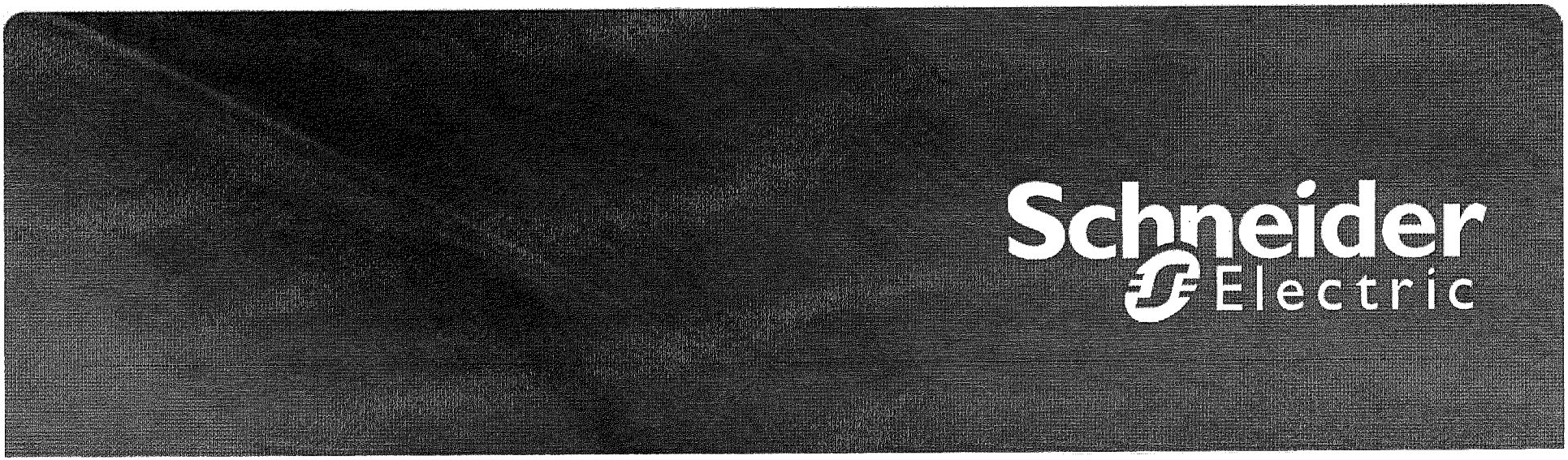
# Washington UTC

*Avista Hedging Practices Review*
*February 28, 2013*

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# Report Summary

## *Report Summary*

Washington Utilities and Transportation Commission (WUTC) has engaged Schneider Electric (formerly Summit Energy Services, Inc.) to provide expertise in the preparation of testimony, analysis and exhibits examining the inter-related activities of natural gas procurement, commodity price risk management and hedging strategies involving the following investor-owned utilities (IOUs) regulated by WUTC:

- Puget Sound Energy, Inc. (PSE)
- Avista Corp
- Northwest Natural Gas (NWN)
- Cascade Natural Gas Corporation

In support of this initiative, the material that follows will explore specifically for Avista the market conditions and forces under which they must operate as well as provide a critique of the policies, procedures & strategies employed by them. Whenever possible, critical issues will be identified and potential improvement areas elevated.

# Best Practice Risk Management Methodology

# *Best Practice Risk Management Methodology*

For context within the review of the risk management policies, strategies and procedures utilized by Avista, the following areas of focus will be highlighted and used to categorize critiques and recommendations:

- Objectives/Goals/Purpose Statements

  Has the entity translated general statements, i.e. reducing volatility, managing risks, maintaining price or rate stability, into defined numerical metrics? Are significant changes in these metrics met with adjustment in strategic parameters?

- Exposure Quantification

  Has the entity defined the model(s) required to calculate the portfolio of 'risks' to which the risk management policy applies? Has it determined a methodology by which to calculate 'hedgeable' or partially 'hedgeable' risks within the portfolio or has it defined those risks within the portfolio for which a risk mitigation strategy will apply? Are examples given to show exposure quantification methodology?

- Strategic Initiatives

  Has the entity created a blueprint for achieving goals? Is there an outline of empirical and statistical information and analysis required as input to enable strategic management? Have definitive reporting outputs necessary for management been outlined? Is the strategy creation and management enabled in policy with designated role-level accountabilities? Are there measures of performance defined on decisions deemed as discretionary or opportunistic; what is required to validate these types of transactions?

