

# 2021 Electric Integrated Resource Plan

## Appendix I – Publicly Available Inputs and Models



## Appendix I Content

The Company makes data input files in native format, models, and other various content used for its Integrated Resource Planning process available to stakeholders. Non-confidential, non-proprietary IRP content can also be found at [Integrated Resource Planning \(myavista.com\)](https://myavista.com). In a manner to further increase transparency and provide clarity for stakeholders, the following table provides context on data files, models and other content included in Appendix I.

File Name	Folder	File Type	Description of Content
DR Model Avista Integrated Opt-In 3_1_21	Demand Response	Excel	Final AEG model for opt-in demand response programs.
DR Model Avista Integrated Opt-Out 3_1_21	Demand Response	Excel	Final AEG model for opt-out demand response programs.
DR Model Avista Stand Alone 3_1_21	Demand Response	Excel	Final AEG model for stand-alone demand response programs.
Avista 2020 CPA – Electric EE Measure List	Energy Efficiency	Excel	List of residential, commercial and industrial energy efficiency measures along with an introduction includes instructions, notes and sources.
Avista 2020 Electric CPA – Summary and IRP Inputs_Draft_2	Energy Efficiency	Excel	Achievable technical potential energy savings, winter peak savings, summary peak savings inputs used in IRP.
Home Electrification Conversion	Load Forecast	Excel	Regression, assumptions and summary of home conversions if electrification were to occur and impacts to Avista’s electric system.
Load Forecast	Load Forecast	Excel	Energy forecast, peak forecast, retail sales, load split percentages, PHEV and customer rooftop solar.
Climate Shift Scenario Inputs	Market Modeling Inputs and Results	Excel	80-year regional hydro record from NPCC, NPCC 2024 economy load forecast with changing temperatures and factors used in the Aurora model.
CO2 Emissions by Year_Expected-Case	Market Modeling Inputs and Results	Excel	Regional CO2 emission by year for the expected case.
CO2 Emissions by Year_SCC	Market Modeling Inputs and Results	Excel	Regional CO2 emission by year for the social cost of carbon case.

High & Low Natural Gas Prices	Market Modeling Inputs and Results	Excel	High (95 <sup>th</sup> percentile) and low (25 <sup>th</sup> percentile) monthly natural gas prices for the IRP timeframe.
Market Modeling Results	Market Modeling Inputs and Results	Excel	Market modeling results to include stochastic off-peak/on-peak/flat Mid-C prices, stochastic greenhouse gas, hourly Mid-C prices, stochastic historical regional resource dispatch, deterministic hourly Mid-C prices, deterministic monthly Mid-C prices scenarios, deterministic annual greenhouse gas emissions and deterministic regional resource dispatch.
Natural Gas Prices	Market Modeling Inputs and Results	Excel	Monthly natural gas price forecast used for the IRP, both stochastic and deterministic, as well as basin percentage spreads.
Regional Generation Analysis_ClimateShift_2021_IRP	Market Modeling Inputs and Results	Excel	Regional generation analysis by fuel type by state.
Regional Generation Analysis_Expected-Case_2021_IRP_Deterministic	Market Modeling Inputs and Results	Excel	Regional deterministic generation analysis by fuel type by state.
Regional Generation Analysis_Expected-Case_2021_IRP_Stochastic	Market Modeling Inputs and Results	Excel	Regional stochastic generation analysis by fuel type by state.
Regional Generation Analysis_HighPrice_2021_IRP	Market Modeling Inputs and Results	Excel	Regional generation analysis by fuel type by state using the high price scenario.
Regional Generation Analysis_LowPrice_2021_IRP	Market Modeling Inputs and Results	Excel	Regional generation analysis by fuel type by state using the low price scenario.
Regional Generation Analysis_SCC-Case_2021_IRP		Excel	Regional generation analysis by fuel type by state using the SCC scenario.
Social Cost of Carbon	Market Modeling Inputs and Results	Excel	Social cost of carbon in 2007 and 2019 dollars, nominal and levelized.
Emissions_Summary_073020	Other Files	Excel	Avista owned resource emissions summary for select years.

