  
13 of billing usage data revealed the customer’s actual usage was only about  
14 7,800 therms for the year following installation of the DSM measure, slightly  
15 more than one-third of the anticipated total usage following installation of the  
16 DSM measure.<sup>44</sup> Since the customer’s actual gas consumption was much  
17 lower than anticipated, the realized savings from the DSM measure  
18 installation would also likely be much lower than estimated.

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<sup>43</sup> Titus Report, Table H3-E (Corrected), p. 58; 2008 DSM Verification Report, Audit Methods, p. 17 (Mr. Hirschhorn Workpaper, p. E-599). In 2007 the DSM Verifier examined the Rooftop program separately and verified only about 28% of the savings. Titus Report, Table H3-C, p. 56. The project discussed here occurred in 2008 and thus the 80% verification level would apply.

<sup>44</sup> Avista’s Response to Public Counsel Data Request No. 006, Confidential Attachment A and Confidential Attachment B, DSM Project 24625; Avista’s Response to Public Counsel Data Request No. 352, including Confidential Attachment A to Public Counsel Data Request No. 352 (updated bill history). The customer’s actual gas consumption was 38% of the estimated anticipated annual usage.

1           •       At least one and possibly two of the eleven 2008 projects I reviewed was  
2                   incorrectly attributed to Schedule 101. One customer, with a “controls”  
3                   project with estimated savings of 9,643 therms, is served by Schedule 111  
4                   and thus the savings estimates and associated “lost margins” should have  
5                   been attributed to Schedule 111 in the Titus Report.<sup>45</sup> Avista has indicated  
6                   that the customer with the second project, an HVAC measure with reported  
7                   savings of 2,665 therms, is served by both a Schedule 101 and Schedule 111  
8                   meter. The specific location of this measure and the meter serving that  
9                   location have not yet been confirmed.<sup>46</sup>

10   **Q:    Could you also describe the results of your analysis for the 2007 projects?**

11   A:    Yes. My review of DSM projects at eighteen (18) different customer locations in  
12       2007 showed the following:

13           •       Two projects involved installation of multiple DSM measures at  
14                   warehouse/office park space that is currently unoccupied or has been very  
15                   minimally occupied since installation of the DSM measures.<sup>47</sup> Both projects  
16                   involved large reported claimed savings. One project involved four different  
17                   gas DSM measures (two separate insulation measures, window retrofit, and  
18                   an HVAC measure), with reported savings of 15,475 therms in total for the

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<sup>45</sup> Avista’s Responses to Public Counsel Data Requests No. 353 and No. 6, Confidential Attachment A.

<sup>46</sup> Avista’s Response to Public Counsel Data Request No. 360. The calculations for these estimated savings of 2,665 therms (EZ SIM analysis) reference the address for the Schedule 111 meter, suggesting that perhaps this project should have been attributed to Schedule 111. *Id.* Confidential Attachment A; Avista Response to Public Counsel Data Request No. 6, Confidential Attachment B, DSM Application 22204, p. 49.

<sup>47</sup> Avista’s Responses to Public Counsel Data Requests No. 399 and No. 398, including Confidential Attachment A (billing summaries); Avista’s Response to Public Counsel Data Request No. 006.



1 four measures.<sup>48</sup> Billing usage summaries for the three gas meters serving  
2 this building show that actual usage has been either zero or minimal since  
3 completion of the DSM project in 2007.<sup>49</sup> A similar pattern of minimal  
4 usage following installation of four gas DSM measures was found at the  
5 other project site, which reported total claimed savings of 15,691 therms.<sup>50</sup>

6 In light of the minimal occupancy and corresponding gas usage at  
7 these two buildings, savings of over 15,000 for each site are highly unlikely.  
8 According to the Titus Report, it appears these projects (“other non-  
9 residential site-specific”) were “verified” at 124.9% in 2007, which means  
10 that a project with reported savings of 15,000 therms would have been  
11 “verified” at 18,750 therms.<sup>51</sup>

- 12 • One project included two insulation measures with total claimed savings of  
13 12,203 therms. Avista’s billing summaries indicate the customer has  
14 received gas service at this premise for over fifteen years. A review of billing  
15 data for the three meters serving this building shows that, rather than

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<sup>48</sup> Avista’s Response to Public Counsel Data Request No. 398; Avista’s Response to Public Counsel Data Request No. 006, Confidential Attachment B, DSM Project 24895. The project also included an electric lighting retrofit, with an associated term “penalty” (increased gas usage) of 265 therms. However, the therm savings for the gas projects are not adjusted downward as a result of this penalty. The reported therm savings appear in Mr. Hirsch Korn’s Workpapers, Exhibit C-1 “DSM Savings Calculations” to the Titus Report, at pp. 21 and 24.

<sup>49</sup> Avista’s Response to Public Counsel Data Request No. 398, Confidential Attachment A. Usage at two of the meters has been zero for most months since 2007, while at the third meter usage was about 2,200 therms in 2008, but has been zero for the months of May and June, 2009. *Id.*

<sup>50</sup> Avista’s Response to Public Counsel Data Request No. 399, including Confidential Attachment A (billing summaries). The four gas DSM projects were insulation (11,405 therms), HVAC (3,201 therms), door insulation (647 therms), window replacement (438 therms). There was a “penalty” of increased therm usage due to an electric lighting retrofit, but that “penalty” does not reduce the claimed therm savings attributed to the gas measures, as they are shown in Mr. Hirsch Korn’s Workpapers, Exhibit C-1 “DSM Savings Calculations” to the Titus Report, at pp. 21 and 24. Avista’s Response to Public Counsel Data Request No. 006, Confidential Attachment B, DSM Application 24872.

<sup>51</sup> Titus Report, Table H3-C, p. 56. (15,000 \* 1.25 = 18,750). As I explain further at n.79, there are three sets of DSM data (DSM Verified, Titus Verified, and Avista Reported).

