Exh. JM-3

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BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET NO. UG-19_____

EXH. JM-3

JODY MOREHOUSE

REPRESENTING AVISTA CORPORATION

AVISTA UTILITIES

2018 Washington Natural Gas Hedge Report

Avista Utilities
Natural Gas Procurement Plan and Hedging Framework

I. Background

On October 30, 2013, the Commission opened a Staff Investigation in Docket No. UG-132019 regarding policy issues related to the Washington natural gas utilities' hedging practices and transaction reporting. Staff and Public Counsel co-sponsored a White Paper on natural gas hedging practices written by Michael Gettings of RiskCentrix, LLC. The White Paper provided examples and detailed instruction concerning hedge practices and how to incorporate risk-responsive hedging methods into the overall portfolio. Avista provided comments in this docket and participated in several workshops. In UG-132019, the Commission distributed a "Policy and Interpretive Statement on Local Distribution Companies' Natural Gas Hedging Practices" ("Policy Statement"). This Policy Statement outlines the process each LDC should follow in order to incorporate such risk-responsive hedges into their individual portfolios. In summary, the Policy Statement provided the following guidance:

- We therefore direct each company to submit, as part of the 2017 PGA filing, a preliminary hedging plan that outlines the company's intended path to incorporate risk-responsive hedging strategies for the upcoming year. This plan should articulate the company's hedging objectives and communicate its approach to address the basic elements of risk-responsive hedging: objectives and goals, exposure quantification, strategic initiatives, and oversight and control.

- When making their 2018 PGAs filings, we require the Companies to submit annual comprehensive hedging plans that demonstrate the integration of risk responsive strategies into the Companies' overall hedging framework. The Commission expects full implementation will take no longer than 30 months.

- As part of the comprehensive annual hedging plan, the Companies should incorporate a retrospective hedging report. This report should provide a narrative of the utility's perspective on the execution of its prior year hedging strategy. Additionally, the report should include a discussion providing insight about whether the metrics and tolerances identified in the previous year's plan continue to be appropriate and how the Company's retrospective evaluation has informed modifications to the forthcoming year's hedging plan.

The information required by the Commission is contained within this report as follows:

II. Objectives and Goals

Avista's mission is to provide a diversified portfolio of reliable supply with a level of price certainty in volatile markets.

No company can accurately predict future natural gas prices, however, market conditions and experience help shape Avista's overall approach to natural gas procurement. Our Natural Gas Procurement Plan (Plan) seeks to acquire natural gas supplies while reducing exposure to short-term price and load volatility. The procurement strategy includes hedging, storage utilization and index purchases. The Plan is disciplined, yet flexible, allowing for modifications due to changing market conditions, demand, resource availability, or other opportunities. Should economic or other factors warrant, any material changes to the Plan are communicated to senior management and Staff.

The Plan is diversified through time, location and counterparty. Hedge transactions may be executed for a period of one-month through thirty-six months prior to delivery period. Due to Avista's geographic location, transactions may be executed at different supply basins in order reduce our overall portfolio risk. Finally, transactions are made with multiple counterparties in accordance with Risk Management credit terms.

III. Oversight and Control

The Company's Plan is the framework under which natural gas supply is acquired in order to reach our goal of providing reliable natural gas supply for customers, while at the same time managing the volatility and cost of that supply.

The Plan is governed by the Avista Utilities Energy Resources Risk Policy ("Risk Policy") which addresses certain risks inherent in supplying energy and managing energy resources. It also outlines certain important roles, responsibilities and processes to

manage and control those risks. The Rick Policy governs Avista Utilities' transactions to purchase sell natural gas in the wholesale energy market, financial contracts and derivatives (relating to natural gas and fuel), and agreements for use of Avista Utilities' natural gas storage and transportation rights.

The Risk Management Committee, which includes corporate officers and senior-level management, is responsible for oversight of the Risk Policy and associated Natural Gas Plan (which includes hedging). The Committee establishes the Risk Policy and monitors compliance through regular meetings including, but not limited to, hedge activity, discussions on market conditions, and other natural gas-related matters.

The Risk Policy addresses several variables which affect natural gas supply and customer load. It is the intent of the Risk Policy to recognize and actively manage the interaction and dynamics among these variables by establishing a process for load estimation, resource procurement (including natural gas storage), and management of the expected Short Term and Immediate Term gas requirements. The Policy spells out the following processes:

- Natural Gas Load and Obligations estimation, Natural Gas Resource estimation, and management of associated surplus or deficit.

- Responsibility and approvals for transactions and operating decisions related to natural gas procurement, wholesale natural gas purchases and sales, scheduling natural gas resources, and providing good stewardship of natural gas resources.

- Reporting. All changes that affect the Short Term natural gas position will be reflected each business day in a natural gas position report. This includes status of estimated load and obligations, and estimated system open positions (net surplus or deficit) for each month in upcoming 36 months. The position report also includes the current status of the Plan including percent hedged, current open transaction windows, daily prices, and estimated current market value of overall natural gas positions.

In addition to the Risk Management Committee, the Company also has an internal Strategic Oversight Group (SOG) comprised of natural gas-related stakeholders who provide guidance and input on decisions regarding the Plan. The SOG serves as a reference/sounding board for strategic decisions made by the Gas Supply department regarding procurement of natural gas for the Local Distribution Company's (LDC). SOG members include representatives from the Gas Supply, Resource Accounting, Regulatory Affairs, Credit Management, Power Resources, and Risk Management departments. Ultimately, the Gas Supply department is responsible for the management of the overall Plan and associated hedge transactions, however, the SOG provides input and advice.

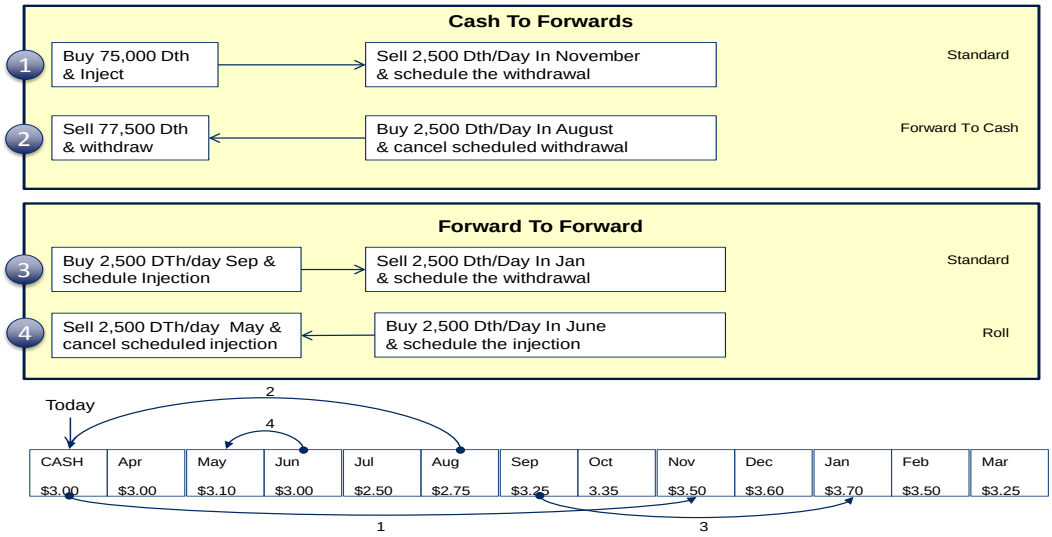
IV. Strategic Optimization

As previously noted, the goal of the Procurement Plan is to provide reliable supply at competitive prices, with some level of price stability, in a volatile commodity market. Through the use of a Dynamic Window Hedge mechanism (described below), the Company is able to mitigate natural gas price volatility for a portion of the portfolio. The Natural Gas Supply Department continuously monitors the results of the Plan, evolving market conditions, variation in demand profiles, new supply opportunities and regulatory conditions.

