2015 Electric Integrated Resource Plan

Appendix B – 2015 Electric IRP Work Plan
Avista Corporation’s

2015 Electric Integrated Resource Plan (IRP)
Work Plan

For the
Washington Utilities and Transportation Commission

August 29, 2014

This Work Plan is submitted in compliance with the Washington Utilities and Transportation Commission’s Integrated Resource Planning (IRP) rules (WAC 480-100-238). It outlines the process Avista will follow to develop its 2015 IRP for filing with Washington and Idaho Commissions by August 31, 2015. Avista uses a public process to solicit technical expertise and feedback throughout the development of the IRP through a series of public Technical Advisory Committee (TAC) meetings. Avista held the first TAC meeting for the 2015 IRP on May 29, 2014.

The 2015 IRP process will be similar to those used to produce the previous IRP. Avista will use AURORA\textsuperscript{xmp} for electric market price forecasting, resource valuation and for conducting Monte-Carlo style risk analyses. AURORA\textsuperscript{xmp} modeling results will be used to select the Preferred Resource Strategy (PRS) using Avista’s proprietary PRiSM model. This tool fills future capacity and energy (physical/renewable) deficits using an efficient frontier approach to evaluate quantitative portfolio risk versus portfolio cost while accounting for environmental laws and regulations. Qualitative risk evaluations are in separate analyses. Exhibit 1 shows the process timeline and the process to identify the PRS is in Exhibit 2.

Avista intends to use both detailed site-specific and generic resource assumptions in development of the 2015 IRP. The assumptions combine Avista’s research of similar generating technologies, engineering studies, and the development of the Northwest Power and Conservation Council’s Seventh Power Plan. This IRP will study renewable portfolio standards, environmental costs, sustained peaking requirements and resource adequacy, energy efficiency programs and demand response. The IRP will develop a strategy that meets or exceeds both the renewable portfolio standards and greenhouse gas emissions regulations.

Avista intends to test the PRS against a range of scenarios and potential futures. The TAC meetings will help to determine the underlying assumptions used in the scenarios and futures. The IRP process is very technical and data intensive; public comments are welcome but timely
input and participation will be necessary for inclusion into the process so the plan can be submitted according to the tentative schedule in this Work Plan.

The following topics and meeting times may change depending on the availability of presenters and requests for additional topics from the TAC members. The tentative timeline and agenda items for TAC meetings follows:


- **TAC 2 – September 23, 2014:** Review conservation selection methodology, update on the Company’s demand response study, load and economic forecasts, generation options and Clean Power Plan proposal discussion.

- **TAC 3 – November 2014:** Planning margin, Colstrip discussion, cost of carbon, modeling overview and conservation potential assessment methodology.

- **TAC 4 – February 2015:** Electric and natural gas price forecasts, transmission planning, resource needs assessment, market and portfolio scenario development, energy storage and ancillary service evaluation.

- **TAC 5 – March 2015:** Completed conservation potential assessment, draft PRS, review of scenarios and futures and portfolio analysis.

- **TAC 6 – June 2015:** Review of final PRS and action items.
2015 Electric IRP Draft Outline

The following is a draft outline of the major sections envisioned for the 2015 Electric IRP. This outline may change with the input from the Company’s TAC, and as IRP studies are completed and have been received:

1. Executive Summary
2. Introduction and Stakeholder Involvement
3. Economic and Load Forecast
   a. Economic Conditions
   b. Avista Energy & Peak Load Forecast
   c. Load Forecast Scenarios
4. Existing Resources
   a. Avista Resources
   b. Contractual Resources and Obligations
5. Energy Efficiency and Demand Response
   a. Conservation Potential Assessment
   b. Demand Response Opportunities
6. Long-Term Position
   a. Reliability Planning and Reserve Margins
   b. Resource Requirements
   c. Reserves and Flexibility Assessment
7. Policy Considerations
   a. Environmental Concerns
   b. State and Federal Policies
8. Transmission & Distribution Planning
   a. Avista’s Transmission System
   b. Future Upgrades and Interconnections
   c. Transmission Construction Costs and Integration
   d. Efficiencies
9. Generation Resource Options
   a. New Resource Options
   b. Avista Plant Upgrades
10. Market Analysis
    a. Marketplace
    b. Fuel Price Forecasts
    c. Market Price Forecast
    d. Scenario Analysis
11. Preferred Resource Strategy
    a. Resource Selection Process
    b. Preferred Resource Strategy
    c. Efficient Frontier Analysis
    d. Avoided Cost
12. Portfolio Scenarios
   a. Portfolio Scenarios
   b. Tipping Point Analysis