Named Populations	Other Files	Excel	State FIPS codes, county codes, socioeconomic and sensitive population ratings (1-10 with 10 being the highest degree), county, utility (specific to Avista).
Upstream Emission Calculation	Other Files	Excel	Upstream emission calculation for gas and power supply methods as well as method in practice.
1_PriSM_7.0_GUROBI_120720_IRP_PRS_DRAFT_Deterministic	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. Least reasonable cost, PRS, deterministic scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
1_PriSM_7.0_GUROBI_120720_IRP_PRS_DRAFT_HighNGPrice	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. Least reasonable cost, PRS, high natural gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
1_PriSM_7.0_GUROBI_120720_IRP_PRS_DRAFT_LowNGPrice	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. Least reasonable cost, PRS, low natural gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads &

			resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
1_PriSM_7.0_GUROBI_120720_IRP_PRS_DRAFT_SCC	PriSM Model Files- Portfolio Scenarios	Excel	PriSM model - must have Gurobi license to run. Least reasonable cost, PRS, social cost of carbon scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
1a_PriSM_7.0_GUROBI_120720_IRP_PRS_DRAFT_ClimateShift	PriSM Model Files- Portfolio Scenarios	Excel	PriSM model - must have Gurobi license to run. Climate shift scenario, deterministic study, re-optimized. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.

1b_PriSM_7.0_GUROBI_120720_IRP_PRS_DRAFT_SCC	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. Least reasonable cost, PRS, social cost of carbon scenario, re-optimized for SCC. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
3_PriSM_7.0_GUROBI_120720_IRP_PRS_DRAFT_Deterministic	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. Baseline 2 portfolio, deterministic. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
3_PriSM_7.0_GUROBI_120720_IRP_PRS_DRAFT_HighNGPrice	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. Baseline 2 portfolio, high gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic

			variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
3_PRISM_7.0_GUROBI_120720_IRP_PRS_DRAFT_LowNGPrice	PRISM Model Files- Portfolio Scenarios	Excel	PRISM model - must have Gurobi license to run. Baseline 2 portfolio, low gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
3_PRISM_7.0_GUROBI_120720_IRP_PRS_DRAFT_SCC	PRISM Model Files- Portfolio Scenarios	Excel	PRISM model - must have Gurobi license to run. Baseline 2 portfolio, social cost of carbon scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
5_PRISM_7.0_GUROBI_120720_IRP_PRS_DRAFT_Deterministic	PRISM Model Files- Portfolio Scenarios	Excel	PRISM model - must have Gurobi license to run. 2027 clean resource plan, add clean energy resources to = 100% retail sales, deterministic scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy

			efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
5_PRiSM_7.0_GUROBI_120720_IRP_PRS_DRAFT_HighNGPrice	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. 2027 clean resource plan, add clean energy resources to = 100% retail sales, high natural gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
5_PRiSM_7.0_GUROBI_120720_IRP_PRS_DRAFT_LowNGPrice	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. 2027 clean resource plan, add clean energy resources to = 100% retail sales, low natural gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.



5_PRISM_7.0_GUROBI_12072 0_IRP_PRS_DRAFT_SCC	PRISM Model Files- Portfolio Scenarios	Excel	PRISM model - must have Gurobi license to run. 2027 clean resource plan, add clean energy resources to = 100% retail sales, social cost of carbon scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
6_PRISM_7.0_GUROBI_12072 0_IRP_PRS_DRAFT_Deterministic	PRISM Model Files- Portfolio Scenarios	Excel	PRISM model - must have Gurobi license to run. 2045 clean resource plan, add clean energy resources to = 100% retail sales, no new thermal resource, existing thermal resource retire by 2044, long lake and cabinet upgrades turned on, deterministic scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
6_PRISM_7.0_GUROBI_12072 0_IRP_PRS_DRAFT_HighNGPrice	PRISM Model Files- Portfolio Scenarios	Excel	PRISM model - must have Gurobi license to run. 2045 clean resource plan, add clean energy resources to = 100% retail sales, no new thermal resource, existing thermal resource retire by 2044, long lake and cabinet upgrades turned on, high