1 decreasing by 12,000 therms, gas usage has been fairly stable or has  
2 increased since installation of the DSM measures.<sup>52</sup> While colder weather  
3 may explain some increases in gas usage, it appears based on billing data that  
4 savings of the magnitude predicted by Avista's insulation estimator calculator  
5 will not be realized. Moreover, since this project is also in the category of  
6 "other non-residential site-specific" it would have been "verified" at the same  
7 level discussed above, 124.9%. Thus, reported savings of 12,203 therms  
8 would translate to "verified" savings of 15,253 therms.<sup>53</sup>

9 • Three of the eighteen 2007 projects I reviewed were incorrectly attributed to  
10 Schedule 101. In fact, the customers are served by Schedule 111 or Schedule  
11 146 and thus the savings estimates and associated "lost margins" should have  
12 been attributed to Schedule 111 in the Titus Report. One project had reported  
13 savings of 14,980 therms, the second had reported savings of 6,500 therms,  
14 and the third had reported savings of 3,360 therms. In total these three  
15 projects had reported savings of 24,840 therms in 2007. Removing them  
16 from the 2007 amount of "lost margins" for Schedule 101, shown as \$90,429  
17 in the Titus Report, would lower that amount.<sup>54</sup>

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<sup>52</sup> Avista's Response to Public Counsel Data Request No. 396, Confidential Attachment A. This project also included an electric lighting retrofit, with a therm "penalty" (increased usage) of 2,481 therms. Avista's Response to Public Counsel Data Request No. 006, Confidential Attachment B, DSM Project 24655. However, as noted previously, this "penalty" does not reduce the claimed therm savings from the gas measures, as they are shown in Mr. Hirschhorn's workpapers, Exhibit C-1 to Titus Report, "DSM Savings Calculations," p. 24.

<sup>53</sup> This was calculated as follows: 12,203 reported therms \* 1.25 = 15,253 verified therms.

<sup>54</sup> Titus Report, Table E-2, p. 45 (corrected). Avista has advised the Parties they intend to file corrected versions of various tables and exhibits to the Titus Report. The reduction to lost margins for Schedule 101 would be about \$5,000 to \$6,000. Based on the savings amounts as reported by Avista (24,840), lost margins would be almost \$5,000 (24,840 \* .19822 margin rate 2007 = \$4,923). If these savings were "verified" at 125%, as it appears, lost margins would be over \$6,000 ((24,840\*1.25)=31,050\*.19822=\$6,154.

1 **Q: What were some of the anomalies you discovered with respect to the residential**  
2 **programs?**

3 A: In reviewing the granular level data provided by Avista in discovery for its  
4 residential natural gas DSM programs, I observed that for some programs, the  
5 average amount of reported savings per participant seemed unusually large. I discuss  
6 two examples below, the wall insulation program and its associated claimed therm  
7 savings, and surprising and unexplained trends in the windows programs. I also  
8 describe a possible error in Avista's verified DSM savings for 2006.

9 **Q: Please discuss your examination of the wall insulation program data.**

10 A: In 2008, there were 210 participants in Avista's wall insulation program in  
11 Washington, with total savings claimed of 52,485 therms.<sup>55</sup> When the total therms  
12 claimed is divided by the number of participants, the average savings (reduced  
13 usage) per participant is 250 therms ( $52,485/210=250$ ). Using the estimate of 777  
14 therms for average annual heating load that Avista assumes in its savings estimates,  
15 this level of savings from wall insulation would be estimated to reduce the heating  
16 load for each participant by 32%, on average. ( $250/777=32%$ ).<sup>56</sup> This seems like a  
17 very large savings amount for one energy efficiency measure.

18 Another surprising observation is that the estimated average annual savings  
19 from wall insulation per participant (250 therms) is also two and a half times the

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<sup>55</sup> The DSM Verifier reviewed all residential insulation programs together and concluded the 2008 savings should be increased to 114.8% of therms reported by Avista. Titus Report, Table H3-E: Summary of Avista's 2008 DSM Verification Report (Washington only), p. 58.

<sup>56</sup> Avista's Responses to Public Counsel Data Request No. 283, Attachment A; and Public Counsel Data Request No. 402, Attachment A. In 2008, Avista reported a total of 44 participants in the wall insulation program in Idaho, with total reported savings of 12,976 therms. This results in an average of estimated savings of 295 therms per customer, which represents a 38% reduction in heating load. Avista's Response to Public Counsel Data Request No. 283, Attachment A.

1 average savings level from ceiling or attic insulation. That is, for the ceiling or attic  
2 insulation program, Avista's data shows an average savings level of 101 therms per  
3 participant in 2008.<sup>57</sup> In general, the most important location to install insulation is  
4 in the ceiling or attic, because of the large degree of potential heat loss through the  
5 top of the house.<sup>58</sup>

6 I also observed the following regarding participation in the wall insulation  
7 program:

- 8 • Of the 210 Washington residential customers who participated in the wall  
9 insulation program, 26 customers, or 12%, were estimated to reduce their  
10 consumption by 388 therms or higher. This would represent half (50%) of  
11 the heating load for the average base case house using 777 therms annually  
12 for heating. In Idaho this group was even larger. In 2008, 27% of Idaho  
13 customers (12 of 44) participating in the program were estimated to achieve  
14 savings levels of 388 therms or higher. These seem like large savings  
15 amounts for one DSM measure.

---

<sup>57</sup> Avista reported that 564 customers in Washington participated in the ceiling/attic insulation program in 2008, with total reported therm savings of 67,691 therms. However, one participant was reported to have 10,837 therm savings, and received a \$213 rebate for a total project cost of \$426. I assumed the savings level for this customer was incorrectly entered in the spreadsheet, and therefore excluded that participant from the average calculation.  $(67,691 - 10,837) / 563 = 101$  therms. If this customer is included in the average, the amount increases to 120 therms. Avista's Response to Public Counsel Data Request No. 283, Attachment A. Public Counsel has asked Avista for clarification as to whether the reported savings of 10,837 therms for this customer was an error, and whether this amount was included in the amount of "verified" DSM savings for 2008.

