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2007 JUN 11 10:01

Idaho Public  
UTILITIES COMMISSION

June 1, 2007

Jean Jewell, Secretary  
Idaho Public Utilities Commission  
W. 472 Washington Street  
Boise, ID 83720

AVU-E-07-04

Re: Avista Corporation's Application to Implement Load Management Pilot Programs

Dear Ms. Jewell:

Enclosed for filing with the Commission is an original and 7 copies of the following tariff sheets:

Fifth Revision Sheet B      Canceling      Fourth Revision Sheet B  
Original Sheet 96

The Company proposes to offer residential and commercial demand response programs in portions of Sandpoint and Moscow for a two-year period. Internet protocol thermostats, direct control units and related technology will be installed to reduce energy usage at peak times of the year and gain experience with customer acceptance, program design, operational components, and cost-effectiveness.

The Company requests that the Commission approve the proposed tariff and tariff changes included in this filing to be effective July 15, 2007.

Enclosed are copies of the existing tariff Schedule Sheet B and tariff Schedule 96 with the changes, an Application that provides information supporting the proposed tariff, Attachment 1 to support cost effectiveness, and a notice to customers that will be posted in the Company's offices.

Please direct any questions on this matter to myself at (509) 495-4975 or Bruce Folsom at (509) 495-8706.

Sincerely,

A handwritten signature in cursive script that reads "Linda Gervais".

Linda Gervais  
Regulatory Analyst  
Avista Corporation  
linda.gervais@avistacorp.com

Enclosures

2007 JUN -1 10:02  
IDAHO PUBLIC  
UTILITIES COMMISSION

DAVID J. MEYER  
VICE PRESIDENT AND CHIEF COUNSEL OF  
REGULATORY AND GOVERNMENTAL AFFAIRS  
AVISTA CORPORATION  
P.O. BOX 3727  
1411 EAST MISSION AVENUE  
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TELEPHONE: (509) 495-4316  
FACSIMILE: (509) 495-8851

**BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION**

IN THE MATTER OF THE APPLICATION )  
OF AVISTA CORPORATION FOR THE )  
AUTHORITY TO IMPLEMENT LOAD )  
MANAGEMENT PILOT PROGRAMS IN )  
IN THE SANDPOINT AND MOSCOW AREAS )  
 )  
 )  
\_\_\_\_\_ )

CASE NO. AVU-E-07-04

APPLICATION OF AVISTA CORPORATION

(ELECTRIC)

1  
2  
3 **I. INTRODUCTION**

4 Avista Corporation doing business as Avista Utilities (hereinafter Avista or  
5 Company), at 1411 East Mission Avenue, Spokane, Washington, respectfully requests that  
6 the Commission approve the enclosed proposed Company tariff Schedule 96, "Energy Load  
7 Management Programs - Pilot."

8 The Company proposes to offer residential and commercial demand response  
9 programs in portions of Sandpoint and Moscow for a two-year period. Internet protocol  
10 thermostats, direct control units and related technology will be installed to reduce energy  
11 usage at peak times of the year and gain experience with customer acceptance, program  
12 design, operational components, and cost-effectiveness.

13 The Company requests that this filing be processed under the Commission's Modified  
14 Procedure rules.

15 Communications in reference to this Application should be addressed to the following:

16 David J. Meyer, Esq.  
17 Vice President and Chief Counsel of  
18 Regulatory and Governmental Affairs  
19 Avista Corporation  
20 P.O. Box 3727  
21 1411 E. Mission Avenue, MSC-13  
22 Spokane, WA 99220-3727  
23 Phone: (509) 495-4316  
24 Fax: (509) 495-8851

25 Kelly Norwood  
26 Vice President - State and Federal Regulation.  
27 Avista Corporation  
28 P.O. Box 3727  
29 1411 E. Mission Avenue, MSC-7  
30 Spokane, WA 99220-3727  
31 Phone: (509) 495-4267  
32 Fax: (509) 495-8856

1 **II. BACKGROUND.**

2 Until recently, the Pacific Northwest has witnessed a low on-peak/off-peak price  
3 differential, averaging less than one cent/kWh. Going forward, however, peak prices are  
4 expected to be significantly higher than average prices. For example, the Company's  
5 Integrated Resource Plan (IRP) forecast shows average highest day prices are two to three  
6 times higher (\$80 to \$100/MWh) than average day prices. In addition, the highest prices will  
7 be an additional two to three times the average of those prices (consistent with the \$200+  
8 prices experienced during the summer of 2006). Recent events in the summer of 2006 have  
9 emphasized localized cost impacts of the Western regional market. Due to unit outages and  
10 record regional loads, the market price of power on July 24<sup>th</sup>, 2006 exceeded 20 cents/kWh.  
11 While this is not likely the beginning of an annual occurrence, it remains to be seen whether  
12 this was an anomaly or a five- or ten-year event.

