

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET NO. UG-17_____

DIRECT TESTIMONY OF

JODY MOREHOUSE

REPRESENTING AVISTA CORPORATION

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I. INTRODUCTION

Q. Please state your name, business address, and present position with Avista Corp.

A. My name is Jody Morehouse and I am employed as Director of Gas Supply for Avista Utilities (Avista or Company). My business address is 1411 East Mission Avenue, Spokane, Washington. In my current role I am responsible for Avista’s natural gas supply and upstream pipeline transportation resources.

Q. Would you please describe your education and business experience?

A. Yes. I graduated from Montana State University with a Bachelor of Science Degree in Mechanical Engineering and hold a professional engineering license in the State of Washington. I joined the Company in 1989 and have held staff and management positions in our natural gas engineering, natural gas operations, natural gas planning, and natural gas measurement departments. Additionally, I held the position of Manager of Pipeline Integrity and Compliance prior to my current role.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to describe Avista’s natural gas resource planning process, provide an overview of the Jackson Prairie natural gas storage facility, and provide an overview of the Company’s 2016 Natural Gas Integrated Resource Plan. A table of contents for my testimony is as follows:

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1 **Q. Are you sponsoring exhibits in this proceeding?**

2 A. Yes. I am sponsoring Exh. JM-2 which is a copy of the Company's 2016
3 Natural Gas Integrated Resource Plan which was acknowledged by this Commission on
4 February 10, 2017.

5 **Q. Is the Company proposing any changes to the cost of natural gas for its**
6 **retail natural gas customers in this case?**

7 A. No, Avista is not proposing changes in this filing related to the commodity cost
8 of natural gas or upstream pipeline transportation resource costs. Changes in the commodity
9 cost of natural gas and the cost of natural gas pipeline transportation included in customers'
10 rates are addressed in the Company's annual Purchased Gas Cost Adjustment (PGA) filing.
11 The Company expects to file its annual PGA on or before September 15, 2017, with new rates
12 proposed to become effective November 1, 2017.

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14 **II. PLANNING FOR COMMODITY RESOURCE PROCUREMENT**

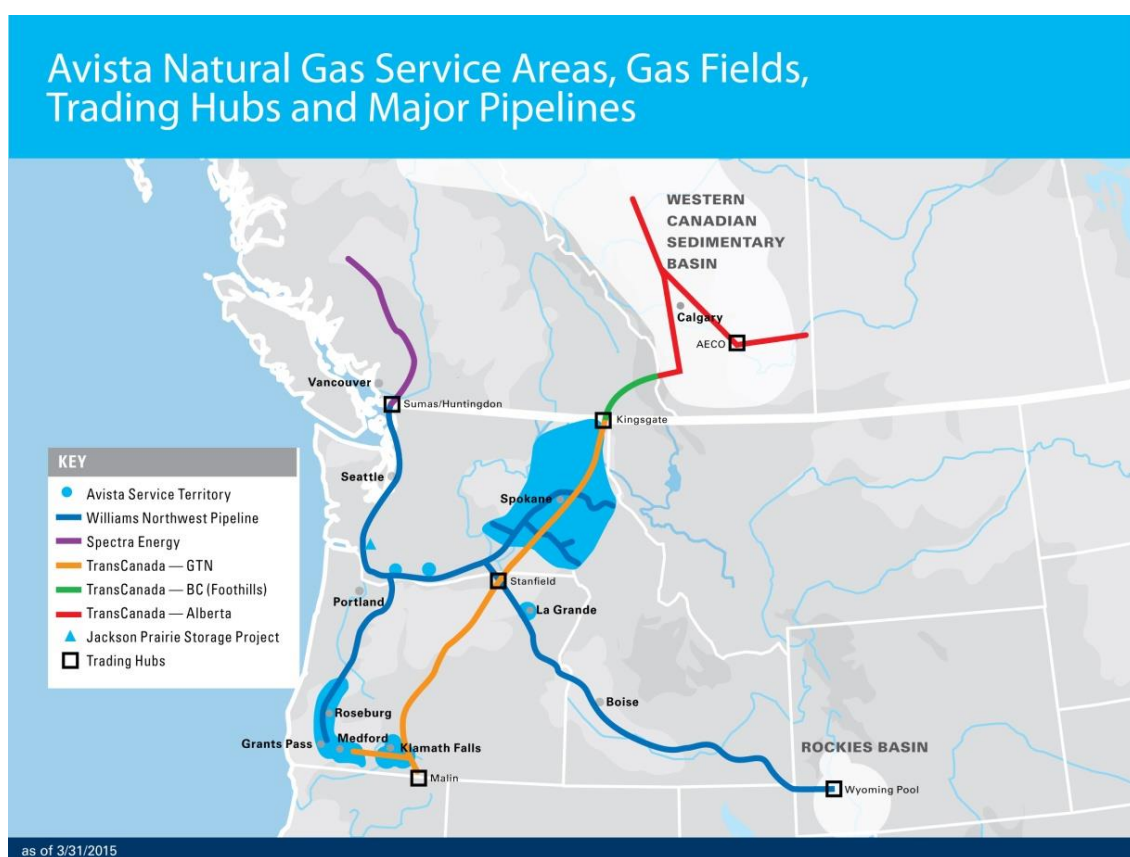
15 **Q. Please describe Avista's natural gas portfolio as it relates to the**
16 **procurement of the natural gas commodity for its local distribution company ("LDC")**
17 **customers?**