<sup>58</sup> For example, see *All About Insulating Your Home*, Puget Sound Energy, 1999, p. 10. This energy efficiency brochure, intended for residential customers, is available at the PSE website:  
<http://www.pse.com/solutions/foryourhome/pages/waysWeatherization.aspx?tab=3&chapter=1>

1           •       In 2008, there were seven customers with claimed therm savings that  
2                   exceeded 777 therms (the entire average annual base heating load). For these  
3                   seven customers alone, Avista claimed therm savings of 6,494 therms.<sup>59</sup>  
4           These reported savings amounts also seem surprisingly large. It may be possible that  
5           these averages are affected by very large houses where a significant improvement in  
6           wall insulation was made, and thus perhaps savings in the range of what Avista  
7           reported could be realized in a few instances. However, it seems unlikely that  
8           savings from large houses would be enough to drive the numbers up so much for the  
9           entire population.<sup>60</sup>

10                  Another factor that casts doubt on these high savings numbers is that the  
11                  DSM Verification report indicates a large number of customers participating in  
12                  Avista’s residential gas rebate programs participate in more than one program.<sup>61</sup> As  
13                  customers participate in more than one program, and their homes become more  
14                  efficient or “tighter,” the impact of each additional DSM measure is smaller than it  
15                  otherwise would be. For example, if a residential customer with a 90% efficient  
16                  furnace installs wall insulation, the savings (reduced usage) they will realize will be  
17                  smaller than if the home had an 80% efficient furnace. Avista’s assumptions  
18                  regarding savings from wall insulation (and other insulation programs) assume that

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<sup>59</sup> In 2008, there were four Washington customers with reported therm savings from wall insulation of 1,173, 806, 806, and 1,023 therms. In Idaho there were three such customers with reported therm savings of 791, 934, and 961 therms. Avista’s Response to Public Counsel Data Request No. 283, Attachment A.

<sup>60</sup> If the average is re-calculated by excluding the fourteen (14) customers with reported savings of 500 therms or higher, the average is 217 therms, which still represents a 28% reduction in the average annual heating load. These fourteen customers had total reported therm savings of 10,003 therms. (42,482/196=217). Avista’s Response to Public Counsel Data Request No. 283, Attachment A.

<sup>61</sup> Please see n.28 above.

1 the home has an 80% efficient gas furnace.<sup>62</sup> If a significant proportion of  
2 participating customers actually have furnaces with an efficiency rating of 90% or  
3 higher, which may be likely because the furnace program is one of the most popular  
4 programs, then Avista's assumption would overstate the potential savings impact  
5 from the wall insulation. This would tend to lower the expected savings from the  
6 program.

7 **Q: Please discuss your examination of the data regarding Avista's residential**  
8 **windows programs?**

9 A: I observed an unexpected trend in data for Avista's window programs. For these two  
10 programs (window replacement and new windows), Avista's reported savings claims  
11 have increased at a rate that far surpasses changes in participation levels for these  
12 programs. For example, participation in Avista's window replacement program for  
13 natural gas customers increased slightly more than two-fold from 2006 to 2008, from  
14 711 customers to 1,591 customers. But during that same period, Avista's reported  
15 therm savings for the program increased more than five-fold, from 29,191 therms in  
16 2006 to 149,429 therms in 2008.<sup>63</sup> Avista has provided conflicting information in  
17 discovery as to whether there was an increase in their per square-foot savings  
18 estimates for these programs, but most recently the company has stated there was not  
19 an increase.<sup>64</sup> Public Counsel has requested additional explanation from Avista

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<sup>62</sup> Avista's Response to Public Counsel Data Request No. 402, Attachment A; Avista's Response to Public Counsel Data Request No. 441.

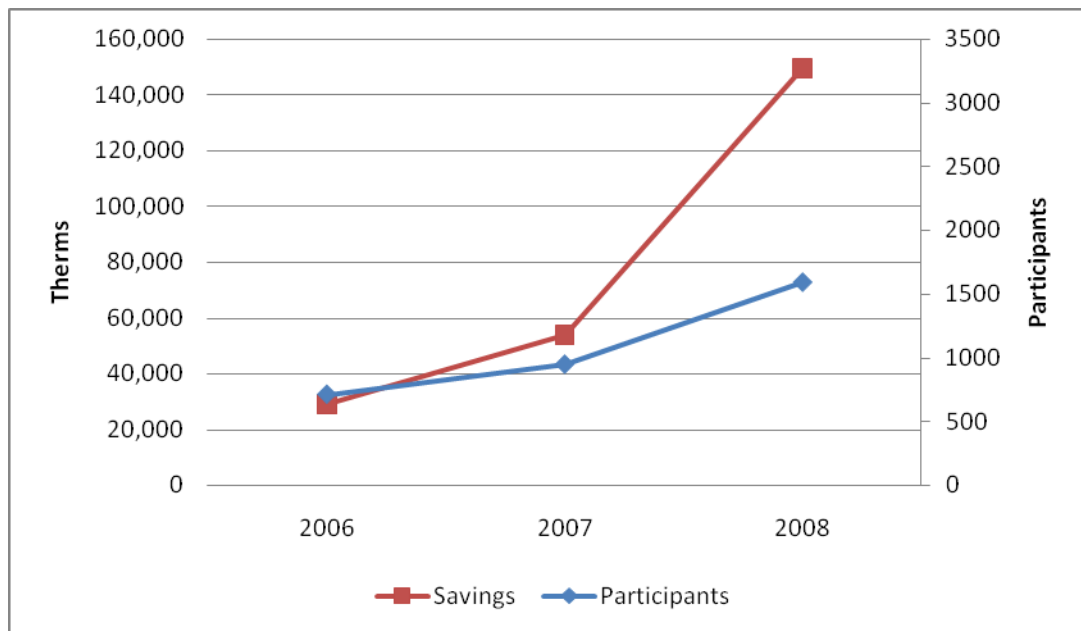
<sup>63</sup> Avista's Response to Public Counsel Data Request No. 283, Attachment A. *See also* Exhibit No.\_\_(MMK-2).