13 With higher "highest day" prices and with additional volatility likely during peak  
14 events, demand reduction (DR) measures and distributed generation (DG) can mitigate cost  
15 impacts to customers and utilities.

16 **III. PROPOSED PILOT**

17  
18 This pilot will include the installation of approximately 50 smart communicating  
19 (internet protocol) thermostats, approximately 50 direct control units, and, potentially, other  
20 technology such as in-home energy usage display units in parts of Sandpoint and Moscow.  
21 The Company would call a minimum of four "events" during the year to test the technology,  
22 impacts on load and customer acceptance. These events will be performed at times of critical  
23 peak demand periods. Duration of the events will typically be four hours but can be  
24 extended to a six hour time frame depending on power price market conditions. This pilot

1 includes presentation of information to selected customers through the use of a web portal.  
2 Other customer features will be examined to test customer responsiveness.

3 The intent of this pilot is to be scalable. Given the multiple technology and program  
4 design options, the pilot program as proposed will assist with determining future deployment.  
5 This project will provide experience with specific technologies to examine cost-effectiveness  
6 and customer acceptance. Technology will be tested for functionality, thereby better defining  
7 system and hardware requirements, and assessing costs/benefits.

8 Customers who are on Schedules 1, 11, and 21 are eligible for participation.  
9 Qualifying participants must be homeowners or business owners occupying the premises for  
10 at least one year on a full-time basis. This will allow a comparison of energy consumption  
11 with previous summer/winter usage. The targeted participants are all electric load.  
12 Customers can have an alternate non-electric back-up heat source (an alternate heat source  
13 will be required if demand response units are to be installed on baseboard electric load).

14 Participating customers will be assessed no incremental costs. The “incentive” for a  
15 customer to participate is to receive upgraded equipment and the associated features.  
16 Customers opting in for a programmable controllable thermostat (PCT) will receive a  
17 thorough inspection of their HVAC system and a state of the art PCT. Participating  
18 customers with demand response switches will also receive an audit on all equipment  
19 controlled via the switch plus a \$10 a month credit for the months of July, August,  
20 December, January and February.

21 This program will examine some of the following directly controllable appliances:

- 22 • Air – Conditioning
- 23 • Complete HVAC system (electric heat-pump w/air conditioning)
- 24 • Water Heater
- 25 • Pool Pump
- 26 • Electric Forced Air Heating System

- Electric Base Board Heating System
- Irrigation pump (if any)

Due to Avista system capacity issues and seasonal spot power prices, air conditioning load will be given priority in customer selection. However, the Company intends to explore the effects of demand response on both winter and summer peaks. Therefore, customers with a HVAC system (for heating and air conditioning) will be given equal priority. Additionally, in order to gain knowledge and experience with a variety of demand response technologies, the Company will install demand response equipment in the above listed applications.

Pilot milestones are shown in Table 1, below.

Table 1 – Key Activities

- Create direct mailer
- Compile database of customers off selected feeders.
- Communication begins with target DR group.
- Select vendor(s) for equipment installation.
- Order, receive and install demand response equipment.
- Gather behavioral data of customers participating in pilot at time of equipment installation (# living in house, space heat or cool temperature preferences, time at premise, i.e., gone during normal work day, etc.).
- Perform a test callable event.
- Perform first real peak callable event (prescheduled).
- Perform additional callable event (prescheduled or real time).
- Send out/call first customer acceptance survey.
- Derive load curves for DR group and control group using data from the Meter Data Management (MDM) system and the Load Management System (LMS).
- Perform minimum of two callable events each year for winter peak (prescheduled or real time) and analyze.
- Perform a minimum of two callable events each year for summer peak (prescheduled or real time) and analyze.
- Pilot end. Send out/call final survey.
- Ongoing analysis and evaluation of customer acceptance, technology, impacts to possible future pricing strategies (Critical Peak Pricing or Time of Use).