18 A. Avista purchases natural gas for its distribution customers in wholesale
19 markets at multiple supply basins in the western United States and western Canada. Purchased
20 natural gas can be transported through six inter-connected pipelines on which Avista holds
21 firm contractual transportation rights. These contracts provide access to both US and
22 Canadian-sourced supply. The US-sourced gas represents approximately 25% of the
23 contractual rights and provides transportation from the Rocky Mountain supply basin. The

1 remaining 75% provides access to Alberta and British Columbia supply basins. This diverse
 2 portfolio of natural gas transportation resources allows the Company to make natural gas
 3 procurement decisions based on the reliability and economics that provide the most benefit to
 4 our customers. Natural gas prices in the Pacific Northwest can be affected by global energy
 5 markets, as well as supply and demand factors in other regions of the United States and
 6 Canada. Price changes, combined with delivery constraints may cause the source mix to vary.

7 Illustration No. 1 below is a map showing our service territory, natural gas trading
 8 hubs, interstate pipelines, and the Jackson Prairie Natural Gas Storage Facility:

9 **Illustration No. 1**



22 Future natural gas prices cannot be accurately predicted. Market conditions, analysis,
 23 and experience shape our overall procurement approach. The Company's goal is to provide

1 reliable supply at competitive prices, with some level of price certainty, in a volatile
2 commodity market. To that end, the Company utilizes a Procurement Plan which includes
3 hedging (on both a short-term and long-term basis), storage utilization, and index purchases.
4 This approach is diversified by transaction time, term, counterparty, and supply basin. The
5 Procurement Plan is disciplined, yet flexible, and layers in fixed-price purchases over time
6 and term to provide a level of price certainty to customers for a portion of the portfolio. A
7 copy of the Company's Natural Gas Procurement Plan is included as an exhibit to Avista's
8 Energy Resources Risk Policy (see Confidential Exh. SJK-3C).

9 The Procurement Plan provides a process that fixes future natural gas prices for a
10 targeted portion of the portfolio through the use of hedge windows. The hedge windows are
11 "open" for a predetermined time period and have upper and lower pricing levels which are
12 determined by the market at the time the window becomes effective. In a rising market, this
13 reduces exposure to extreme price spikes. In a declining market, it can facilitate locking in
14 lower prices. These windows can be executed, or "closed", if certain pricing levels are met,
15 or upon time expiration if no pricing events occur. The Company always maintains some
16 level of discretion and may choose not to execute within a window or to change some aspect
17 of a window given market conditions.