- Oversight and Control

  Has the entity defined the governance structures and the functional oversight groups and key roles empowered to implement and manage risk management functions? Are proper mechanisms in place to ensure compliance within all risk management functions?

# *Avista Policy Review*

All information relative to Avista's Risk Policy is marked confidential.

# Policy Review

| | Avista |
|---|---|
| Formal Risk Management Policy | |
| ***Defined In Policy*** | |
| Policy/Strategy Goals & Objectives | |
| Governance Framework Defined | |
| Deligation of Authority | |
| Strategy Definition | |
| Allowable Instrumentation | |
| Hedge Proceedure Outline | |
| Deal Capture Process Outline | |
| Trade Confirmation Process Outline | |
| Counterparty Evaluation | |
| Hedge Gain/Loss Tolerance Provision | |
| Authorization Limits (In Policy or Procedure) | |
| *Dollar Limits* | |
| *Volume Limits* | |
| *Price Limits* | |
| *Term Limits* | |
| Hedge Time Horizon | |
| *Volume* | |
| *Term* | |

4-Credit evaluation only



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## *Avista Corp*

- Objectives/Goals/Purpose Statements
  - 
  - 
- Exposure Quantification
  - 
- Strategic Initiatives
  - 
  - 
- Oversight and Control
  - 



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# Avista's Regional Natural Gas Pricing Dynamic

## *Avista's Regional Natural Gas Pricing Dynamics*

| Avista Devilered Volume by Location (%) | |
|---|---|
| **AECO** | 74.66% |
| **SUMAS** | 11.75% |
| **ROCKIES** | 13.58% |
| **INTERCOMPANY** | 0% |

•The entity participates in a relatively small footprint of delivery points, but the exposure to those points varies significantly amongst them so market forces that effect only one point will not impact all entities equally.

•CME Nymex Henry Hub is also a relevant price point: It is utilized as a financial hedge vehicle as well as a component in formula pricing against physical contracts.

•High correlation of prices in the entity's portfolio with similar seasonal and technical price movement characteristics.

•Delivery points falling under the 'other' category are predominately daily, not first-of-month convention and have limited liquidity in forward market.

## *Henry Hub (NYMEX) NG Market Summary*

**What is it?:**

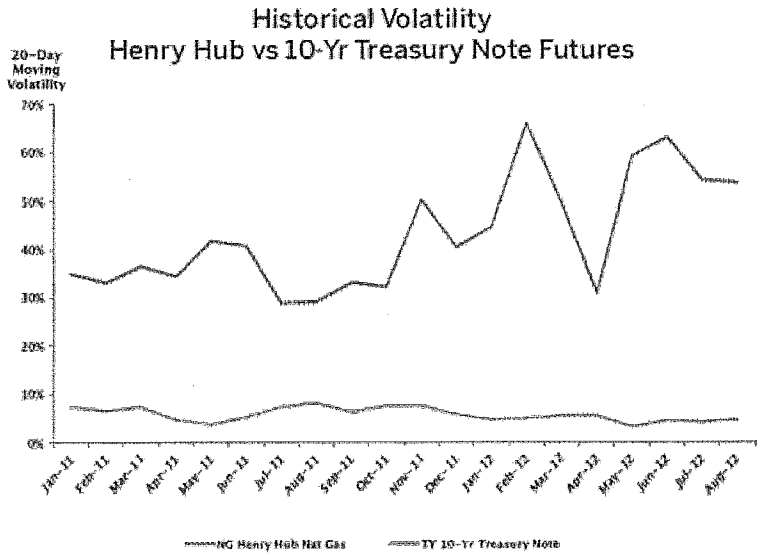
A distribution hub located in Erath, Louisiana on the Sabine Pipeline system. A dominant hub, it interconnects with nine interstate and four intrastate pipelines. It serves as the delivery point for physically settled futures contracts that trade on CME's New York Mercantile Exchange (Nymex).

**Why does it matter?:**

It's a widely used national benchmark for natural gas pricing and is a component in a large percentage of formula-driven pricing in physical supply contracts across the US. Nymex futures contracts, physically delivered at Henry Hub, are the 3rd largest commodity futures contract in the world by volume.