In addition to the Dynamic Hedge Window mechanism, the Company also has mechanisms in place which allow us to optimize the value of our existing pipeline and storage assets in order to reduce costs for customers until such resources are required to meet demand. Should there be transportation capacity that is not required to serve load, we may be able to optimize this capacity by purchasing natural gas, transporting it, and selling it into a higher priced market. Avista may also be able to release a portion of this unutilized firm transportation capacity to third parties, also reducing customer's firm transportation expense.

In addition to optimizing our transportation capacity, we also have a Storage Model which allows us to optimize our Jackson Prairie Storage Facility for the benefit of our customers. The model is governed by a storage management program that sets boundaries on injections and withdrawals as well as tracks real time market data to guide the purchase and sale of natural gas storage transactions with favorable spreads. Through this model, the Company is able to purchase natural gas in one period and sell into a lower priced market, effectively locking in a benefit for our customers. Illustration No. 1 below is an example of storage optimization:

Illustration No. 1



The program enforces storage constraints and requirements such as the storage fill schedule, peak day load requirements, transportation capacity limits, and deliverability

constraints.

V. Procurement Plan Components

The Plan is not intended to be a static document with a "set-it-and-forget it" program. It is formally reviewed no less than annually, with existing results discussed monthly with the SOG and Risk Management Committee. When a new methods is considered for incorporation, such as risk responsive hedging, it is developed, tested and reviewed extensively prior to implementation. The goal is to utilize the best methods available to provide reliable supply at competitive prices, with some level of price stability, in a volatile commodity market.

The basis for the Procurement Plan is the development of the load forecast. This load forecast is developed for each individual area and class of customer by day. The key inputs for the load forecast model are the forecasted number of customers, a set of demand coefficients (Dth consumed per customer per heating degree day) and historical heating degree-days.

For purposes of the Procurement Plan, the daily load forecasts are consolidated into average daily volumes for each month for customers in Oregon and for the combined Washington and Idaho jurisdictions. These estimates are adjusted to compensate for pipeline fuel and estimated daily requirements for Interruptible Customers to derive "Average Load".

In order to serve load, and optimize its resources for the benefit of customers, the Company secures/purchases natural gas supply through the transactions and procedures described below:

1. **Fixed-Price Purchases:** To provide a level of price certainty in volatile natural gas commodity markets, Gas Supply will hedge some of its load with fixed-price transactions, either with fixed-price physical purchases or with financial swaps or financial futures which will be matched to purchases of index-priced physical products prior to the products settlement. These hedges will be structured to diversify procurement in terms of timing of the transaction and duration of committed supplies.

   The fixed-price purchases portion of the Plan, or hedges, are comprised of the following two components (described in later sections of this paper):

   - Dynamic Window Hedges (DWH).
   - Risk Responsive Hedge Tool (RRHT).

2. **Storage Injections and Withdrawals:** Avista owns and contracts for storage services at Jackson Prairie. Avista has a contractual operational incentive to have its share of Jackson Prairie full by September 30 of each year. Gas Supply retains flexibility in terms of the timing and volume of the injection and withdrawal schedules.

Actual storage injections and withdrawals will be executed to optimize the economic value of storage within the reliability constraints of the project and the ability to serve retail customers' peak day needs.

3. **Index-Based Physical Purchases:** Gas Supply generally purchases physical index-based natural gas for up to the difference between the average daily load forecast for each month and the sum of the fixed-price purchases and projected storage withdrawals. Gas Supply retains flexibility to modify the components of its purchases in a month due to operational or other reasons. The selected indices may be first-of-month indices or daily-based indices.

4. **Daily Adjustments Due to Load Variability:** To the extent actual loads differ from the average daily load forecast for the month, the difference will be managed through a combination of: a) Daily purchases or sales of natural gas, or b) withdrawals from, or injections into, natural gas storage facilities.

5. **Use of Derivative Contracts:** Subject to limitations in the Energy Resources Risk Policy, Gas Supply may enter into derivative-based contracts intended to reduce or manage exposure to rising prices or fluctuating loads.

6. **Resource Optimization:** Gas Supply may enter into transactions that create value for customers using unutilized supply, transportation or storage assets. Utilization of these resources reduces fixed costs and lowers overall costs to customers.

As described above, The Company secures the fixed-priced portion of our portfolio through Dynamic Window Hedges (see section VI Dynamic Window Hedges) and beginning in November 2018 our portfolio will also include a Risk Responsive Hedge Tool (see section VII Risk Responsive Hedge tool).