#### IV. PROJECT COST AND COST EFFECTIVENESS REVIEW

The costs of this pilot are anticipated to be approximately \$123,000. Based on the assumed incremental cost of power during callable events of \$150,000, this program is expected to be cost-effective (as shown in Attachment 1). The assumptions, however, are subject to market conditions in the western United States power grid during peak periods and the duration of high power costs which, in turn, are influenced by temperature, availability of generating units, and the cost of fuel for generating units. In any event, however, as a test, at a relatively low cost, significant benefits will accrue by proceeding with this pilot.

#### V. MEASUREMENT AND EVALUATION

Measurement & Evaluation (M&E) is integral to defining benefits of a pilot program and identifying areas for improvement or modification. Avista's M&E will examine four components: 1) KW savings, 2) technology, 3) customer acceptance, and 4) interactions of peak demand on the Company's distribution system.

M&E of KW savings: The effects of shifting load during peak times will be measured using the demand response vendor's Load Management Software (LMS) and the Company's Meter Data Management system along with load curves derived from Synergee. (Information gathered from these three measurements will be input into a load-flow program called Synergee to develop load curves and to identify ways to improve system efficiencies.) Expected savings are 1 KW during summer peak and 2 KW during winter peak per customer. Results of the Company's sample will be measured against a control group with similar usage patterns from the same distribution feeder. The impacts of the distinctive climates of the two study areas (Moscow/Sandpoint) will also be examined.

M&E of Technology: In the course of this pilot, the Company intends to install demand response units on a variety of large electrical appliances (Air Conditioning, Space

1 Heat, Water Heaters, Pool Pumps, etc). Observation of the effects these appliances have on  
2 our demand response effort will mold the future of our demand response programs.  
3 Communications technologies will also be tested during the pilot. Lastly the Load  
4 Management Software will be observed for reliability and the accuracy of the data it  
5 provides.

6 M&E of Customer Acceptance: Customers participating in the program will do so by  
7 opting-in. They have the option of opting-out for a single event or out of the entire program.  
8 This customer participation will be tracked. Two surveys are expected to be given to  
9 customers participating in the pilot program. One survey will be given by phone or mail  
10 after the first “real” callable event, and a second survey by phone or mail at the end of the  
11 two year pilot program.

12 M&E of Peak Demand on Avista’s Distribution System: Peak demand affects  
13 Avista’s distribution system in several ways. Conductor losses are increased, transformer  
14 losses may be decreased and load imbalance is unpredictable. The pilot will also allow for  
15 an evaluation of the effects of peak demand on the Company’s distribution system.<sup>1</sup>  
16

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<sup>1</sup> Avista is currently testing other technology installations in a “living laboratory” mode. For example, the Company is in the process of implementing an advanced metering pilot in Sandpoint, Idaho. This pilot involved the installation of approximately ten thousand automated meters of two different types. A fixed radio frequency (RF) network was installed within Sandpoint proper, and a power line carrier network called TWACS was used in the surrounding rural areas of Clark Fork, Oden, Priest River and Old Town. The Company will have the capability to communicate with the meters via radio frequency or TWACS to remotely measure consumption in intervals and manage the data. In the near term, this project will allow collection of needed real time data on end use load shapes for rate design and provide a platform for pilot demand response projects. Future benefits of these technologies are outage management, load forecasting, remote connect/disconnect, price responsiveness for demand response, reduction of line losses and theft, as well as improved engineering planning/design (e.g. transformer sizing).

Engineering plans are being prepared to test feeder improvements in this pilot area. These plans will include the ability to iterate with the pilots described in this Application to aggregate data and further test synergies with these end-use applications.

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**VI. REQUEST FOR APPROVAL**

Avista, therefore, respectfully requests approval of a new tariff schedule 96 “Energy Load Management Programs - Pilot.”

WHEREFORE Applicant requests the Commission issue its Order finding the proposed pilot to be appropriate as described to be effective July 15, 2007.

DATED at Spokane, Washington, this 1st day of June, 2007.

AVISTA CORPORATION

By 

David J. Meyer

Vice President and Chief Counsel of  
Regulatory and Governmental Affairs

1 STATE OF WASHINGTON )

2 : ss

3 County of Spokane )

4

5 David J. Meyer, being duly sworn, on oath deposes and says:

6 That he is the Vice President and Chief Counsel of Regulatory and Governmental Affairs of  
7 Avista Corporation;

8 That he has read the foregoing Application, knows the contents thereof, and believes the  
9 same to be true.

10

11

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13



14

David J. Meyer

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17

Subscribed and sworn to before me this 1st day of June, 2007.