**Characteristics:**

- High volatility relative to other commodities
- High levels of liquidity
- Transparent forward price curve (12 years)
- New technologies have greatly increased US supply options pressuring prices to decade+ lows



# *AECO (Alberta Hub) Market Summary*

**Provinces Served:**
Alberta, Saskatchewan, Manitoba, Ontario & Quebec (also the state of Montana)

**Transport Options:**
Third party supply opportunities are available to all industrial customers based on volume requirements

**Market Drivers:**
Storage, Demand, Production, Weather, Exports to US, Exchange rates, Oil Sands

**Regional Nuances:**
Storage- LDC backed storage products are only available behind Enbridge for very large volume industrial customers (22,576 GJ/day)

## Sumas (Northwest Canadian Border)Market Summary

**States Served:**

British Columbia, Idaho, Nevada, Oregon and Washington

**Transport Options:**

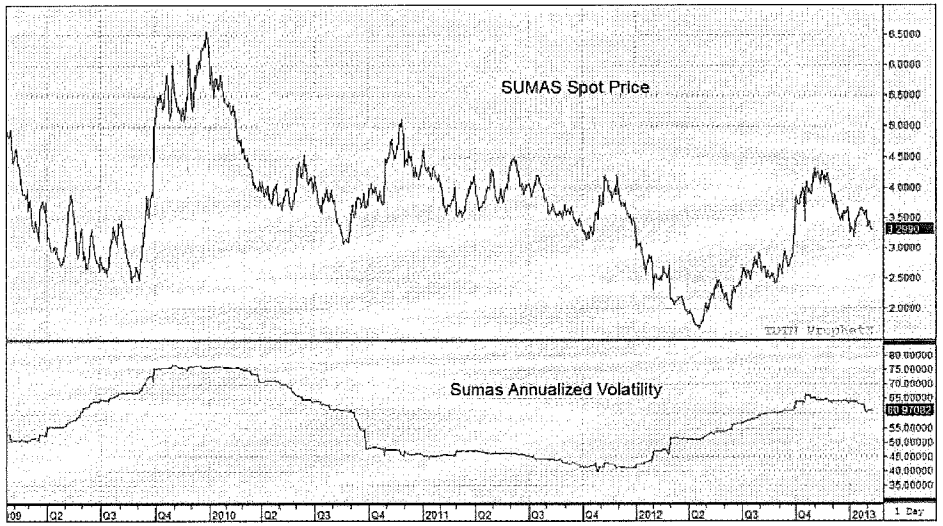
All industrial and commercial customers may transport in this area.

**Market Drivers:**

NYMEX, Weather, Hydro, W. Canadian Gas Imports

**Regional Nuances:**

Decreased Canadian production and an increase in the production of Canadian oil sands has reduced imports from Canada.




## CIG (Rockies) Market Summary

**States Served:**

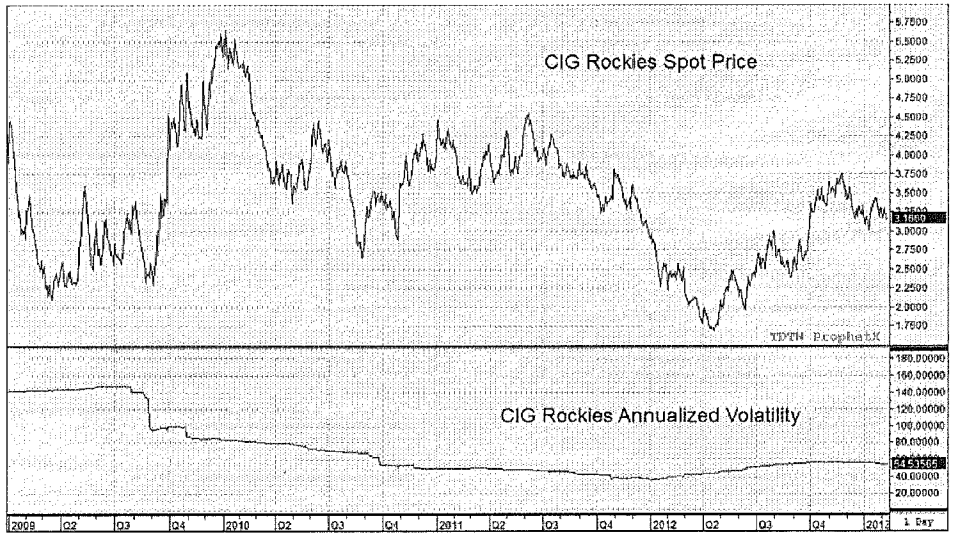
Colorado & Wyoming

**Transport Options:**

Third party supply opportunities are available for all industrial and commercial customers in Colorado. No volume requirements are necessary. Wyoming also has a once-a-year "choice program" for natural gas selection behind SourceGas.