VI. Dynamic Window Hedges (DWH)

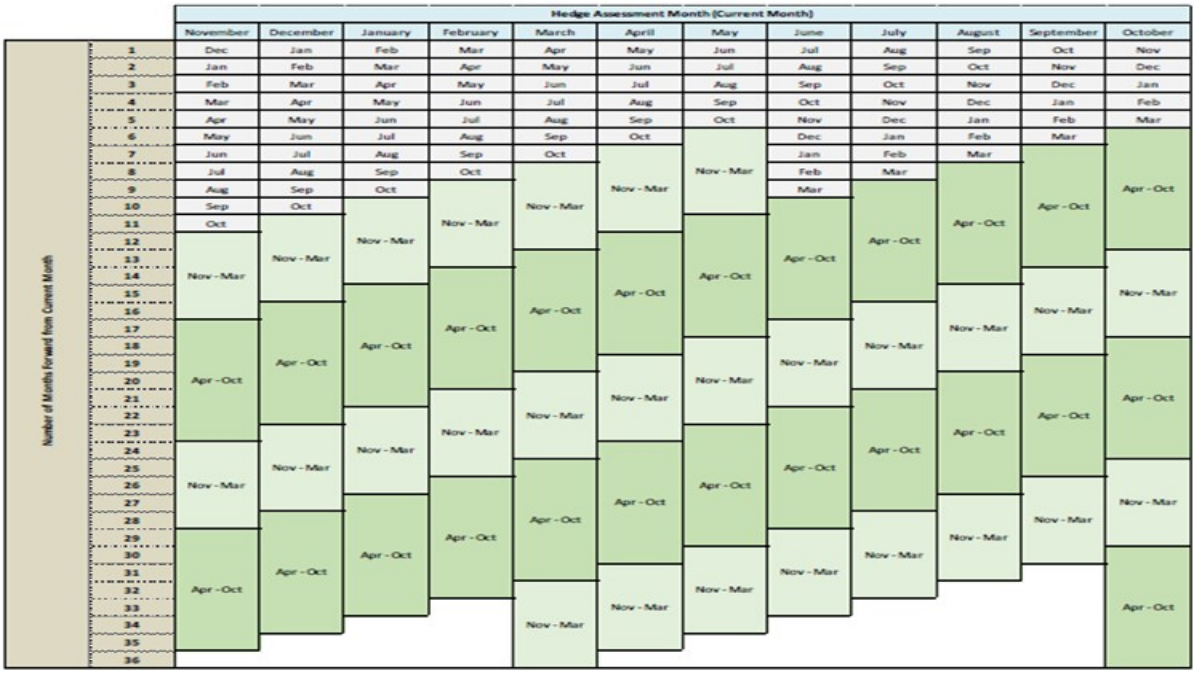
The DWH portion of the plan secures a pre-determined, minimum hedge portion for LDC load with fixed priced purchases. These transaction are diversified in terms of time, location and delivery period. The target delivery periods, development, procures, and execution are described below. Dynamic Window Hedging reduces the cost risk and increases the loss risk.[1]

[1] Loss risk is the potential to pay more than the daily gas price with a forward hedge. Cost risk is the potential for daily prices to rise above the hedge price.

Dynamic Window Hedge (DWH) - Target Delivery Periods

The target delivery periods for the DWH portion of the Plan is for a period of 36 months. Illustration No. 2 depicts in tabular format the Hedge Target Delivery Periods:

Illustration No. 2:



Beginning with the current month and at the top of each column (the Hedge Assessment Month of the columns in the Table), a list of potential hedges would look to the sequential future periods shown in the column below that month. The first five to eleven months in each column are addressed in monthly blocks, depending on the time of year and the rolling nature of the specified Gas Supply target delivery periods. Following these monthly blocks, a minimum of four seasonal blocks are addressed in consecutive November – March and April - October blocks. Additional November – March or April – October blocks are added so that in any given delivery period, there are between 30 and 36 months to be monitored and eligible for hedge. The compressed blocks break into individual month blocks as the hedge period nears the current month. By the time the delivery period is reached, each individual month will have been available for hedging for a full 36 months prior to delivery.

DWH Development

A DWH is defined by its set-price (SP), an upper control limit (UCL), a lower control limit (LCL) and an expiration date. The SP is the closing price of the day prior to the window opening. The UCL and LCL are developed using quantitative mathematics to define boundaries in relation to the SP. Expiration dates are determined based on the remaining volumes to be hedged and remaining time to expiration. Each DWH's SP is based upon

the closing price, of the selected supply basin for the delivery period. The supply basin for each hedge window will be selected from available term markets, based on whichever market has the highest volatility.

The DWH has a price band defined by its UCL and LCL above and below the SP, respectively. A statistically based method is used to create the UCL and the LCL. The methodology looks at historical prices over the last 60 days. A 90% confidence level of the price changes during the last 60 days is used to set the UCL and the LCL. The UCL and LCL will adjust ("Ratchet") daily depending on the movement in current pricing. When a window is closed the next window will be opened (if a window remains to be processed). The next window's SP and price band will be determined based on the current day's closing price but the new window will retain its original expiration date. Illustration No. 2 depicts the Window Mechanism set up:

Illustration No. 3

	August 23, 2018												
	Physical Positions			Dynamic Window Hedging									
	Load Estimate (DTh/Day)	Completed Hedges (DTh/Day)	Net Position (DTh/Day)	Window Hedging Threshold	Load Hedged (%)	Hedges Left	Set Date	Expire Date	Low Price Trigger ($/DTh)	Today's Price ($/DTh)	High Price Trigger ($/DTh)	Hedge Required (DTh/Day)	Preferred Basin
September-18	-33,543	15,000	-18,543	46%	45%	0							
October-18	-74,170	35,000	-39,170	46%	47%	0							
November-18	-146,612	65,000	-81,612	46%	44%	1	08/01/18	10/01/18	1.32	1.51	1.63		AECO
December-18	-188,306	75,000	-113,306	46%	40%	5	08/09/18	08/26/18	1.56	1.69	1.80		AECO
January-19	-185,510	72,500	-113,010	46%	39%	5	08/09/18	09/01/18	1.65	1.79	1.90		AECO
February-19	-163,647	67,500	-96,147	46%	41%	3	08/06/18	09/24/18	1.59	1.79	1.95		AECO
March-19	-129,735	62,500	-67,235	46%	48%	0							
Apr19-Oct19	-47,220	10,000	-37,220	29%	21%	1	12/08/17	03/01/19	0.86	1.10	1.61		AECO
Nov19-Mar20	-163,902	50,000	-113,902	37%	31%	4	08/21/18	12/01/18	1.45	1.60	1.73		AECO
Apr20-Oct20	-47,653	5,000	-42,653	29%	10%	3	01/04/18	09/23/18	0.96	1.13	1.39		AECO
Nov20-Mar21	-166,667	15,000	-151,667	37%	9%	19	07/12/18	08/24/18	1.39	1.48	1.52		AECO

DWH Procedures

Hedge windows remain "open" as long as the previous day's forward delivery period price remains between the UCL and the LCL, and the window has not reached its time expiration. The selected basin closing price will be the determining benchmark of the forward delivery period price. Hedge window status is examined each business day. If the hedge window's current rate moved outside the UCL or LCL, a hedge transaction is triggered, subject to execution provisions described later in this report. If a SP does not move outside the UCL or LCL prior to time expiration, then the window's hedge transaction is executed on the expiration date.

DWH procedures also include a price band responsiveness calculation. The purpose of the responsive calculation is to ratchet either the UCL or the LCL toward the SP. This calculation will be performed daily for each open window based on the market closing

price for a hedge delivery period. If the closing price is above the SP, the LCL is increased by the amount the closing price is above the SP. If the closing price is below the SP, the UCL is decreased by the amount the closing price is below the SP. Tightening of the LCL and UCL values is limited to the maximum extent that closing prices have risen above the SP (for LCL) or below the SP (for UCL) over the life of the open hedge window. The adjusted LCL and UCL values are not moved away from the SP regardless of price volatility. Illustration No. 3 shows a hedge which was executed for the November 2020-March 2021 time period and the associated limits.

Illustration No. 4

DWH Execution

If a hedge window time expires, Gas Supply will transact on or within three business days of expiration.