			natural gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
6_PRiSM_7.0_GUROBI_120720_IRP_PRS_DRAFT_LowNGPrice	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. 2045 clean resource plan, add clean energy resources to = 100% retail sales, no new thermal resource, existing thermal resource retire by 2044, long lake and cabinet upgrades turned on, low natural gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
6_PRiSM_7.0_GUROBI_120720_IRP_PRS_DRAFT_SCC	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. 2045 clean resource plan, add clean energy resources to = 100% retail sales, no new thermal resource, existing thermal resource retire by 2044, long lake and cabinet upgrades turned on, social cost of carbon scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response,

			resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
15_PriSM_7.0_GUROBI_1207 20_IRP_PRS_DRAFT_Deterministic	PriSM Model Files- Portfolio Scenarios	Excel	PriSM model - must have Gurobi license to run. Colstrip retire 2025, deterministic scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
15_PriSM_7.0_GUROBI_1207 20_IRP_PRS_DRAFT_HighNG Price	PriSM Model Files- Portfolio Scenarios	Excel	PriSM model - must have Gurobi license to run. Colstrip retire 2025, high natural gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.

15_PriSM_7.0_GUROBI_1207 20_IRP_PRS_DRAFT_LowNGP rice	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. Colstrip retire 2025, low natural gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
15_PriSM_7.0_GUROBI_1207 20_IRP_PRS_DRAFT_SCC	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. Colstrip retire 2025, social cost of carbon scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
16_PriSM_7.0_GUROBI_1207 20_IRP_PRS_DRAFT_Deterministic	PRiSM Model Files- Portfolio Scenarios	Excel	PRiSM model - must have Gurobi license to run. Colstrip retire 2035, deterministic scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable

			cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
16_PriSM_7.0_GUROBI_1207 20_IRP_PRS_DRAFT_HighNG Price	PriSM Model Files- Portfolio Scenarios	Excel	PriSM model - must have Gurobi license to run. Colstrip retire 2035, high natural gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
16_PriSM_7.0_GUROBI_1207 20_IRP_PRS_DRAFT_LowNGP rice	PriSM Model Files- Portfolio Scenarios	Excel	PriSM model - must have Gurobi license to run. Colstrip retire 2035, low natural gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
16_PriSM_7.0_GUROBI_1207 20_IRP_PRS_DRAFT_SCC	PriSM Model Files- Portfolio Scenarios	Excel	PriSM model - must have Gurobi license to run. Colstrip retire 2035, social cost of carbon scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission

			annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
17_PriSM_7.0_GUROBI_1207 20_IRP_PRS_DRAFT_Deterministic	PriSM Model Files- Portfolio Scenarios	Excel	PriSM model - must have Gurobi license to run. Colstrip retire 2045, deterministic scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
17_PriSM_7.0_GUROBI_1207 20_IRP_PRS_DRAFT_HighNG Price	PriSM Model Files- Portfolio Scenarios	Excel	PriSM model - must have Gurobi license to run. Colstrip retire 2045, high natural gas price scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
17_PriSM_7.0_GUROBI_1207 20_IRP_PRS_DRAFT_LowNGP rice	PriSM Model Files- Portfolio Scenarios	Excel	PriSM model - must have Gurobi license to run. Colstrip retire 2045, low natural gas price scenario. Includes a summary of resource selected, financial

			summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
17_PriSM_7.0_GUROBI_1207 20_IRP_PRS_DRAFT_SCC	PriSM Model Files- Portfolio Scenarios	Excel	PriSM model - must have Gurobi license to run. Colstrip retire 2045, social cost of carbon scenario. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
1_PriSM_7.0_GUROBI_12072 0_IRP_PRS	PriSM Model Files- Portfolio Studies	Excel	PriSM model - must have Gurobi license to run. Least reasonable cost. preferred resource strategy. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.