<sup>64</sup> Avista's Response to Public Counsel Data Request No. 402, Attachment A, indicates the savings estimate for window replacement is 1.24 therms per square foot, which is higher than the previous assumption of .83 therms per square foot used in 2006 and 2007. However, in a subsequent discovery response Avista explained that this attachment was a "living document" and the increase to 1.24 was not implemented. Avista's Response to Public Counsel Data Request No. 441, p. 17.

1 regarding these disproportionate increases.

2 The disproportionate increase in reported savings, as compared to  
3 participation in the window replacement program, is shown graphically in Graph 1  
4 below.

5 **Graph 1. Avista's Residential Gas Window Replacement Program:**  
6 **Washington Savings (Therms) and Participation Data**



8

9 Source: Avista's Response to Public Counsel Data Request No. 283, Attachment A.

10 **Q: Were there any other anomalies you identified with respect to Avista's**  
11 **Residential Gas DSM Programs?**

12 A: Yes. A puzzling discrepancy I have identified pertains to the DSM Savings claims  
13 for 2006 for the residential high efficiency gas furnace program in Idaho.<sup>65</sup> The  
14 Titus Report states that Avista reported savings of 144,642 therms for its gas high

<sup>65</sup> As explained above, the "DSM Test" for the decoupling mechanism examines Avista's DSM performance in Washington and Idaho combined. Therefore, the amount of decoupling deferral allowed depends in part on DSM performance in Idaho.

1 efficiency furnace program in Idaho in 2006 to the DSM Verifier, and that  
2 RIA/Nexant verified that amount at 100% in their 2006 DSM Verification Report.<sup>66</sup>  
3 This seems like an unusually large savings estimate for Idaho, given that the  
4 comparable number for Washington in 2006 was 61,920 therms, and Avista has  
5 many more gas customers in Washington than in Idaho.<sup>67</sup> Most puzzling, however,  
6 is that in discovery in this proceeding, Avista has reported savings of 31,104 therms  
7 for its gas high efficiency furnace program in Idaho in 2006, directly contradicting  
8 the data it had apparently provided to the DSM Verifier.<sup>68</sup>

9 I identified this discrepancy while preparing this testimony, and will seek  
10 clarification from Avista as to which number is correct. However, participation data  
11 provided in the 2006 DSM Verification Report suggests that the 31,104 savings  
12 claim is likely the correct amount. The 2006 DSM Verification Report states that in  
13 2006, the high efficiency furnace program was the most popular residential program,  
14 with total participants (Washington and Idaho) of 1,250.<sup>69</sup> Multiplying the number  
15 of participants by the estimated savings amount per furnace in 2006 (72 therms),  
16 results in total reported savings of 90,000 therms for Washington and Idaho  
17 combined. In light of reported Washington savings of 61,920 in 2006, this suggests  
18 that savings in the range of 30,000 for Idaho would be the correct amount.

19 / /

20 / / /

21 / / / /

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<sup>66</sup> Titus Report, Table H3-B Summary of Avista's 2006 DSM Verification Report (Idaho only), p. 55.

<sup>67</sup> *Id.*, Table H3-A, Summary of Avista's 2006 DSM Verification Report (Washington only), p. 54.

<sup>68</sup> Avista's Response to Public Counsel Data Request No. 283, Attachment A.

<sup>69</sup> 2006 DSM Verification Report, pp. 8-9.



1 **Q: Could this possible error have affected Avista’s performance in achieving the**  
2 **“DSM Test” in 2006 and the amount of decoupling deferrals approved for**  
3 **recovery?**

4 A: Yes. Avista’s reported “verified” DSM savings claim for 2006, (1,052,390 therms),  
5 includes a savings amount of 144,642 therms for the furnace program in Idaho.<sup>70</sup> If  
6 the total Washington and Idaho DSM savings amount is reduced by 113,538 therms  
7 to reflect savings of 31,104 for the Idaho furnace program (144,642 – 31,104), then  
8 Avista’s 2006 DSM performance would have been 938,852 therms. At this level,  
9 Avista’s performance would have been 88.4% of the 2006 DSM IRP Goal of  
10 1,062,000 therms. Consequently, Avista would have been able to recover only 70%  
11 of the amount deferred under the decoupling mechanism.<sup>71</sup>

12 In its initial decoupling rate adjustment filing, however, Avista was allowed  
13 to recover \$305,677, which represented 80% of the decoupling deferrals for the first  
14 six months of the pilot (January to June, 2007), due to the fact the company had  
15 purportedly achieved 99.1% of their DSM IRP Goal, according to the DSM  
16 Verification Report. If Avista had been allowed to recover only 70% of the  
17 decoupling deferrals for this initial six month period, the amount approved for  
18 recovery would have been reduced by \$38,210 to a total of \$267,467.<sup>72</sup>

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<sup>70</sup> Avista’s Initial Filing in UG-071863 (Decoupling Rate Adjustment), September 14, 2007, includes Exhibit 5, Summary of the Independent Verification of Avista’s 2006 Completed Natural Gas-Efficiency Claims. This Exhibit shows residential reported savings of 382,355 therms. The Titus Report, Tables H3-A and H3-B, show reported savings for residential projects of 167,705 therms (Washington) and 214,650 therms (Idaho, which includes 144,642 therms for the furnace program) for a total of 382,355 therms.

<sup>71</sup> Order 04, UG-060518, ¶ 15.

<sup>72</sup> Avista’s Initial Filing, UG-071863, September 14, 2007, states that total decoupling deferrals during the initial six-month period were \$382,096.