**Market Drivers:**

NYMEX, Weather, Western Storage, Production Levels, Pipeline Expansions



# Delivery Point Correlations

36 Periods

| Correlations | |
|---|---|
| NYMEX to CIG Rockies | 96.60% |
| NYMEX Change to CIG Rockies Change | 93.40% |
| NYMEX to NWPL-Sumas-Rockies | 96.57% |
| NYMEX Change to NWPL-Sumas-Rock Change | 93.98% |
| NYMEX to Questar Rockies | 95.72% |
| NYMEX Change to Questar Rockies Change | 93.72% |
| NYMEX to Spectra Westcoast #2 | 87.65% |
| NYMEX Change to Spectra/Westcoast #2 Change | 14.93% |
| NYMEX to AECO 7A | 94.85% |
| NYMEX Change to AECO 7A Change | 79.73% |
| NYMEX to AECO 5A | 85.75% |
| NYMEX Change to AECO 5A Change | 3.95% |

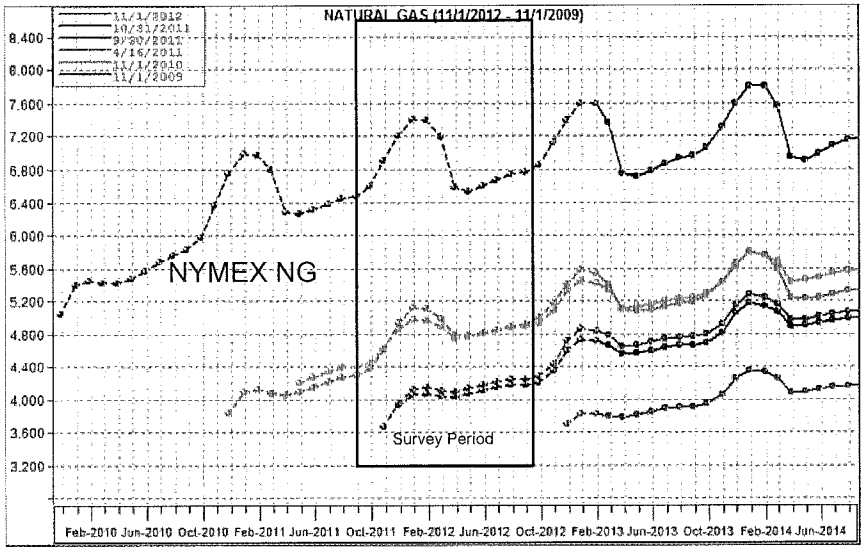
12 Periods

| Correlations | |
|---|---|
| NYMEX to CIG Rockies | 98.45% |
| NYMEX Change to CIG Rockies Change | 93.39% |
| NYMEX to NWPL-Sumas-Rockies | 97.95% |
| NYMEX Change to NWPL-Sumas-Rock Change | 91.87% |
| NYMEX to Questar Rockies | 97.72% |
| NYMEX Change to Questar Rockies Change | 95.20% |
| NYMEX to Spectra Westcoast #2 | 84.66% |
| NYMEX Change to Spectra/Westcoast #2 Change | 41.82% |
| NYMEX to AECO 7A | 92.91% |
| NYMEX Change to AECO 7A Change | 86.98% |
| NYMEX to AECO 5A | 84.44% |
| NYMEX Change to AECO 5A Change | 54.51% |

| R-Squareds | |
|---|---|
| NYMEX to CIG Rockies | 93.32% |
| NYMEX Change to CIG Rockies Change | 87.24% |
| NYMEX to NWPL-Sumas-Rockies | 93.26% |
| NYMEX Change to NWPL-Sumas-Rock Change | 88.32% |
| NYMEX to Questar Rockies | 91.62% |
| NYMEX Change to Questar Rockies Change | 87.84% |
| NYMEX to Spectra Westcoast #2 | 76.83% |
| NYMEX Change to Spectra/Westcoast #2 Change | 2.23% |
| NYMEX to AECO 7A | 89.97% |
| NYMEX Change to AECO 7A Change | 63.56% |
| NYMEX to AECO 5A | 73.53% |
| NYMEX Change to AECO 5A Change | 0.16% |

