



**Work Plan for Avista's
2017 Electric Integrated Resource Plan**

**For the
Washington Utilities and Transportation Commission**

August 30, 2016

2017 Electric Integrated Resource Planning Work Plan

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 2017 IRP for filing with Washington and Idaho Commissions by August 31, 2017. 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 2017 IRP on June 2, 2016.

The 2017 IRP process will be similar to those used to produce the previous IRPs. Avista will use AURORA^{xmp} for electric market price forecasting, resource valuation and for conducting Monte-Carlo style risk analyses. AURORA^{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 involve separate analyses. Exhibit 1 shows the IRP 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 2017 IRP. The assumptions combine Avista's research of similar generating technologies, engineering studies, and 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, energy storage 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 1: Thursday, June 2, 2016:** TAC meeting Expectations, review of 2015 IRP acknowledgement letters, Energy Independence Act compliance, energy efficiency modeling discussion, resource adequacy – preliminary results and review the 2017 IRP draft Work Plan.
- **TAC 2: Wednesday, September 28, 2016:** Review conservation selection methodology, update on the Company's demand response study, load and economic forecasts, planning margin and generation options.

- **TAC 3: Tuesday, November 8, 2016:** Colstrip discussion, cost of carbon, modeling overview, Power Plan Simulator, and Clean Power Plan & Clean Air Rule discussion.
- **TAC 4: Wednesday, February 15, 2017:** Electric and natural gas price forecasts, transmission planning, resource needs assessment, market and portfolio scenario development,
- **TAC 5: Tuesday, March 28, 2017:** Energy storage and ancillary service evaluation, completed conservation potential assessment, draft PRS, review of scenarios and futures and portfolio analysis
- **TAC 6: Tuesday, June 20, 2017:** Review of final PRS and action items.

2017 Electric IRP Draft Outline

This section provides a draft outline of the major sections in the 2017 Electric IRP. This outline may change as IRP studies are completed and input from the TAC has been received.

- 1. Executive Summary**
- 2. Introduction and Stakeholder Involvement**
- 3. Economic and Load Forecast**
 - a. Economic Conditions
 - b. Avista Energy & Peak Load Forecasts
 - c. Load Forecast Scenarios
- 4. Existing Supply 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. Efficiency System Planning
 - e. Non-power supply storage benefits

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. 2015 Action Plan Summary
- b. 2017 Action Plan

Exhibit 1: 2017 Electric IRP Timeline

<u>Task</u>	<u>Target Date</u>
Preferred Resource Strategy (PRS)	
Finalize energy demand forecast	July 2016
Identify Avista's supply & conservation resource options	September 2016
Finalize peak load forecast	September 2016
Update AURORA ^{xmp} database for market price forecast	October 2016
Energy efficiency load shapes input into AURORA ^{xmp}	October 2016
Finalize datasets/statistics variables for risk studies	November 2016
Transmission study due	December 2016
Finalize distribution feeder forecast	December 2016
Select natural gas price forecast	December 2016
Finalize deterministic base case	January 2017
Due date for study requests	January 13, 2017
Base case stochastic study complete	January 2017
Develop efficient frontier and PRS	January 2017
Finalize PRiSM model	February 2017
Simulation of risk studies "futures" complete	February 2017
Simulate market scenarios in AURORA ^{xmp}	February 2017
Evaluate resource strategies against market futures and scenarios	March 2017
Present preliminary study and PRS to TAC	March 2017
Writing Tasks	
File 2017 IRP Work Plan	August 31, 2016
Prepare report and appendix outline	October 2016
Prepare text drafts	April 2017
Prepare charts and tables	April 2017
Internal draft released at Avista	May 2017
External draft released to the TAC	June 2017
Final editing and printing	August 2017
Final IRP submission to Commissions and TAC	August 31, 2017

Exhibit 2: 2017 Electric IRP Modeling Process

2017 IRP Modeling Process