1           The fact that this discrepancy and likely error was not identified when  
2           Avista’s initial decoupling rate surcharge was under consideration by the  
3           Commission is an example of the complexity of this decoupling mechanism, and the  
4           challenge of reviewing the filing in the short time period allowed to Commission  
5           Staff and other interested parties to review the company’s performance and  
6           supporting exhibits.<sup>73</sup>

7           **IV. AVISTA’S MANY CHANGES TO ITS SAVINGS CLAIMS**  
8           **ASSUMPTIONS MAKE IT DIFFICULT TO CLEARLY**  
9           **ANALYZE PERFORMANCE OVER TIME**

10  
11   **Q: You have stated that Avista made several changes to its methods for estimating**  
12   **reported therm savings from its natural gas DSM programs. Please describe**  
13   **those changes.**

14   A: Effective in 2008, during the term of the decoupling pilot, Avista made several  
15   significant changes to its assumptions and estimates for calculating reported therm  
16   savings. These revised assumptions and changes in reported savings estimates from  
17   Avista’s residential gas DSM programs affect the company’s reported performance,  
18   making it difficult to clearly analyze progress over time.<sup>74</sup> Major changes to  
19   Avista’s therm savings claim methodology for Avista’s residential programs that  
20   became effective in 2008 are outlined in Table 1 below.

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<sup>73</sup> Avista’s adjustments to the decoupling surcharge are filed with the Company’s fall PGA filing. The decoupling surcharge filing I am referring to here was filed by Avista on September 14, 2007 and considered by the Commission just over six weeks later, at the October 24, 2007 Open Meeting. Avista’s filing included the 2006 DSM Verification Report, a voluminous document, as well as other supporting documents. During this current proceeding, there have been errors and revisions to the DSM savings data made by Avista and also by Titus.

<sup>74</sup> I examined changes to the savings claims methods for the residential programs because Schedule 101, which is the only rate schedule participating in decoupling, is composed of about 90% residential customers.

1                    Table 1 shows that in 2008, Avista made at least nine changes to its  
2                    assumptions and savings estimates for its residential natural gas DSM programs. Of  
3                    these nine changes, only three were specifically recommended by the DSM Verifier,  
4                    those concerning the high efficiency water heater programs. Moreover, the six  
5                    changes to the savings estimates initiated by Avista had the most significant impact  
6                    on reported savings.

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1 **Table 1. Avista’s Changes to Residential Therm Savings Estimates, 2008<sup>75</sup>**

	DSM Measure	unit	Savings Estimates (therms)		Initiated By	Approx. Impact on 2008 Reported Results (therms)
			2006-2007	2008		
1.	High Efficiency Furnace	measure	72	123	Avista	(82,263)
2.	High Efficiency Boiler	measure	72	123	Avista	(2,661)
3.	High Eff. Water Heater 40 gallon	measure	11	8	DSM Verifier	234
4.	High Eff. Water Heater 50 gallon	measure	8	11	DSM Verifier	(474)
5.	Water Heater-Tankless	measure	11	60	DSM Verifier <sup>76</sup>	-
6.	Insulation – Ceiling/attic	sq. ft.	.042	.09	Avista	(36,102)
7.	Insulation - Floor	sq. ft.	.209	.313	Avista	(4,180)
8.	Insulation - Wall	sq. ft.	.209	.313	Avista	(17,439)
9.	Energy Star Clothes Washer	measure	1	9	Avista <sup>77</sup>	(8,200)
10	Replacement windows <sup>78</sup>	sq. ft.	.83	unk. <sup>78</sup>	n/a	
11	New Windows	sq. ft.	.42	unk. <sup>78</sup>	n/a	
<b>Approx. Net Impact of Avista’s Changes to Reported Savings Estimates</b>						<b>(151,085)</b>
<b>Avista’s Reported Residential Savings for 2008</b>						<b>521,424</b>
<b>Restated 2008 Savings with New Estimates “Removed”</b>						<b>370,339</b>

2

<sup>75</sup> Sources for Table 1 are as follows: Avista’s Responses to Public Counsel Data Request Nos. 283, Attachment A, 402, Attachment A, and 441; 2008 DSM Verification Report, Table 4.3, p. 47; Exhibit No. \_\_\_\_ (MMK-2).

<sup>76</sup> The DSM Verifier recommended a savings estimate of at least 52 therms for tankless hot water heaters. 2008 DSM Verification Report, Table 4.3, p. 47. Avista did not report any program participants in 2006 or 2007, so this increase did not affect reported results.

<sup>77</sup> The 2008 DSM Verification Report indicates the Energy Star clothes washer was a new program in 2008. However, Avista reported 174 Washington program participants in 2007, and claimed savings of 174 therms.

<sup>78</sup> Avista has provided conflicting information regarding the savings estimates for the windows programs (Please see n.64 above). Due to very large, disproportionate increases in claimed savings reported by Avista in comparison to the number of program participants, Public Counsel is seeking clarification as to whether there were changes in estimated savings.

1 **Q: What explanation did Avista provide for these changes to its savings estimates?**

2 A: In response to discovery in this proceeding, Avista has explained that most of these  
3 changes, particularly those initiated by Avista, were based on revised engineering  
4 analysis that modified key assumptions and inputs for these calculations. In the  
5 furnace calculations, for example, the calculation was adjusted to assume a 15%  
6 increase in efficiency, whereas previously Avista had assumed a 10% increase (from  
7 80% to a 90% efficient furnace). This calculation was also adjusted to assume  
8 additional heat loss through the floor, whereas previously that had not been  
9 included.<sup>79</sup> With respect to changes that increased the savings estimates for the  
10 insulation programs, Avista changed the assumptions regarding the level of existing  
11 insulation and the degree of improvement in the insulation installed. Avista said  
12 these changes were based on the rebates and improvements submitted by  
13 participating customers.<sup>80</sup> As shown in Table 1, these changes, which became  
14 effective in 2008, had a significant impact on reported savings results, and were not  
15 identified or recommended by the DSM Verifier

16 Changes were also made to each of the three water heater programs, based on  
17 the recommendations of the DSM Verifier. These changes had only a very slight  
18 impact on reported results for 2008, however.

19 As discussed earlier in my testimony, these changes were not based on a  
20 measurement and verification analysis that actually measured the impact of the DSM  
21 measures on reducing energy usage for program participants.