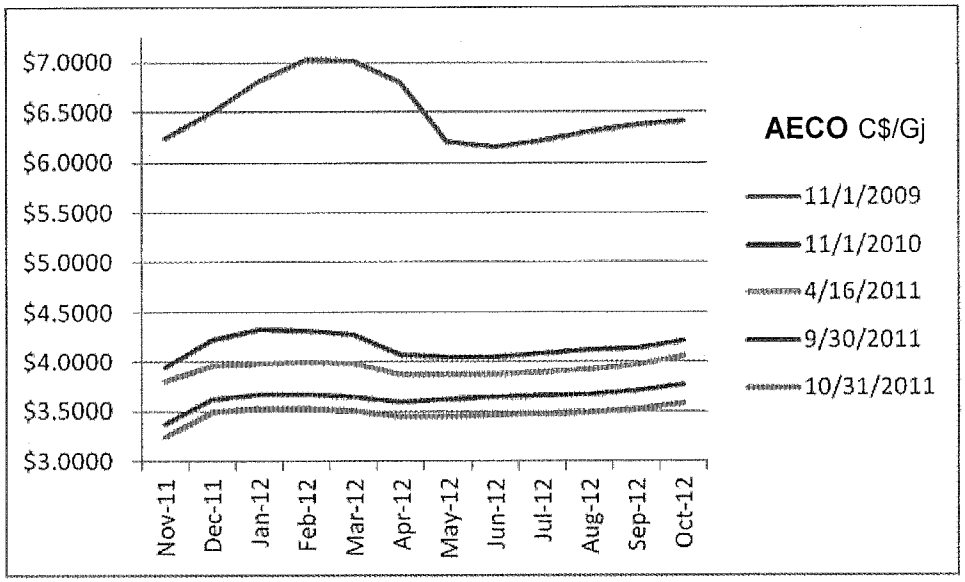
| R-Squareds | |
|---|---|
| NYMEX to CIG Rockies | 96.92% |
| NYMEX Change to CIG Rockies Change | 87.21% |
| NYMEX to NWPL-Sumas-Rockies | 95.95% |
| NYMEX Change to NWPL-Sumas-Rock Change | 84.40% |
| NYMEX to Questar Rockies | 95.50% |
| NYMEX Change to Questar Rockies Change | 90.63% |
| NYMEX to Spectra Westcoast #2 | 71.67% |
| NYMEX Change to Spectra/Westcoast #2 Change | 17.49% |
| NYMEX to AECO 7A | 86.33% |
| NYMEX Change to AECO 7A Change | 75.66% |
| NYMEX to AECO 5A | 71.30% |
| NYMEX Change to AECO 5A Change | 29.72% |

## Natural Gas Dynamics – Forward Pricing Behavior Nov'09 - Nov'11




- Market conditions during this timeframe for each entities' portfolio fostered steadily declining prices.
- Term structure stayed largely contango other than for seasonal conditions.
- This made opportunistic buying difficult and monthly expirations in all the relevant markets experienced their lowest pricing predominantly in their final 90 days before expiration.

- Price is not always the key determinant for delivery point selection when contracting. All the entities have listed objectives around having a diversified supply base.




US$/C$ 12 Mo Avg. 1.12 During Survey Period

# *Delivery Point Price Ranges (Nov'09 – Oct'12) $/MmBtu*

| NYMEX | | CIG Rockies | | NWPL-Sumas-Rockies | | Questar Rockies | |
|---|---|---|---|---|---|---|---|
| 36 Month Historical | | 36 Month Historical | | 36 Month Historical | | 36 Month Historica | |
| Max | $5.814 | Max | $5.540 | Max | $5.620 | Max | $5.550 |
| Min | $2.036 | Min | $1.750 | Min | $1.820 | Min | $1.750 |
| Diff | $3.778 | Diff | $3.790 | Diff | $3.800 | Diff | $3.800 |
| Survey Period | | Survey Period | | Survey Period | | Survey Period | |
| Max | $3.524 | Max | $3.410 | Max | $3.440 | Max | $3.380 |
| Min | $2.036 | Min | $1.750 | Min | $1.820 | Min | $1.750 |
| Diff | $1.488 | Diff | $1.660 | Diff | $1.620 | Diff | $1.630 |

| Spectra/West Coast #2 | | AECO 7A | | AECO 5A | |
|---|---|---|---|---|---|
| 36 Month Historical | | 36 Month Historical | | 36 Month Historical | |
| Max | $5.229 | Max | $5.242 | Max | $6.264 |
| Min | $1.505 | Min | $1.671 | Min | $1.676 |
| Diff | $3.724 | Diff | $3.571 | Diff | $4.588 |
| Survey Period | | Survey Period | | Survey Period | |
| Max | $2.963 | Max | $3.325 | Max | $3.140 |
| Min | $1.505 | Min | $1.671 | Min | $1.676 |
| Diff | $1.458 | Diff | $1.654 | Diff | $1.464 |