18 The Natural Gas Supply Department continuously monitors the results of the
19 Procurement Plan, evolving market conditions, variation in demand profiles, new supply
20 opportunities, and regulatory conditions. Although various windows and targets are
21 established in the initial design phase of the portfolio, the plan provides flexibility to exercise
22 judgment to revise and/or adjust the Procurement Plan in response to changing conditions.
23 Material changes to the Procurement Plan are communicated to Avista's Senior Management

1 and Commission Staff.

2 **Q. What delivery period does the natural gas Procurement Plan include?**

3 A. The Procurement Plan includes the prompt six months and seasonal strips
4 (November-March or April-October) for up to 36 months from the current month.

5 **Q. Please describe the components of the natural gas Procurement Plan.**

6 A. Each year a comprehensive review of the previous year's plan is performed.

7 The review includes analysis of historical and forecasted market trends, fundamental market
8 analysis, demand forecasting, and transportation, storage and other resource considerations.

9 The plan includes the following components:

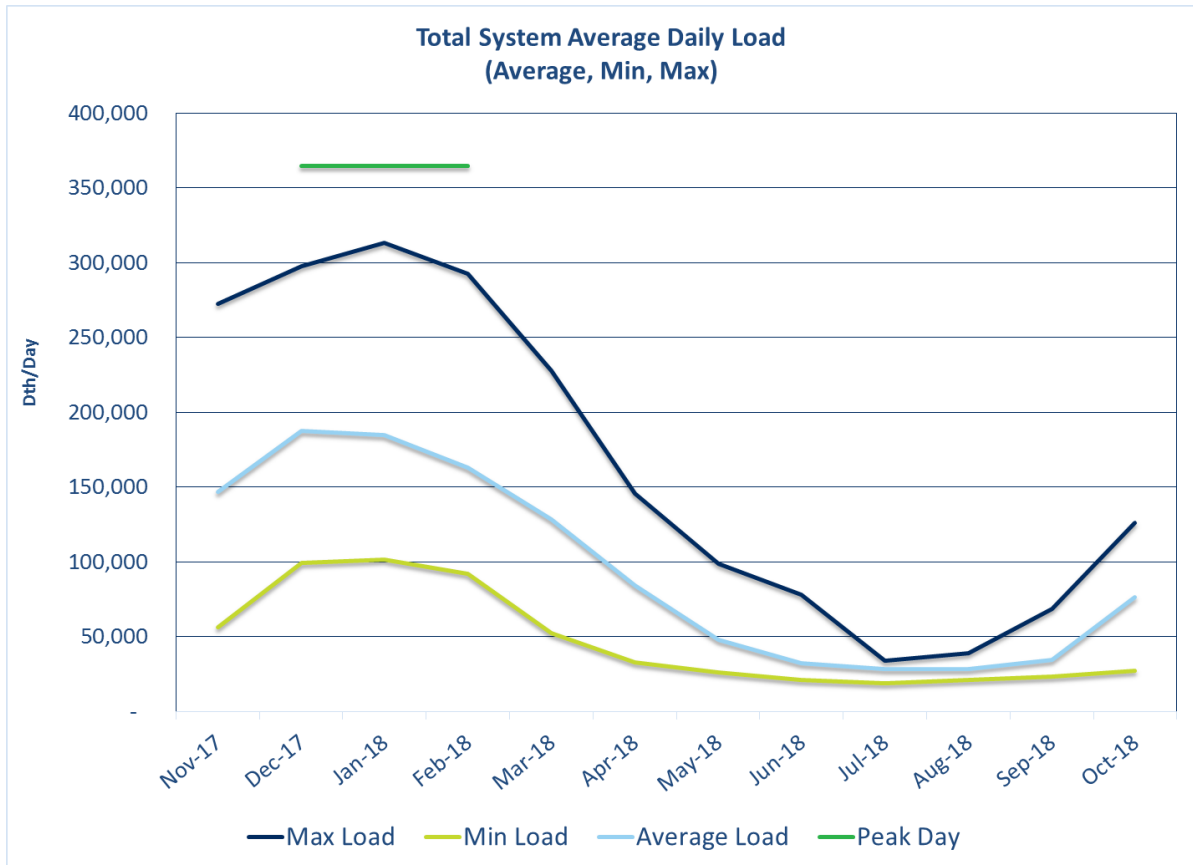
- 10 1. **Previous Year(s) Hedges** – longer-term fixed-price purchases executed as a
11 part of a previous year's Procurement Plan.
12
- 13 2. **Current Period Hedges (Prompt – 36 months)** – the portion of the portfolio
14 addressed through the utilization of hedge windows. In each window, fixed
15 price purchases are made for various prompt year delivery periods (i.e.
16 November to March winter purchase, April to October summer purchase, or
17 individual months). Prior to the execution of each window, market conditions,
18 market knowledge, and other information are considered to determine if
19 execution will occur.
20
- 21 3. **Natural Gas Storage** – utilization of the working gas capacity and
22 deliverability of the Jackson Prairie Natural Gas Storage Facility ("JP"). With
23 JP, Avista is able to provide natural gas during peak load events during the
24 higher demand winter months. Additionally, JP withdrawals can be executed
25 during volatile daily gas price events. For less critical operational purposes,
26 JP withdrawals and injections are frequently used to alleviate load imbalances
27 on pipelines. In 2015, Avista deployed a new natural gas storage software
28 model enabling Avista the potential to optimize 100% of the working gas
29 capacity. The model tracks the historical price spreads of various time frames
30 for JP injections and withdrawals. This historical analysis quantifies the
31 relative benefit of current forward prices and identifies optimal transactions to
32 lock in more economic value than the traditional summer-winter spread.
33
- 34 4. **Index Purchases** – physical index-based natural gas purchases are procured
35 prior to or throughout the delivery month. These purchases are usually
36 associated with daily pricing. The majority of the amount of index purchases