13. Action Plan
   a. 2013 Action Plan Summary
   b. 2015 Action Plan
Avista Corporation’s


Exhibit 1
2015 Electric IRP Timeline
<table>
<thead>
<tr>
<th>Task</th>
<th>Target Date</th>
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<tbody>
<tr>
<td><strong>Preferred Resource Strategy (PRS)</strong></td>
<td></td>
</tr>
<tr>
<td>Finalize energy demand forecast</td>
<td>July 2014</td>
</tr>
<tr>
<td>Identify Avista’s supply &amp; conservation resource options</td>
<td>September 2014</td>
</tr>
<tr>
<td>Finalize peak load forecast</td>
<td>September 2014</td>
</tr>
<tr>
<td>Update AURORA(^{\text{xmp}}) database for market price forecast</td>
<td>October 2014</td>
</tr>
<tr>
<td>Energy efficiency load shapes input into AURORA(^{\text{xmp}})</td>
<td>October 2014</td>
</tr>
<tr>
<td>Finalize datasets/statistics variables for risk studies</td>
<td>November 2014</td>
</tr>
<tr>
<td>Transmission study due</td>
<td>December 2014</td>
</tr>
<tr>
<td>Finalize distribution feeder forecast</td>
<td>December 2014</td>
</tr>
<tr>
<td>Select natural gas price forecast</td>
<td>December 2014</td>
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<tr>
<td>Finalize deterministic base case</td>
<td>January 2015</td>
</tr>
<tr>
<td>Due date for study requests</td>
<td>Jan. 15, 2015</td>
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<tr>
<td>Base case stochastic study complete</td>
<td>January 2015</td>
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<tr>
<td>Develop efficient frontier and PRS</td>
<td>January 2015</td>
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<tr>
<td>Finalize PRiSM model</td>
<td>February 2015</td>
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<tr>
<td>Simulation of risk studies “futures” complete</td>
<td>February 2015</td>
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<tr>
<td>Simulate market scenarios in AURORA(^{\text{xmp}})</td>
<td>February 2015</td>
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<tr>
<td>Evaluate resource strategies against market futures and scenarios</td>
<td>March 2015</td>
</tr>
<tr>
<td>Present preliminary study and PRS to TAC</td>
<td>March 2015</td>
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<tr>
<td><strong>Writing Tasks</strong></td>
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<td>File 2015 IRP work plan</td>
<td>August 2014</td>
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<tr>
<td>Prepare report and appendix outline</td>
<td>October 2014</td>
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<tr>
<td>Prepare text drafts</td>
<td>April 2015</td>
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<td>Prepare charts and tables</td>
<td>April 2015</td>
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<tr>
<td>Internal draft released at Avista</td>
<td>May 2015</td>
</tr>
<tr>
<td>External draft released to the TAC &amp; filed with Commissions</td>
<td>June 2015</td>
</tr>
<tr>
<td>Final editing and printing</td>
<td>August 2015</td>
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<tr>
<td>Final IRP submission and TAC</td>
<td>August 31, 2015</td>
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</tbody>
</table>
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Exhibit 2
2015 Electric IRP Modeling Process
Exhibit 2: 2015 Electric IRP Modeling Process

Stochastic Inputs

- Fuel Prices
- Fuel Availability
- Resource Availability
- Demand
- Emission Pricing
- Conservation Trends
- Existing Resources

Deterministic

- Existing Resources
- Resource Options
- Transmission

Preferred Resource Strategy

- Avoided Costs
- Cost Effective T&D Projects/Costs
- New Resource Options & Costs

AURORA

"Wholesale Electric Market"

500 Simulations

Resource & Portfolio Margins

Mid-Columbia Prices

PRiSM

"Avista Portfolio"

Efficient Frontier

Capacity Value

2015 Electric IRP Appendix B