# 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 AURORAxmp for electric market price forecasting, resource valuation and for conducting Monte-Carlo style risk analyses. AURORAxmp 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**
   1. Economic Conditions
   2. Avista Energy & Peak Load Forecasts
   3. Load Forecast Scenarios
4. **Existing Supply Resources**
   1. Avista Resources
   2. Contractual Resources and Obligations
5. **Energy Efficiency and Demand Response**
   1. Conservation Potential Assessment
   2. Demand Response Opportunities
6. **Long-Term Position**
   1. Reliability Planning and Reserve Margins
   2. Resource Requirements
   3. Reserves and Flexibility Assessment
7. **Policy Considerations**
   1. Environmental Concerns
   2. State and Federal Policies
8. **Transmission & Distribution Planning**
   1. Avista’s Transmission System
   2. Future Upgrades and Interconnections
   3. Transmission Construction Costs and Integration
   4. Efficiency System Planning
   5. Non-power supply storage benefits
9. **Generation Resource Options**
   1. New Resource Options
   2. Avista Plant Upgrades
10. **Market Analysis**
    1. Marketplace
    2. Fuel Price Forecasts
    3. Market Price Forecast
    4. Scenario Analysis
11. **Preferred Resource Strategy**
    1. Resource Selection Process
    2. Preferred Resource Strategy
    3. Efficient Frontier Analysis
    4. Avoided Cost
12. **Portfolio Scenarios** 
    1. Portfolio Scenarios
    2. Tipping Point Analysis
13. **Action Plan**
    1. 2015 Action Plan Summary
    2. 2017 Action Plan

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| Exhibit 1: 2017 Electric IRP Timeline | |
| Task | **Target Date** |
| 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 AURORAxmp database for market price forecast | October 2016 |
| Energy efficiency load shapes input into AURORAxmp | 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 AURORAxmp | 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