planned is the difference between the forecasted demand less the sum of previously executed hedges. Index purchases are also made as part of Avista’s natural gas storage management process throughout the year. This process is explained in greater detail in Section III.

Q. Please describe how the Procurement Plan manages volatility.

A. The Procurement Plan focuses on managing the costs associated with serving varying retail load with supply from a wholesale market with price volatility. In order to manage these seasonal, monthly and daily volume swings, Avista shapes the components of the Procurement Plan by month (i.e. more natural gas is hedged for the winter months than for the summer). Illustration No. 2 below includes a chart that shows the demand volatility:

Illustration No. 2



1 Price volatility can also vary widely by season, month and day. Illustration No. 3,
 2 below, includes a chart depicting the natural gas price volatility over time:

3 **Illustration No. 3**



17 Avista cannot predict with accuracy what natural gas prices may be. Our experience
 18 and intelligence related to market fundamentals guide our procurement decisions. By layering
 19 in fixed price purchases over time, setting upper and lower pricing levels on the hedge
 20 windows, and actively managing storage resources, Avista is able to meet our goal of
 21 providing a meaningful measure of price stability and certainty, and competitive prices for
 22 our customers.

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III. JACKSON PRAIRIE

Q. Please describe Avista’s involvement with the Jackson Prairie Natural Gas Storage Facility.

A. Avista is one of the three original developers of the underground storage facility at JP, which is located near Chehalis, Washington. Although there have been corporate changes due to mergers, acquisitions and name changes, Avista, Puget Sound Energy (PSE) and Williams Northwest Pipeline each hold a one-third share (equal, undivided interest) of this underground gas storage facility through a joint ownership agreement. Puget Sound Energy is the operator of the facility.

Q. What type of storage facility is JP?

A. JP is an underground aquifer storage facility. Storage and the associated withdrawal and injection capability has been created by a combination of wells, gathering pipelines, compression and dehydration equipment, and the removal and disposal of aquifer water.