When a planned transaction is price triggered prior to time expiration, Gas Supply will solicit at least one market quote, or document the relevant bids and offers from ICE on the following business day to verify the published settlement price. If the market quote indicates that the actual current market price is outside the UCL and LCL, then Gas Supply will transact on or within three business days of the trigger. If a market quote indicates that the actual current market price is still within the UCL or the LCL, then Gas Supply may defer a transaction and the window will remain open.

Because the Procurement Plan allows discretion for ultimate decision making, management may determine that it is appropriate to take other action, partial action, or

no action, with respect to transaction execution and will document accordingly, as compared to the transaction trigger guidance from the DWH procedures.

In instances where there is significant intra-day price movement, Gas Supply may deem it appropriate to close a hedge window on that day to avoid further price increases.

VII. Risk Responsive Hedging Tool (RRHT)

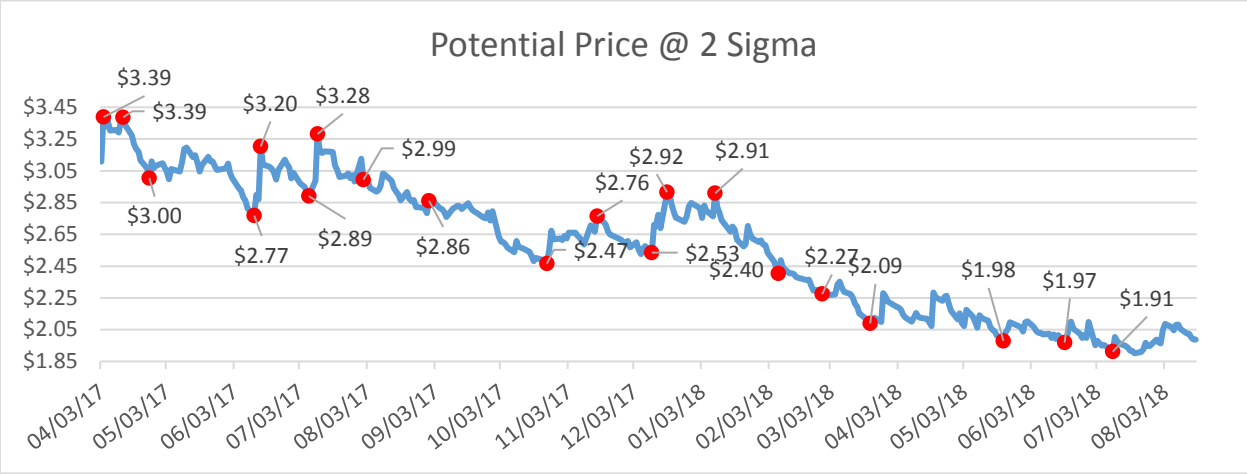
Beginning with the 2018 natural gas year, Gas Supply will utilize the Risk Responsive Hedging Tool (previously ran only in the test environment), in addition to the Dynamic Window Hedges discussed above. This will help manage the Value at Risk (VaR) of Avista's LDC natural gas portfolio's open position on a daily basis. The forward gas prices are the basis for the VaR analysis. The analysis utilizes a confidence level and historic volatility to calculate a portfolio VaR, and combines it with the current mark-to-market portfolio price to develop a price risk metric that is compared to a predetermined threshold value (Operative Boundary). If the price metric exceeds the Operative Boundary, then one or more hedges will be executed to bring the price metric back within the Operative Boundary. In any case, hedge volumes should not exceed the Maximum Hedge Ratio. Upon trigger, Gas Supply will begin to transact until the price metric is back within the Operative Boundary.

The Dynamic Window Hedging will continue to systematically hedge to a certain minimum hedge level through the use of time limits and UCL/LCL, RRHT will monitor the market and call for additional hedging if pre-determined risk tolerance limits were triggered.

The RRHT includes all utility purchase and sales transactions, estimated customer load, storage injections and withdrawals, to derive open positions (by basin) that are marked to forward market prices. These monthly financial positions, along with market volatility, are then used to calculate the Value at Risk (VaR) by basin, which in turn is used to evaluate defensive hedging. Illustration No. 6 depicts the RRHT along with the maximum portfolio hedge percentage, minimum portfolio hedge percentage and the price at starting price of the operative boundary or the current price at two sigma.

Over the past year, Avista ran the RRHT in a parallel test environment and closely monitored it for performance. Each day a "Cost @ 2 Sigma $/Dth" metric, as shown in Illustration No. 5, was recorded for the amount of portfolio risk and cost Avista could expect with a 98% level of certainty based on the current market exposure in the portfolio.

Illustration No. 5



At no time did the RRHT cross over the operative boundary of $3.50 per DTh.

A review of the previous year's test RRHT, along with analysis of other factors such as market price and volatility information (to name a few) was completed as part of the annual Procurement Plan process. Section VIII Exposure Quantification includes a detailed description of the volatility factors reviewed as part of this process and provides insight into the changes for the upcoming 2018-2019 Procurement Plan.

This review resulted in the following changes to the Procurement Plan:

1. LDC Load Hedge Percent: The Hedge Percent for LDC will be reduced from 46% to 40% due to the implementation of the RRHT.

2. Operative Boundary: The beginning operative boundary is set for $2.76 per Dth, based on of a one in ten scenario of prices exceeding this cost. The ending value of the operative boundary is $3.53 per DTh was developed based off of a one in one hundred scenario or 99% of all statistically measured potential results as falling within this boundary. The initial boundary is equal to a one in ten year scenario utilizing actual prices at 2 Sigma since the inception of the plan on March 3, 2017 (see Illustration No. 5 above).

3. System Hedge Percent: If this operative boundary exceeded, Avista would begin curing the position to fall within the minimum boundary of 30% following the upward slope with an increasing maximum value of 60% of the total portfolio cost.

Illustration No. 6 depicts the result of these changes in the Risk Responsive Hedge Plan.

Illustration No. 6

Illustration No. 7 provides a quick-view of the changes between Natural Gas Years:

Illustration No. 7

	2017-2018	2018-2019
Hedge percent of firm LDC average load - DWH	46%	40%
Operative Boundary - RRHT	$3.50 up to $4.50 (program in development and for monitoring only)	$2.76 up to $3.53
Percent of Portfolio cost to hedge - RRHT	40% up to 70% (program in development and for monitoring only)	30% up to 60%

In summary, the Company's Procurement Plan will include both Dynamic Window Hedges and Risk Responsive Hedges beginning with the upcoming 2018-2019 natural gas year. The RRHT will be implemented based on the recommendation of the SOG and preliminary approval from the Risk Management Committee. Given that Avista is a multi-jurisdictional Utility, prior to full implementation, meetings will be held with Commission Staff in both Oregon and Idaho to fully explain the RRHT and answer any questions they may have. After these meetings have been concluded, the Risk Management Committee will approve the plan and it will go into effect in November 2018.

