RPM Input Matrix

SEVENTH NORTHWEST POWER PLAN

Element	Source	Resource Strategy OR Future?	Rule Summary Description	Details	Impact on RPM Results	Proposed Assumptions
Markets	RPM Policy Input OR Derived by RPM	Resource Strategy	Limits on Electricity Imports/Exports	How much out-of-region market electricity can be imported and how much regional electricity can be exported	High	Staff proposes using the historic Available Transfer Capability (ATC) from BPA Transmission for the COI + DC lines
Conservation	RPM Policy Input	Resource Strategy	Annual Limits on Conservation Resource Acquisition	How much conservation can be acquired in each year	High	EE ramp rates will be based on Council guidance at March meeting. Scenario's 4C and 4D are designed to test sensitivity of resource strategy to alternative pace/achievement of EE.
Conservation	RPM Policy Input	Resource Strategy	Annual Limits on Change in Conservation Resource Acquisitions	How much the potential acquisition of conservation can be accelerated/decelerated	High	EE ramp rates will be based on Council guidance at March meeting. Scenario's 4C and 4D are designed to test sensitivity of resource strategy to alternative pace/achievement of EE.
Markets	RPM Policy Input	Resource Strategy	Upper Bound (Backstop) Electricity Price	Cost of curtailment.	High	Based on Council guidance at March meeting. Staff recommends $10,000 MWh to ensure that resource strategies do not rely on curtailment.

Generation	RPM Policy Input	Resource Strategy	RPS Target Achievement Rate	This factor sets the fraction of state RPS obligations that are assumed to be achieved by the region	High	Based on Council guidance at March meeting. Staff recommendation will be based on analysis of state RPS requirements and utility positions relative to those requirements.
Conservation	RPM Policy Input	Resource Strategy	Resource Acquisition Decision Criteria	What are the economic criteria used to determine whether additional conservation resources are acquired	High	Economic build decisions are based on whether a generating resource has a lower levelized cost than a forecast of future wholesale electricity market prices. Forecast furture market prices are based on recent historical price trends.
Generation	RPM Policy Input	Resource Strategy	Resource Acquisition Decision Criteria	What are the economic criteria used to determine whether additional generating resources proceed with construction	High	Economic build decisions are based on whether additional EE acquisitions have lower levelized cost than a forecast of future wholesale electricity market prices. Forecast furture market prices are based on recent historical price trends.
Conservation and Generation	RPM Data Input	Resource Strategy	Adequacy Reserve Margins	What are the criterion used to determine whether additional conservation, demand response or generating resources are acquired to maintain system reliability	High	Staff recommends that Adequacy Reserve Margins for Energy and Capacity (ARM-E and ARM-C) for all scenarios, except 5B, derived from GENESYS using Regional Adequacy Assessment limits on imports by season (e.g., 2500 MW during winter). See 5B for description of alternative assumptions

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Load Forecast	RPM Data Input	Futures	Load Forecast Range	Establishes lower and upper bounds for load growth (pre-conservation)	High	Based on Council guidance at December 2014 and March 2015 meetings
Markets	RPM Data Input	Futures	Wholesale Market Price Forecast Range	Establishes lower and upper bounds for wholesale electricity prices	High	Based on Council guidance at November 2014
Markets	RPM Data Input	Futures	Natural Gas Market Price Range	Establishes lower and upper bounds for wholesale natural prices	High	Based on Council guidance at July 2014
Generation	RPM Data Input	Resource Strategy	New Generating Resource Characteristics	Determines the acquisition cost, dispatch cost, forced outage rate, fixed O&M, contribution of a resource to meet energy and peak, and . of new generating resources	High	Based on Council guidance at March 2015 meeting
Conservation	RPM Data Input	Futures	Conservation Resource Characteristics/Supply Curve	Determines the acquisition cost and load shape of energy efficiency resources	High	Based on Council guidance at March 2015 meeting

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Markets	RPM Data Input	Futures	Carbon Price/Emissions Limits	Sets either the market clearing price of carbon emissions or the upper limit on emissions.	High	Based on Council guidance on inputs for Scenarios 2-6. Staff recommends scenario 2C test carbon prices between $0 - $110 (in 2012$) and that these carbon prices also be used in all scenarios except 1A, 1B, 2A, 2B,3A and 3B.
Conservation	RPM Data Input	Resource Strategy	Conservation Availability Load Growth Scalar	This factor scales conservation potential with the load growth pattern occurring in each future tested.	Medium	Based on staff analysis of change in conservation potential between high, medium and low frozen efficiency load forecast
Conservation and Generation	RPM Policy Input	Resource Strategy	Electricity Price Smoothing Time	How much price history within a future should be used to evaluate cost-effectiveness for both conservation and generation	Medium	Staff recommends that RPM use 2 years
Generation	RPM Data Input	Resource Strategy	Existing Generating Resource Characteristics	Determines the dispatch cost, forced outage rate, fixed O&M, contribution of a resource to meet energy and peak needs of existing generating resources	Medium	Based on staff analysis of existing resource data
Demand Response	RPM Data Input	Futures	Demand Response Resource Characteristics/Supply Curve	Determines the acquisition cost, operating costs and load (capacity) impact of demand response resources	High	Based on Council guidance at March 2015 meeting

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Generation	RPM Policy Input	Resource Strategy	Maximum Optioned Capacity per Period	The maximum amount of capacity that can be added within a period	Low	Based on assessment of generating resources
Generation	RPM Policy Input	Resource Strategy	Maximum Optioned Capacity Total	The maximum capacity that can be optioned over the planning horizon	Low	Staff will run the model and look at trade-offs between feasibility of total builds and model outcomes
Markets	RPM Policy Input	Resource Strategy	Lower Bound Electricity Price	Cost of spill	Low	Staff proposes using $325 which is consistent with the Sixth Plan assumption.
Conservation	RPM Policy Input	Resource Strategy	Conservation Acquisition Cost Range	Limits the range of values that can be tested to determine the maximum acquisition cost for Lost Opportunity and Discretionary Conservation resources	Low	Staff recommends testing between -$100/MWh and +$100/MWh. This range may be expanded if the model results in close to optimal outputs at either boundary.
Generation	RPM Policy Input	Resource Strategy	Resource Addition Periods	Establishes the frequency at which resource addition decisions are considered by the model	Low	Staff recommends annual evaluation for first 7 years then biennial evaluation after that
Generation	RPM Data Input	Futures	Hydro-System Output (80 years)	Establishes hydro-system output	Low	Staff recommends using existing hydro run-off patterns from 80 years with no adjustment for climate change, except in scenario 6B

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