Q. Please describe the present level of storage that Avista owns at JP.

A. At the present time, Avista Utilities owns a total of 8,528,013 dekatherms (Dth) of working gas capacity. This capacity comes with a withdrawal capability (deliverability) of 398,667 Dth per day. Jurisdictionally this amount is broken down as follows:

Jurisdiction	Working Capacity (Dth/Day)	Withdrawal Capacity (Dth/Day)
Washington/Idaho	7,704,676	346,667
Oregon	823,337	52,000
Total Owned	8,528,013	398,667

Q. What are the benefits of storage to Avista’s customers?

A. Access to regionally located storage provides several benefits to Avista’s

1 customers. It enables the Company to capture price spreads between time periods, improve
2 reliability and flexibility of supply, mitigates peak demand price spikes, and numerous other
3 economic benefits.

4 Avista utilizes a natural gas storage software model in order to capture seasonal price
5 spreads for the benefit of natural gas customers. The model is governed by a storage
6 management program that sets boundaries on injections and withdrawals as well as tracks real
7 time market data to guide the purchase and sale of natural gas storage transactions. The
8 program enforces storage constraints and requirements such as the storage fill schedule, peak
9 day load requirements, transportation capacity limits, and deliverability constraints.

10 The information within the model provides the Company's natural gas buyers the
11 ability to identify additional opportunities to purchase lower cost natural gas in the immediate
12 term for a sale in a future time period. For each storage purchase transaction, a corresponding
13 forward sale is also made, locking in the benefit for our customers. Additional purchases and
14 sales are made continuously as market conditions move into favorable conditions for each
15 transaction. The effect of storage volumes will be that they are more frequently cycled in and
16 out to take advantage of market conditions. It is important to note that JP will still be utilized
17 to meet peak day needs, as well as to help mitigate daily price volatility. The benefits
18 associated with locking in time-period spreads flow through to customers in the Company's
19 Purchase Gas Adjustment (PGA) annual filings.

1 **IV. 2016 NATURAL GAS INTEGRATED RESOURCE PLAN**

2 **Q. Please provide an overview of the Company's development of its 2016**
3 **Natural Gas Integrated Resource Plan.**

4 A. The 2016 Integrated Resource Plan ("IRP") was filed with the Commission on
5 August 31, 2016. The IRP includes forecasts of natural gas demand and any supply-side
6 transportation resources and demand-side measures needed for the coming 20-years, which
7 will help Avista continue to reliably provide natural gas to our customers. A copy of the
8 Company's 2016 Natural Gas Integrated Resource Plan is included as Exh. JM-2.

9 **Q. What are the summary highlights from the 2016 IRP?**

10 A. Highlights from the 2016 IRP are as follows:

- 11 • The Company has sufficient natural gas transportation resources well into the
12 future with resource needs not occurring during the 20-year planning horizon
13 in Washington, Idaho, or Oregon;
- 14 • Natural Gas commodity prices continue to be relatively stable due to robust
15 North American supplies led by shale gas development; and
- 16 • As forecasted demand is relatively flat, the Company will monitor actual
17 demand for signs of increased growth which could accelerate resource needs.
18 •
19 •

20 **Q. Has the Company's 2016 Natural Gas IRP been acknowledged by this**
21 **Commission?**

22 A. Yes. The Company's 2016 IRP was acknowledged by the Commission on
23 February 10, 2017.

24 **Q. When will the Company file its next natural gas IRP?**

25 A. The Company will file its next natural gas IRP on or before August 31, 2018.
26 A courtesy work plan will be filed in August 2017 detailing Avista's IRP planning process as
27 well as tentative dates and content for meetings with the Technical Advisory Group (TAC).

1 TAC meetings will begin in the first quarter of 2018.

2 **Q. Does this complete your pre-filed direct testimony?**

3 A. Yes, it does.