VIII. Exposure Quantification

Independent Evaluation

Because Avista developed this application in-house it was determined to be prudent to include a technical review from an outside entity with a high degree of knowledge and credibility within the risk management field. To obtain this audit of the program algorithms and assumptions Willdan Corp. was retained. The opinion states "Avista is following best practice, hedging in accordance with industry norms and actively improving its methods in response to Commission recommendations." Exhibit A includes the independent evaluation of Avista's risk management and hedging program.

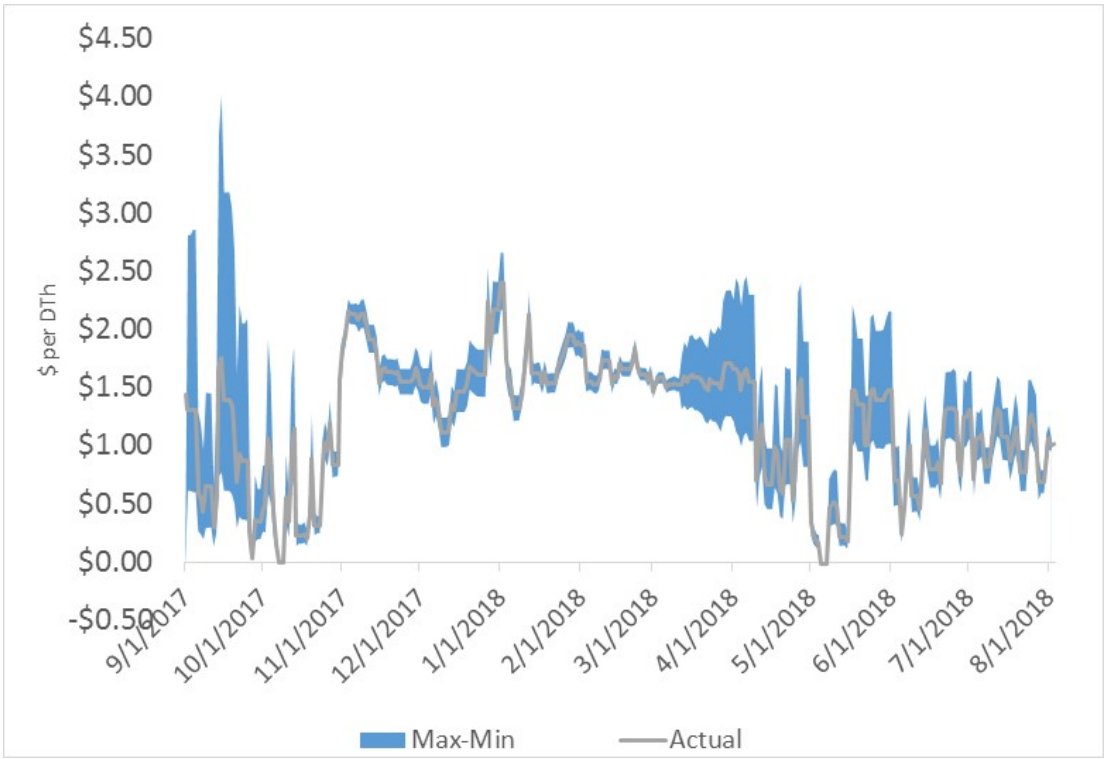
Exposure Reports

Positions are reported on a daily basis for a forward time horizon of approximately 2 years. Overall financial exposure is quantified volumetrically and in dollars, calculated by valuing the volumetric positions using the associated forward prices. In addition, VaR is reported for the entire portfolio of positions which helps to measure the at risk dollar amount above and beyond the current financial exposure. VaR is also used to create the metric used to drive the Risk Responsive hedging.

Volatility

The cash market has been extremely volatile over the past twelve months at AECO as depicted in Illustration No. 7.

Illustration No. 7



A tabular view of this price potential showing the minimum and maximum price based off of volatility can be seen in Illustration No. 8.

Illustration No. 8

Month	Average	Max	Min
January	$ 1.71	$ 2.67	$ 1.21
February	$ 1.66	$ 1.99	$ 1.45
March	$ 1.57	$ 2.34	$ 1.12
April	$ 1.15	$ 2.46	$ 0.33
May	$ 0.80	$ 2.21	$ (0.01)
June	$ 0.90	$ 2.16	$ 0.17
July	$ 1.01	$ 1.65	$ 0.54
August	$ 0.89	$ 2.11	$ 0.29
September	$ 0.89	$ 4.03	$ 0.01
October	$ 0.58	$ 1.91	$ (0.00)
November	$ 1.80	$ 2.26	$ 1.43
December	$ 1.56	$ 2.54	$ 0.99

This represents daily volatility scaled to a minimum or maximum potential based on this volatility. Unplanned maintenance caused impediments to delivery of natural gas out of collection fields in the production regions. The standard deviation of daily pricing over this time horizon was $0.53. Considering the high price potential (Max) was close to $4.03 with the average price at $1.54, the daily market exhibited a high degree of pricing uncertainty. Over this timeframe, pricing was the most volatile in the summer months as opposed to the high volumetrically driven demand season of winter, where on average volatility was lower.

During this timeframe, Avista also purchased future hedges in the months of December 2017 going out through March 2021 in 2,500 Dth per day volumes. Illustration No. 8 displays the 60 day volatility, both monthly and daily over the past year. This volatility is pronounced in October 2017 and May 2018 from unplanned maintenance on the interstate pipeline system, constraining supply and the firm ability to get supply out of the basin.

The market has continued to remain volatile at the basins Avista has firm transportation to procure natural gas supply. Over the past decade, the price of natural gas has declined due to an increased level of total available and extractable supply. This has reduced the cost risks associated with financial positions and decreased the amount of hedging loss potential as the market is currently at a low level relative to historic pricing. The upside

price risk is much higher at current market levels due to the depressed price of natural gas. The loss risk is lower as after a certain point, producers will not continue providing natural gas supply with a negative return.

Volumetric risk is higher in the winter months when demand is at its peak for residential and commercial loads. In consideration of both summer and winter season risks Avista will maintain an annual percent of load as it is automatically shaped by the seasonal demand volumes. Due to the high levels of volatility found in the market, Avista continues to view hedging as a type of risk insurance from upside prices. The RRHT will add additional protection in an extremely volatile market.