2_PriSM_7.0_GUROBI_12072 0_IRP_Baseline1	PRiSM Model Files- Portfolio Studies	Excel	PRiSM model - must have Gurobi license to run. Baseline 1, removes clean energy targets in Washington. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
3_PriSM_7.0_GUROBI_12072 0_IRP_Baseline2	PRiSM Model Files- Portfolio Studies	Excel	PRiSM model - must have Gurobi license to run. Baseline 2, no clean goal, no SCC, EE held constant, existing resources held constant, remove flex plant as option due to size even though it's preferred. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
4_PriSM_7.0_GUROBI_12072 0_IRP_Baseline3	PRiSM Model Files- Portfolio Studies	Excel	PRiSM model - must have Gurobi license to run. Baseline 3, no clean goal, no SCC, EE held constant, existing resources held constant. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual



			revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
5_PriSM_7.0_GUROBI_12072 0_IRP_2027 CRP	PriSM Model Files- Portfolio Studies	Excel	PriSM model - must have Gurobi license to run. 2027 clean resource plan, add clean energy resources to = 100% retail sales. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
6_PriSM_7.0_GUROBI_12072 0_IRP_2045 CRP	PriSM Model Files- Portfolio Studies	Excel	PriSM model - must have Gurobi license to run. 2045 clean resource plan, add clean energy resources to = 100% retail sales, no new thermal resource, existing thermal resource retire by 2044, long lake and cabinet upgrades turned on. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional

			emissions, conservation load value (\$/MW) and new CapEx.
6b_PriSM_7.0_GUROBI_120720_IRP_2045 CRP	PriSM Model Files- Portfolio Studies	Excel	PriSM model - must have Gurobi license to run. 2045 clean resource plan, add clean energy resources to = 100%, Colstrip exits in 2022 retail sales, no new thermal resource, existing thermal resource retire by 2044, long lake and cabinet upgrades turned on. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
7_PriSM_7.0_GUROBI_120720_IRP_SCC Applied to ID	PriSM Model Files- Portfolio Studies	Excel	PriSM model - must have Gurobi license to run. Social cost of carbon applied to Idaho, EE held constant. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
8_PriSM_7.0_GUROBI_120720_IRP_Low Load Forecast	PriSM Model Files- Portfolio Studies	Excel	PriSM model - must have Gurobi license to run. Low load forecast scenario, EE held constant from PRS. Includes a summary of resource selected, financial summary, clean goal progress, loads &

			resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
9_PRISM_7.0_GUROBI_120720_IRP_High Load Forecast	PRISM Model Files- Portfolio Studies	Excel	PRISM model - must have Gurobi license to run. High load forecast scenario, EE held constant from PRS. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
10_PRISM_7.0_GUROBI_120720_RA Market	PRISM Model Files- Portfolio Studies	Excel	PRISM model - must have Gurobi license to run. Resource adequacy market scenario, uses RA market planning requirements rather than Avista's, includes change to existing resources and changes to peak credits for new resources. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional

			emissions, conservation load value (\$/MW) and new CapEx.
11_PriSM_7.0_GUROBI_1207 20_IRP_Electirication 1	PriSM Model Files- Portfolio Studies	Excel	PriSM model - must have Gurobi license to run. Electrification scenario 1, forecast of additional load due to natural gas customers moving to electric, uses Avista forecast on load changes, updates EE programs & DR for additional opportunities, adjustments made to load value & retail sales. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
12_PriSM_7.0_GUROBI_1207 20_IRP_Electirication 2	PriSM Model Files- Portfolio Studies	Excel	PriSM model - must have Gurobi license to run. Electrification scenario 2 – hybrid scenario, forecast of additional load due to natural gas customers moving to electric, uses Avista forecast on load changes, updates EE programs & DR for additional opportunities, adjustments made to load value & retail sales. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general

			assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
13_PriSM_7.0_GUROBI_1207 20_IRP_Electirication 3	PriSM Model Files- Portfolio Studies	Excel	PriSM model - must have Gurobi license to run. Electrification scenario 3 – high efficiency, forecast of additional load due to natural gas customers moving to electric, uses Avista forecast on load changes, updates EE programs & DR for additional opportunities, adjustments made to load value & retail sales. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
14_PriSM_7.0_GUROBI_1207 20_IRP_2xSCC	PriSM Model Files- Portfolio Studies	Excel	PriSM model - must have Gurobi license to run. Social cost of carbon times 2, doubles SCC for Washington – least cost strategy with this assumption. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.

15_PriSM_7.0_GUROBI_1207 20_IRP_Colstrip2025	PRiSM Model Files- Portfolio Studies	Excel	PRiSM model - must have Gurobi license to run. Colstrip retire in 2025. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
16_PriSM_7.0_GUROBI_1207 20_IRP_Colstrip2035	PRiSM Model Files- Portfolio Studies	Excel	PRiSM model - must have Gurobi license to run. Colstrip retire in 2035. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
17_PriSM_7.0_GUROBI_1207 20_IRP_Colstrip2045	PRiSM Model Files- Portfolio Studies	Excel	PRiSM model - must have Gurobi license to run. Colstrip retire in 2045. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.

18_PriSM_7.0_GUROBI_1207 20_IRP_2045 100 Delivered	PRiSM Model Files- Portfolio Studies	Excel	PRiSM model - must have Gurobi license to run. Not optimized, add clean resources and storage to meet delivery to load requirements. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
19_PriSM_7.0_GUROBI_1207 20_IRP_SCC_PS	PRiSM Model Files- Portfolio Studies	Excel	PRiSM model - must have Gurobi license to run. Social cost of carbon applied to net purchases, includes net purchase included storage purchases. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
20_PriSM_7.0_GUROBI_1207 20_IRP_EE-Avg Mrkt Emissions	PRiSM Model Files- Portfolio Studies	Excel	PRiSM model - must have Gurobi license to run. Use average market emission rate rather than incremental for EE SCC calculation, all other PRS inputs/constraints are the same, this study is conducted iteratively, meaning resulting EE is added back in the model to adjust loads and re-run. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources,

			demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
21_PRISM_7.0_GUROBI_120720_IRP_PRS_Draft_Maximum Benefit	PRiSM Model Files- Portfolio Studies	Excel	PRiSM model - must have Gurobi license to run. Washington maximum benefit. Includes a summary of resource selected, financial summary, clean goal progress, loads & resources, demand response, resource data, energy efficiency selected, Aurora resource results, transmission annual revenue requirement from amortization model, annual cost of resource options, resources (MWh), hydro & contracts market value, stochastic variable cost of risk, general assumptions, regional emissions, conservation load value (\$/MW) and new CapEx.
PRiSM Draft Results_120720	PRiSM Model Files- Portfolio Studies	Excel	Scenario list, summary data, sensitivity summary, sensitivity data, summary resources PRS, existing resources, annual summary by scenario, summary table of PVRR (\$ Mill) by state and select years, cost vs risk by scenario, clean goal, GHG emissions, avoided costs for SR/EE.
PRiSM Model Guide	PRiSM Model Files- Portfolio Studies	Word	User guide for the PRiSM models.
2021 IRP New Supply Side Resource Options	Appendix I	Excel	Supply side resource option assumptions for cost, size, availability.