22 / /

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<sup>79</sup> Avista's Response to Public Counsel Data Request No. 441.

<sup>80</sup> *Id.*

1 **Q: Were the changes to Avista’s savings estimates, as shown in Table 1 above,**  
2 **discussed in the Titus Report?**

3 A: No.

4 **Q: Why do you distinguish between changes proposed by Avista and those**  
5 **proposed by the DSM Verifier?**

6 A: I believe this distinction is relevant for at least two reasons. First, it shows that the  
7 impetus for these changes to the savings estimates came from Avista, rather than the  
8 independent third-party retained to review and verify the DSM savings claims, and  
9 where appropriate, recommend changes. Second, it also shows that during the term  
10 of the decoupling pilot, Avista did not consistently follow the recommendations of  
11 the DSM Verifier (RIA/Nexant).

12 **Q: Please explain in more detail.**

13 A: In their 2008 DSM Verification Report, RIA/Nexant ultimately accepted Avista’s  
14 many changes to their residential savings estimates. I believe that in part, this  
15 reflects the complexity and subjectivity of the many assumptions and calculations  
16 used to develop these savings estimates. In addition, it also illustrates that the  
17 approach taken by the DSM Verifier is of limited utility because it does not include  
18 actual measured energy usage.

19 Avista’s reported savings estimates became somewhat of a “moving target”  
20 during the Decoupling Pilot period. Estimates that were reviewed and accepted by  
21 the DSM Verifier in 2007, and recommended by the DSM Verifier for use in 2008,  
22 were then subsequently changed by Avista. These changes, which contradicted the  
23 recommendations of the 2007 DSM Verification Report, were ultimately accepted by

1 RIA/Nexant. For example, as mentioned earlier, in their 2006 and 2007 reports, the  
2 DSM Verifier accepted Avista’s estimate of 72 therms per high efficiency residential  
3 furnace and recommended Avista continue to use that estimate in 2008. In 2008,  
4 Avista increased the savings estimate to 123 therms based upon its own engineering  
5 review, and the DSM Verifier subsequently accepted that estimate.<sup>81</sup> These  
6 “roving” recommendations and determinations regarding savings estimates also  
7 apply to the boiler program, and all three insulation programs (ceiling/attic, wall,  
8 floor).

9 **Q: Have you provided an analysis to support the restated 2008 residential savings**  
10 **shown above in Table 1?**

11 A: Yes, Table 1 above provides the results of my restatement analysis for each program,  
12 and my Exhibit No. \_\_\_\_ (MMK-2) provides the data and calculations used to restate  
13 Avista’s reported residential therm savings for 2008, using the estimation  
14 assumptions that had been in place in 2006 and 2007. This exhibit shows that  
15 Avista’s reported therm savings of 521,424 therms for the residential class in 2008  
16 would be decreased by 151,085 therms to 370,339 therms, a 29% decrease.<sup>82</sup> This  
17 analysis does not include any restatement for the windows programs. If there were

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<sup>81</sup> 2008 DSM Verification Report, Table 4.3: Summary of Engineering Evaluations for Residential Programs, p. 43. (Mr. Hirschorn’s Workpapers, p. E-625). This table provides a summary of Avista reported savings estimates and audit recommended savings for each year, 2006 through 2008.

<sup>82</sup> Exhibit No. \_\_\_\_ (MMK-2). There are three sets of DSM Reported data: (1) RIA/Nexant Verified Savings, (2) Titus Verified DSM Savings, and (3) Avista Reported DSM Savings. My analysis uses the third set, Avista reported DSM savings in discovery in this proceeding, because neither the DSM Verification Reports, nor the Titus Verified Savings provide granular, program level savings data, whereas the Avista reported data provides this information. (Avista’s Response to Public Counsel Data Request No. 283, Attachment A). The net effect of the DSM Verification was to increase savings for the residential sector in 2006 and 2008, whereas there was a slight decrease in 2007.

1 in fact increases to the estimates for those programs, the impact of the restatement  
2 would be larger.<sup>83</sup>

3 In addition, my Exhibit No. \_\_\_\_ (MMK-3) provides a restatement of Avista’s  
4 savings performance for Washington and Idaho from 2006 to 2008. This exhibit  
5 shows that, while overall therm savings increased from 2006 to 2007 in Washington,  
6 once the residential class savings are adjusted to remove the impact of the changes in  
7 savings estimation methods, overall savings performance in Washington decreased  
8 from 2007 to 2008 by almost 25%.<sup>84</sup>

9 I believe my Exhibit No. \_\_\_\_ (MMK-3) is a more accurate presentation of  
10 Avista’s performance in Washington and Idaho during the decoupling pilot, as  
11 compared to Table C1-C of the Titus Report. This analysis provides an “apples to  
12 apples” comparison of savings data. This exhibit shows that while Avista still  
13 exceeded the IRP savings goal in 2007 and 2008, once the 2008 DSM data is  
14 restated, the company’s performance is only about 5% above the IRP savings goal.

15 **Q: Do you have other concerns about the DSM savings totals for Washington and**  
16 **Idaho?**

17 **A:** Yes. As I have discussed earlier, I did not include an adjustment for the window  
18 replacement program in the restatement shown in Exhibit No.\_\_\_\_ (MMK-3). If the  
19 claimed savings for that program had grown at a rate comparable to the growth in  
20 program participation, claimed savings would only have been about 65,387 therms,

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<sup>83</sup> Please see n.64 above regarding conflicting information about savings estimates for the windows programs.

<sup>84</sup> This percentage was calculated as follows:  $1,153,283 - 871,426 / 1,153,283 = 24\%$ . Please note that Table C1-C in the Titus Report has been corrected, along with several other tables providing DSM Savings Amounts for 2008 and associated Lost Margins, and were sent by Titus to parties on August 7, 2009. Avista has advised the Parties of the company’s intention to file these corrected tables and exhibits to the Titus Report shortly.