Illustration No. 8

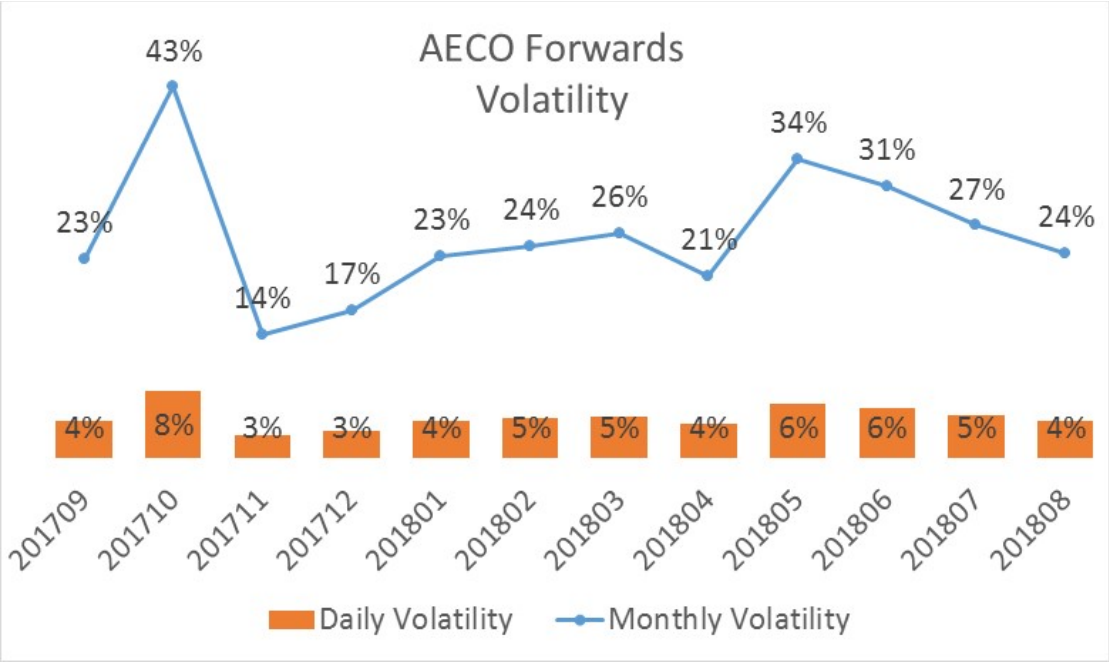
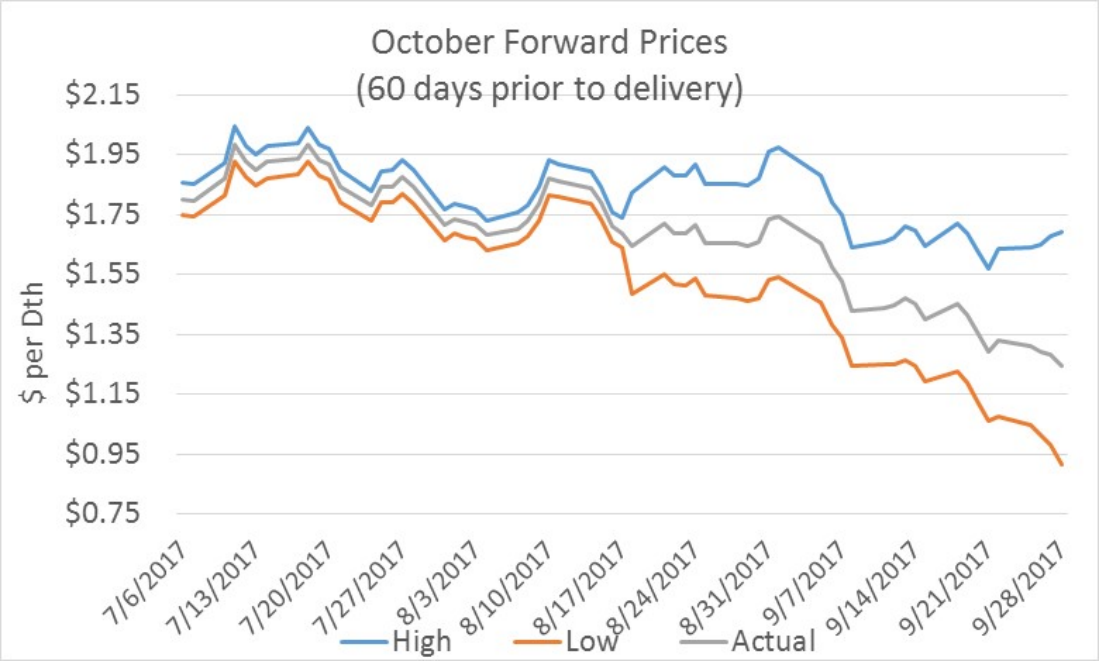


Illustration No. 9 shows the 60 day volatility of the October 2018 AECO forward price and its potential to move higher or lower prior to the delivery month based off of volatility.

Illustration No. 9



Executed Hedges for the 2017-2018 PGA Year

As previously described, Avista's portfolio of hedges includes those completed for firm LDC customers based on estimated average load, storage optimization, and transportation optimization on a rolling-36 month basis. The results of those hedges which settled in the period November 2017 through July 2018 is summarized in Illustration No. 10 below:

Illustration No. 10*

Number of Hedges	Total Volume	Average Hedge Price ($/per Dth)	Average Daily Cash Price	Difference per Dth $	Total Difference
23	1,745,000	$1.23	$1.20	$0.027	$47,375

*Detail by individual hedge is attached as "Exhibit B"

Avista agrees that hedging, in general, will lead to circumstances where some purchases are "in the money" and some purchases are "out of the money", but that overall hedging is a type of risk insurance against market volatility. This mark-to-market look is for the twenty-three hedges purchased for LDC firm load since the hedges for storage and transportation optimization will always be a net positive benefit for customers.

Next Steps

The next steps in this process are as follows:

- Initial approval was received by Avista's Risk Management Committee for the implementation of the RRHT on August 20th, 2018. Additional information will be provided to the RMC based on conversations with each commission for a final approval to implement the RRHT

- Present procurement plan and RRHT to commissions in Idaho, Oregon and Washington to obtain feedback prior to the implementation of the RRHT

- Incorporate the RRHT (to some extent) no later than 30 months from the filing of the 2017 PGA filing as required per the Policy Statement in Docket No. UE-132019

- Provide a Comprehensive Hedging Plan, including retrospective report, with the 2019 Washington Natural Gas PGA filing

- Continue to carefully monitor the market to watch for fundamental changes in prices or conditions along with the performance of the Dynamic Window Hedging and Risk Responsive Hedging Tool.

AVISTA UTILITIES

2018 Washington Natural Gas Hedge Report

Exhibit A – Independent Evaluator Report

WILLDAN

Independent Evaluation of the Avista Risk Management and Hedging Program

By Kenneth Skinner and Eric Woychik, Willdan Corp
August 29, 2018

Table of Contents

Introduction

Kenneth Skinner, Ph.D. and Dr. Eric Woychik of Willdan Corporation (Consultants) were engaged by Avista Corporation (Company) to review specific company policies and algorithms, to understand the execution of hedges, hedge policy and the outcomes produced, in response to current regulatory rulings and guidance. Specifically, Avista seeks an independent assessment regarding how the Company meets or accedes regulatory guidance. This report summarizes the results of this assessment.