*Survey Period is the term Nov'11 – Oct'12*

# *Avista's Survey Period Results*

## *Avista WACOG – 2-Year Prior Through Survey Period*

| % Coverage of Forecast Load | | | | | |
|---|---|---|---|---|---|
| | 1 Day Adv | 1 Mo Adv | 6 Mo Adv | 1 Yr Adv | 2 Yr Adv |
| | 31-Oct-11 | 01-Oct-11 | 01-May-11 | 01-Nov-10 | 01-Nov-09 |
| Avista | | | | | |

| Forecast Load | | | | | |
|---|---|---|---|---|---|
| | 1 Day Adv | 1 Mo Adv | 6 Mo Adv | 1 Yr Adv | 2 Yr Adv |
| | 31-Oct-11 | 01-Oct-11 | 01-May-11 | 01-Nov-10 | 01-Nov-09 |
| Avista | | | | | |

| WACOG of Covered Forecast Load ($/mmBtu) | | | | | |
|---|---|---|---|---|---|
| | 1 Day Adv | 1 Mo Adv | 6 Mo Adv | 1 Yr Adv | 2 Yr Adv |
| | 31-Oct-11 | 01-Oct-11 | 01-May-11 | 01-Nov-10 | 01-Nov-09 |
| Avista | | | | | |

# Avista Survey Period Results

| | Mkt Forward - Start of survey period | End | MinPrice | MaxPrice | ActualLoad | Fcast Load | %Open | %Fix | FixVol | Fixed Avg | Best Case | Worst Case | Realized |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nov-11 | | | | | | | | | | | | | |
| Dec-11 | | | | | | | | | | | | | |
| Jan-12 | | | | | | | | | | | | | |
| Feb-12 | | | | | | | | | | | | | |
| Mar-12 | | | | | | | | | | | | | |
| Apr-12 | | | | | | | | | | | | | |
| May-12 | | | | | | | | | | | | | |
| Jun-12 | | | | | | | | | | | | | |
| Jul-12 | | | | | | | | | | | | | |
| Aug-12 | | | | | | | | | | | | | |
| Sep-12 | | | | | | | | | | | | | |
| Oct-12 | | | | | | | | | | | | | |

•Based on exposure position as of Oct 31, 2011 and considering previously established fixed price positions (fin/phy/storage) and WACOG, Avista achieved a realized result nearly 20 cents better than our 'best case' scenario (assumes remaining exposure covered at lowest daily price seen during Nov 1, 2011 – Oct 31, 2012 period). Some of this is attributed to volume forecast variance but other mechanisms (i.e. early hedge exit, product with optionality component, storage re-allocation, variance to Gas Daily-daily or intra-day pricing etc.) could also have contributed to this performance.



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*Recommendations*

- **Instrumentation Criteria**: The entity has in policy a detail of allowable instrumentation to effect a hedge mechanism. What is lacking is a detail of parameters around the selection of the instrument. (Need specifics of why a financial hedge vs. a fixed price physical; why an option product vs. a swap, etc)
- **Hedge Designation**: it is not clear that all instances of fixed price engagement will have/should have a direct impact on rate payers. By documenting at the inception of all fixed price contractual obligations the rationale behind the action (i.e. how it ties to a particular strategic initiative or trade plan) then it is easier to follow the development of the final rate structure as well as gives a greater transparency in tying strategy outline to action and make the case the hedge decision was reasonable and prudent.
- **Aggregate Hedge Reporting Protocol:** Develop a standardized report matrix over the entire term of their hedge horizon (delivered monthly or quarterly) and track development over time of the entity's acquisition cost aggregation. Entity should also file an annual strategic plan outlining forecasted scenario best/worse case range and execution plan within that range. If entity has multi-method strategies (some mechanical, some with discretion, etc.) this plan outline needs to speak specifically to each component.