1 instead of the 149,429 reported by Avista for the program in 2008 in Washington.<sup>85</sup>

2 A reduction of this magnitude to the total DSM savings achievement of 1,505,039  
3 for 2008, shown in Exhibit No. \_\_\_\_ (MMK-3), would bring Avista's overall DSM  
4 performance for Washington and Idaho below the IRP goal for 2008.<sup>86</sup>

5 **Q: Do the restated residential savings amounts you provide in Exhibit No. \_\_\_\_  
6 (MMK-2) impact the amount of Avista's lost margins from its DSM programs?**

7 A: Yes. As shown in the Titus Report, lost margins due to Avista's DSM programs for  
8 Schedule 101 gas customers were calculated by Titus to be \$162,661 for 2008.<sup>87</sup> If  
9 the restated Washington residential amount shown in Exhibit No. \_\_\_\_ (MMK-2) is  
10 used in this calculation instead, lost margins for Washington Schedule 101 customers  
11 in 2008 would have been about \$123,124, or about \$40,000 lower than what is  
12 shown in the Titus Report.<sup>88</sup>

13 **Q: Has the accuracy of reported savings estimates by utilities from utility DSM  
14 programs been examined in other states?**

15 A: Yes. As reported in a recent article in *Public Utilities Fortnightly*, in California there  
16 was a very significant difference between utility reported savings and those savings

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<sup>85</sup> This was calculated as follows:  $1,591/711=2.24$  growth rate in participation from 2006 to 2008. 2006 reported savings for Washington window replacement were  $29,191 * 2.24 = 65,387$  therms. Exhibit No. \_\_\_\_ (MMK-2). If the Idaho data is similarly adjusted, savings would have been 21,275 therms in 2008, instead of the 40,336 claimed savings reported by Avista, resulting in an additional reduction of 19,061 therms.

<sup>86</sup> Reducing total savings by 84,042 therms for Washington ( $149,429-65,387=84,042$ ) and Idaho by 19,061 therms as calculated in the prior footnote, would be a reduction of 103,103 therms. Total savings for WA and ID would be lowered from 1,505,070 to 1,401,967, which is 98.4% of the IRP Goal of 1,425,070 therms.

<sup>87</sup> Titus Report, Table E-2 (Corrected Version), p. 45. Avista has advised the Parties of its intention to file corrected and revised versions of certain tables and exhibits to the Titus Report.

<sup>88</sup> This was calculated using data provided in an excel spreadsheet attached to Mr. Hirschhorn's workpapers, in the excel document labeled "C.xls," worksheet "2008 DLM," as corrected and revised by Titus in an e-mail sent to Parties on August 7, 2009. Avista has advised the Parties of their intention to file revised and corrected tables and exhibits to the Titus Report. The amount was calculated in the following manner: Schedule 101 residential as re-stated per Exhibit No. \_\_\_\_ (MMK-2) ( $370,339 * .2175$  Sched. 101 margin rate = \$80,549), + Schedule 101 low income (\$15,655) + Schedule 101 commercial (\$26,920) = \$123,124.

1 that were subsequently post-verified as a result of analysis by the Energy Division  
2 Staff of the California PUC. The California utilities had reported that collectively,  
3 they had achieved 130% of the CPUC's electric goal and over 110% of the CPUC's  
4 natural gas goal for 2006 and 2007 energy efficiency accomplishments. The CPUC's  
5 Energy Division Staff, in contrast, concluded that collectively the utilities had  
6 achieved 78% of the CPUC's combined electric and natural gas goals.<sup>89</sup> The  
7 analysis of the California Energy Division Staff included measurement and  
8 verification for programs with the largest impact on reported results.

9 In response to discovery in this case, Avista has indicated that the assumed  
10 therm savings claim for its residential furnace program in Oregon has been reduced  
11 from 90 therms to 70 therms per high efficiency furnace, as a result of measurement  
12 and evaluation conducted by the Energy Trust of Oregon.<sup>90</sup>

13 **Q: Your Exhibit No. \_\_\_\_ (MMK-2) shows that once Avista's residential savings**  
14 **estimates are "restated" they have still improved. Please comment.**

15 A: Avista's DSM performance appears to have improved in the Washington residential  
16 sector, even when one applies consistent estimation methods. However, as Mr.  
17 Powell stated in his testimony, Avista has devoted more funding and effort to  
18 outreach designed to direct customers to the rebate programs. Avista has primarily  
19 done this through their "Every Little Bit" campaign.<sup>91</sup> As a result of this enhanced  
20 outreach we would expect to see an increase in participation levels in the rebate  
21 programs.

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<sup>89</sup> *Stabilizing California's Demand: The real reasons behind the state's energy savings*, Cynthia Mitchell, et. Al., Public Utilities Fortnightly, March 2009, pp. 50-62. See esp. n.28.

<sup>90</sup> Avista's Response to Public Counsel Data Request No. 283, Attachment A. Public Counsel has asked Avista for a copy of the ETO's evaluation through discovery in this proceeding.

<sup>91</sup> Direct Testimony of Jonathan Powell Representing Avista, Exhibit No. \_\_\_\_ (JP-1T), p. 4, ll. 10-17.

1           In addition, Avista’s DSM program expenditures have increased very  
2 significantly during this time. Given these much larger program budgets, one would  
3 expect to see increased savings achievements.<sup>92</sup> Also, as noted in Mr. Powell’s  
4 testimony and the Titus Report, Avista’s avoided costs have increased during the  
5 period 2006 to 2008, which makes more DSM measures cost-effective, often at  
6 greater cost.<sup>93</sup>

7           **Table 2. Washington Natural Gas DSM Savings and Expenditures, 2006 to 2008**  
8

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>% Increase 2006 - 2008</b>
<b>Expenditures</b>	\$2,025,641	\$2,569,606	\$4,393,712	116%
<b>Savings (therms) per Exh. No. _MMK-3</b>	671,046	1,153,283	871,426	30%
<b>Cost/therm saved</b>	\$3.02	\$2.23	\$5.04	67%

9  
10           Table 2 above shows that Avista’s natural gas DSM program expenditures  
11 have increased significantly from 2006 to 2008, by 116%. The cost per therm saved  
12 has also increased significantly during the term of the decoupling pilot. These costs,  
13 which are passed on directly to ratepayers through the natural gas DSM tariff rider  
14 (Schedule 191), have increased at a rate that significantly exceeds the growth in  
15 savings achieved.