It is our view that Avista is active in improving its hedging program in response to stakeholder comments and Commission rulings and is compliant in its Risk-Responsive Hedging program. Both increased price risk and hedge loss risk are addressed in the Avista hedging program. After having examined the Avista program, it is our opinion that Avista is pursuing best practice, hedging in accordance with industry norms, and has a hedging plan which incorporates both programmatic and risk responsive hedge techniques in accordance with guidance provided by the Washington Utilities and Transportation Commission.[1]

Decision in Commission Docket UG-132019

The Commission in its decision in Docket UG-132019 states that it is evident that, at any given moment, some level of hedging is justified, and the level of hedging is informed largely by an assessment of market volatility.[2] Avista' s current hedging activities include assessing market volatility through the use of VaR metrics, stop-loss (for upward price spikes), trigger bands (for significant downward price movements), effectively tying hedges to market volatility. Avista has developed a plan which incorporates risk responsive hedge metrics into the overall procurement strategy in accordance with guidance provided by the WUTC. These strategies are continuously reviewed for further refinements in an effort to develop hedge loss risk metrics and systems which best accomplish the Procurement Plan goal while pursuing least-cost.

STATEMENT OF COMMISSION POLICY Commission Docket UG-132019 [3]

In response to the Commission's selected key paragraphs noted below:

A. Comments Related to Docket Preliminary Remarks

39… Avista is active in continuously improving its hedging program in response to stakeholder comments and Commission rulings. Both increased price risk and hedge loss risk are addressed in the Avista hedging program.

41… It is our opinion that Avista' s hedging practices are not speculative in nature. Avista Risk Policy specifically notes that hedging is an activity designed to reduce price uncertainty, not an attempt to realize profits based on predictions of anticipated market movements. Specifically, Avista assures non-speculative hedging through the systematic use of its Programmatic Hedging program, risk policy driven and focused on reducing uncertainty. Consistent with the uncertainty reduction focus, Avista does not currently sell hedges in anticipation of softening markets.

[1] BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, DOCKET UG-132019, "In the Matter of the Commission Inquiry into Local Distribution Companies' Natural Gas Hedging Practices", Service Date: March 13, 2017, p.13, Section 48.

[2] Ibid. DOCKET UG-132019, p.11, Section 36.

[3] Ibid. DOCKET UG-132019, referenced sections are noted.

42… As Avista notes, "all financial hedges should be associated with a physical index priced transaction, thus equalizing the physical and economic effects of both physical and financial hedges. Specifically, Avista only buys hedges if needed for, and matched with, physical supply obligations. This practice is indicative of and further assures non-speculative hedging.
43… In an effort to provide the best procurement strategy, and in response to Commission guidance, Avista has instituted a risk responsive hedging strategy and continues to build this strategy. Avista complies with generally accepted and overarching hedging principles focused on controlling price uncertainty.

B. Comments Related to Docket Risk-responsive Hedging Strategy

44… While, the [Getting's] White Paper may serve as a foundational document for the Commission's policy position on natural gas utility hedging practices, Avista was already in the process of developing systems and models consistent with the related logic found in the Getting's paper, specifically the use of quantitative methods, risk tolerances around both upside price risk and hedge loss risk and market volatility focused hedge ratios in development of a risk-responsive hedging strategy.[4]
45… While it is the Commission's explicit policy preference that the Companies employ risk-responsive hedge strategies, the Commission declines to be formulaic in suggesting how those methods are incorporated.[5] Avista's hedging program addresses both upside cost risk and hedge loss risk. Although Avista uses a "programmatic" risk model, the model employs both time based traunchs, and upper and lower price bands to systematically layer on hedges as the delivery month approaches. The traunching and bands effectively layer in hedges in response to market conditions as recommended by the Commission's risk-responsive hedge strategy noted above. Additionally, Avista is actively using market data to adjust its hedge ratios.
46… Avista has developed a framework for risk mitigation informed by quantitative metrics[6].

Comments Related to Docket Regulatory Review

Avista actively and collaboratively participates in updates and reviews with the commission staff and other stakeholders. During updates, Avista shares results of past hedging plan performances, proposed changes, and market activity, as well as engages in dialog on new ideas or concepts to improve hedging strategies. Avista considers and utilizes feedback from these interactive stakeholder meetings to continuously improve its hedging program.

Comments Related to Docket Prudence Standards

Getting's paper notes "The management of dual, competing tolerances discussed in this paper constitutes a major change from simple volatility-reduction objectives that are prevalent today, and therefore, hedging methodologies must change accordingly."[7] To illustrate the industry convention, Philippe Jorion, the author of the industry standard book on Value at Risk[8], defines risk as the volatility of unexpected outcomes, and risk management as the process by which various risk exposures are identified, measured, and controlled. With this in mind, it is important to note that the prevailing purpose if risk management activities is not to make money or

[4] Avista Utilities Natural Gas Procurement Plan and Hedging Framework, submitted as part of its 2017 PGA filing in response to DOCKET UG-132019, Service Date: March 13, 2017, p.13, Section 48.
[5] Ibid. Gettings, p.12.
[6] Ibid. Gettings, p13.
[7] Ibid. Gettings, p3.
[8] Jorion, Philippe, Value at Risk: The New Benchmark for Managing Financial Risk, 2ed Ed., McGraw Hill.

eliminate cost. "Understanding risk means that financial managers can consciously plan for the consequences of adverse outcomes and, by so doing, be better prepared for the inevitable uncertainty."[9] Avista's Risk Policies, Analytics and Hedging Activities are consistent with these principles and best practice.

Compliance with The Getting's Recommendations

Avista in general complies with the Getting's recommendations and complies with generally accepted hedging principles focused on controlling price uncertainty. Avista continuously improves its overall implementation strategy in order to reduce risk in accordance with guidelines established by the Commission.

Avista uses four risk mitigation strategies to assure compliance with the Gettings recommendations. These include:

1) Programmatic Hedging
2) Defensive Hedging
3) Contingent Hedging – Selling, Options
4) Discretionary Hedging

Although the Contingent Hedging strategy is implemented at Avista, consistent with the risk management convention noted above by Jorion and others, Avista is not currently active in selling hedges once they are executed. Specifically, once the long hedge is purchased to cover a supply obligation, Avista does not sell the hedge prior to the delivery month in anticipation of lower future prices. This practice is consistent with the management objective of controlling price uncertainty. Avista's goal is to develop a plan that utilizes customer resources (storage and transportation), layers in pricing over time for stability (time averaging), allows discretion to take advantage of pricing opportunities should they arise, and appropriately manages risk.[10] The risk management initiative within Avista aims to adopt best industry practices, consistent with the Commission's regulatory concerns and rulings. Avista further seeks to respond to the regulatory oversite provided under the PGA (Purchase Gas Adjustment) process. Specifically, Avista seeks to implement the Commission's recommended Risk Responsive Hedging Program, as noted above in the Decision in Commission Docket UG-132019.