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Notary Public in and for the State

22

23

Washington, residing in Spokane

RECORDED  
2007 JUN -1 10:04  
DIVISION OF PUBLIC  
UTILITIES COMMISSION



AVISTA CORPORATION  
d/b/a Avista Utilities

**SCHEDULE 96****ENERGY LOAD MANAGEMENT PROGRAMS - PILOT****PURPOSE:**

To provide residential and commercial demand response programs for a two-year period. Internet protocol thermostats, direct control units and related technology may be installed to test reduction in energy usage at peak times of the year.

**AVAILABLE**

To Rate Schedule 1, 11, and 21 Customers in the State of Idaho where the Company provides electric service in selected areas of Sandpoint and Moscow.

**APPLICABLE**

To all customers receiving electric service who agree to participate under this schedule.

**INCENTIVE**

Participating customers with demand response switches will receive an audit on all equipment controlled via the switch plus a \$10 a month credit for the months of July, August, December, January and February.

**SPECIAL TERMS AND CONDITIONS**

Qualifying participants must be homeowners or business owners occupying the premises for at least one year on a full-time basis.

Customers can have an alternate non-electric back-up heat source (an alternate heat source will be required if demand response units are to be installed on baseboard electric load).

Participating customers will have no incremental costs.

This program will provide load use controls for some of the following appliances:

- Air – Conditioning
- Complete HVAC system (electric heat-pump w/air conditioning)
- Water Heater
- Pool Pump
- Electric Forced Air Heating System
- Electric Base Board Heating System
- Irrigation pump (if any)

Customers may apply for or terminate from this schedule anytime during the pilot.

Issued June 1, 2007

Effective July 15, 2007

AVISTA CORPORATION  
 dba Avista Utilities

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Issued	<del>June 16, 2006</del> June 1, 2007	Effective	<del>August 10, 2006</del> July 15, 2007
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Issued by Avista Utilities  
 By Kelly Norwood,

Vice President, State & Federal Regulation

AVISTA CORPORATION  
 dba Avista Utilities

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Issued ~~June 16, 2006~~  
 June 1, 2007

Effective ~~August 10, 2006~~  
 July 15, 2007

Issued by Avista Utilities  
 By Kelly Norwood,

Vice President, State & Federal Regulation

Attachment 1

Load Control Pilot

	Quantity	Unit Cost	Total	
PSTs (thermostats)	50	217.09	\$ 10,854.50	
PST trim rings	50	3.25	162.50	
Installation of PSTs + HVAC evaluation	50	80.00	4,000.00	
DCUs	50	100.00	5,000.00	
Installation of DCUs + HVAC eval	50	150.00	7,500.00	
LMS hosting, pagin & support set-up			4,500.00	
LMS monthly fee	48	997.88	47,898.24	
LMS training & set-up			1,200.00	
.5 FTE program manager - loaded			40,000.00	
1.25 student employees			20,000.00	
Ads, surveys and customer communication			5,000.00	
Energy efficient washer w/ sales tax	2	813.75	1,627.50	
Energy efficient dryer w/ sales tax	2	813.75	1,627.50	
Monthly participation incentive (Jan, Feb, Jul, Aug, Dec)	500	10	<u>5,000.00</u>	
Estimated cost of the pilot			\$ 154,370.24	
Number of callable events - summer per 2 yr pilot			4	
Number of callable events - winter per 2 yr pilot			4	
Hours per event			4	
kw savings per summer event	400	0.5	200	kW per pilot
kw savings per winter event	400	1.5	<u>600</u>	kW per pilot
Total savings per 2 yr pilot			800	
Strike price			200.00	
Economic benefit of load control			160,000.00	
Net Benefit			5,629.76	

AVISTA CORPORATION  
DBA AVISTA UTILITIES

NOTICE OF TARIFF CHANGE  
(Electric Service Only)  
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Notice is hereby given that the "Sheet" listed below of Tariff IPUC No. 28, covering electric service, has been filed with the Idaho Public Utilities Commission in Boise, Idaho:

Fifth Revision Sheet B      Canceling      Fourth Revision Sheet B  
Original Sheet 96

The purpose of this filing is to offer residential and commercial demand response programs in portions of Sandpoint and Moscow for a two-year period. Internet protocol thermostats, direct control units and related technology will be installed to reduce energy usage at peak times of the year and gain experience with customer acceptance, program design, operational components, and cost-effectiveness.

Copies of the proposed tariff changes are available for inspection in the Company's offices and on the Company website at [www.avistautilities.com/prices/rates](http://www.avistautilities.com/prices/rates).

Issue Date:            June 1, 2007  
Keep Posted Until:    July 15, 2007