16           Another factor contributing to increased participation in Avista’s gas DSM  
17 programs during the 2006 to 2008 period is that in 2005, Avista had recovered from

---

<sup>92</sup> These DSM program costs were collected from ratepayers through the gas and electric tariff riders.

<sup>93</sup> Direct Testimony of Jonathan Powell Representing Avista, Exhibit. No. \_\_\_\_ (JP-1T) p. 2, l. 19 to p. 3, l. 3.

1 a time when it carried large negative balances in the DSM tariff rider accounts.  
2 Prior to 2006, Avista was not spending all tariff rider funds on DSM programs, due  
3 to the large negative balances the company accrued during the 2001 western energy  
4 crisis. During the two year period 2004 to 2005, Avista collected a total of  
5 \$3,611,361 in gas DSM revenues through the tariff rider (Schedule 191), but their  
6 expenditures for gas DSM were \$2,604,104. Therefore, a total of \$1,007,257, or  
7 28% of tariff rider revenues during this two-year period were allocated to write-  
8 down the negative balance, instead of toward programs.<sup>94</sup> As discussed in the Titus  
9 Report, Avista began to consider the potential for DSM portfolio expansions in 2005  
10 as the negative balances were retired.<sup>95</sup>

11 **Q: Does the decoupling mechanism provide any incentive to Avista to manage its**  
12 **DSM programs in a cost-effective manner?**

13 A: No. Avista’s decoupling mechanism, as it existed during the pilot period and as  
14 Avista proposes for its permanent continuation, does not contain a structural element  
15 to encourage Avista to manage its DSM program costs as efficiently and effectively  
16 as possible. This is a noteworthy and important distinction between a decoupling  
17 mechanism and the pilot energy efficiency incentive mechanism in Washington. For  
18 example, the electric incentive mechanism currently in place for Puget Sound Energy  
19 (PSE) includes a “net shared incentive” component, whereby part of the potential

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<sup>94</sup> Titus Report, Table C4-A WA DSM Tariff Rider Balance History, p. 19.

<sup>95</sup> *Id.*

1 incentive payment to PSE is determined based upon the difference between PSE's  
2 avoided cost and the total resource cost of the electric DSM portfolio.<sup>96</sup>

3 **V. SUMMARY AND CONCLUSIONS**

4 **Q: Please summarize your testimony.**

5 A: The fact that neither the DSM Verification performed by RIA and Nexant, nor the  
6 Titus Report, included any actual measurement of energy usage by Avista's gas  
7 DSM program participants is a serious flaw. Moreover, this does not appear to be  
8 consistent with best practices regarding evaluation, measurement, and verification.  
9 The best approach to examining the accuracy and reliability of savings estimates is  
10 through an independent third-party evaluation that analyzes pre- and post-installation  
11 energy usage of a statistically valid sample of program participants. While it is  
12 likely not cost-effective to do this for all DSM programs, those with a large  
13 percentage of reported savings should be the highest priority for evaluation. For  
14 example, such an evaluation of the furnace program I have discussed in my  
15 testimony would help determine whether an appropriate savings estimate of reduced  
16 annual usage from a highly efficient residential furnace for a typical customer is 72  
17 therms (previous estimate), 123 therms (Avista's new estimate), or some other  
18 amount.

19 In addition, the anomalies described in my testimony illustrate some of the  
20 pitfalls of relying solely on savings estimates or engineering estimates, and  
21 underscore the need for measurement of energy usage by DSM program participants.

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<sup>96</sup> *WUTC v. PSE*, Docket Nos. UE-060266 & UG-060267, Order 08 (Final Order), January 5, 2007, at ¶¶ 145-158. *See also*, Direct Testimony of Joelle R. Steward for Commission Staff, UE-060266 & UG-060267, July 25, 2006, Exhibit No. \_\_\_\_ (JRS-1T), pp. 25-26, for an explanation of the net shared incentive component of the mechanism.

1 As noted earlier, Public Counsel did not undertake a complete audit of Avista’s gas  
2 DSM programs. However, the concern raised in the Titus Report that the DSM  
3 Verification did not reflect measured savings is validated by the fact that of the small  
4 sample of projects I examined, a number included projects with surprising and hard  
5 to explain levels of reported therm savings.

6 The anomalies I have described in therm savings claims, the numerous  
7 changes to Avista’s methods of calculating savings resulting from their gas DSM  
8 programs, as well as the flaws of the DSM verification lead me to conclude that  
9 Avista has not provided a “convincing demonstration that the mechanism has  
10 enhanced Avista’s conservation efforts in a cost-effective manner.”<sup>97</sup>

11 **Q: Are the issues and conclusions described in your testimony relevant to Mr.**  
12 **Brosch’s recommendation that the Commission consider an incentive**  
13 **mechanism in lieu of decoupling for Avista?**

14 A: Yes. There are two general parameters Mr. Brosch outlines in his testimony  
15 related to an incentive mechanism that are relevant to the issues described in my  
16 testimony. First, such a mechanism should have a meaningful measurement and  
17 verification (M&V) component, with evaluation and analysis conducted by an  
18 independent third-party, with oversight and guidance from a stakeholder advisory  
19 group. Second, an incentive mechanism should include a design component that  
20 encourages Avista to manage its DSM programs and expenditures in the most cost-  
21 effective and efficient manner possible.

22 / /

23 \_\_\_\_\_  
<sup>97</sup> Order 04 Approving Natural Gas Decoupling Mechanism, UG-060518, ¶ 33.

1 **Q: Does this conclude your testimony?**

2 **A: Yes.**