Author Biography

Kenneth Skinner, Ph.D. -- Vice President of Risk & Evaluation Products, Dr. Skinner has over 20 years' experience in evaluation and risk measurement, having worked as an energy consultant with PHB Hagler Bailly and Financial Times (FT) Energy, and as the Derivative Structuring Manager for the retail energy supplier Sempra Energy Solutions. He has his Ph.D. from Colorado School of Mines, in Mineral Economics, with an emphasis in Operations Research, an MBA from Regis University and a BS in Engineering from Letourneau University.

Dr. Skinner is a nationally recognized expert in economic evaluation and modelling of energy assets including energy storage, distribution and generation, efficiency and demand response, renewable energy alternatives, financial derivatives and structured contracts using net present value, econometric and statistical methods, optimization principles, and real option valuation

[9] Ibid. Jorion, p.23
[10] Avista's Hedge Plan, Power-Point Presentation, November 16, 2017

techniques. Dr. Skinner is widely published and currently the technology columnist for Wiley Natural Gas and Electricity Journal. He is a noted speaker on energy related topics for organizations such as AESP, IAEE, ACEEE, PLMA, IEPEC, INFORMS, Infocast, EUCI, SNL Energy and PGS Energy Training.

Notable risk management projects include:

- Developing the value at risk (VaR) reporting system for the Atmos Energy natural gas trading division
- Assessing risk models for the North American electric supply division of E.ON energy
- Advising Dayton Power and Light on risk adjusted reporting metrics
- Building the natural gas storage valuation model and mark-to-market reporting for a national gas company
- Assessing term risk for structured retail gas and electricity contracts
- Pricing risk associated with complex generation fuel supply and tolling contracts
- Author of a national retail energy supplier's structured pricing model

Dr. Eric C. Woychik, Senior Vice President, Willdan and Executive Consultant, Strategy Integration LLC.

Eric has over 40 years of experience in electricity markets, regulatory policy, energy portfolio assessment, and energy business models. Eric has 40 years of experience and has worked in over 40 countries on energy market formation, gas and electricity resource development, regulatory policy, and risk management. He holds degrees in market management, economics, and environmental policy and planning.

He is an expert in gas and electricity markets, market formation, financial analysis, grid analysis and valuation, advising numerous energy utilities, companies, and policy bodies. This includes work with virtually all energy stakeholder groups on regulatory policy, investment strategy, business models, and transformational energy change. His areas of focus include market structure and protocols, integrated resource planning, distributed resource optimization, strategic behavior, the geospatial business case, business model development, and the utility of the future. Eric has been an expert witness in over 50 regulatory and civil cases on energy resources, markets, and valuation.

Respectfully submitted,
WILLDAN GROUP, INC.

AVISTA UTILITIES

2018 Washington Natural Gas Hedge Report

Exhibit B – Hedge Detail Support

Trade Date	Hedge	Hedge Price	Avg. Daily Cash actual	Mark to daily avg. market	Days in contract	Daily volume	Total Volume	Current Cost	No Hedges Cost	Total Contract Cost
10/3/2017	December 2017	$ 1.945	$ 1.557	$ (0.388)	31	2,500	77,500	$ 150,737.50	$ 120,696	$ 30,042
11/2/2017	December 2017	$ 1.959	$ 1.557	$ (0.402)	31	2,500	77,500	$ 151,822.50	$ 120,696	$ 31,127
10/9/2017	January 2018	$ 1.978	$ 1.713	$ (0.265)	31	2,500	77,500	$ 153,256.25	$ 132,750	$ 20,507
11/7/2017	January 2018	$ 2.075	$ 1.713	$ (0.362)	31	2,500	77,500	$ 160,812.50	$ 132,750	$ 28,063
11/14/2017	January 2018	$ 1.580	$ 1.713	$ 0.133	31	2,500	77,500	$ 122,450.00	$ 132,750	$ (10,300)
11/14/2017	February 2018	$ 1.605	$ 1.655	$ 0.050	28	2,500	70,000	$ 112,350.00	$ 115,863	$ (3,513)
11/8/2017	April 2018	$ 1.589	$ 1.150	$ (0.439)	30	2,500	75,000	$ 119,137.50	$ 86,218	$ 32,920
11/28/2017	April 2018	$ 1.345	$ 1.150	$ (0.195)	30	2,500	75,000	$ 100,875.00	$ 86,218	$ 14,657
12/5/2017	April 2018	$ 1.155	$ 1.150	$ (0.005)	30	2,500	75,000	$ 86,625.00	$ 86,218	$ 407
12/11/2017	April 2018	$ 1.055	$ 1.150	$ 0.095	30	2,500	75,000	$ 79,125.00	$ 86,218	$ (7,093)
12/14/2017	April 2018	$ 1.097	$ 1.150	$ 0.053	30	2,500	75,000	$ 82,275.00	$ 86,218	$ (3,943)
12/21/2017	April 2018	$ 0.920	$ 1.150	$ 0.230	30	2,500	75,000	$ 69,000.00	$ 86,218	$ (17,218)
1/4/2018	April 2018	$ 0.915	$ 1.150	$ 0.235	30	2,500	75,000	$ 68,625.00	$ 86,218	$ (17,593)
1/19/2018	April 2018	$ 0.900	$ 1.150	$ 0.250	30	2,500	75,000	$ 67,500.00	$ 86,218	$ (18,718)
2/5/2018	April 2018	$ 0.821	$ 1.150	$ 0.329	30	2,500	75,000	$ 61,575.00	$ 86,218	$ (24,643)
2/16/2018	April 2018	$ 0.825	$ 1.150	$ 0.325	30	2,500	75,000	$ 61,875.00	$ 86,218	$ (24,343)
3/2/2018	April 2018	$ 0.994	$ 1.150	$ 0.156	30	2,500	75,000	$ 74,550.00	$ 86,218	$ (11,668)
12/5/2017	May 2018	$ 1.150	$ 0.795	$ (0.355)	31	2,500	77,500	$ 89,125.00	$ 61,622	$ 27,503
12/20/2017	May 2018	$ 0.957	$ 0.795	$ (0.162)	31	2,500	77,500	$ 74,167.50	$ 61,622	$ 12,545
1/8/2018	May 2018	$ 0.770	$ 0.795	$ 0.025	31	2,500	77,500	$ 59,675.00	$ 61,622	$ (1,947)
3/19/2018	May 2018	$ 0.640	$ 0.795	$ 0.155	31	2,500	77,500	$ 49,600.00	$ 61,622	$ (12,022)
12/21/2017	June 2018	$ 0.955	$ 0.898	$ (0.057)	30	2,500	75,000	$ 71,625.00	$ 67,344	$ 4,281
12/21/2017	July 2018	$ 0.990	$ 1.012	$ 0.022	31	2,500	77,500	$ 76,725.00	$ 78,400	$ (1,675)
							1,745,000	**$ 2,143,509**	**$ 2,096,134**	**$ 47,375**

Cost per Dth
$ 0.027