



UM 2143

Workshop – Staff’s Initial RA Findings

4-8-2022



Agenda



- Welcome
- Initial Results – Summary
- Background
- Analytical Approach
- Workbook Submittals
- Analytical Approach
- Findings
- Next Steps

	Timeline	Activity	Description
Phase 1	January 12, 2021	Public Meeting	Investigation Opened
	October 27, 2021	Workshop	Workshop to discuss Staff's straw proposals and the proposal to initiate a phased rulemaking process. Please notify Staff ASAP of conflicts with this workshop time.
	November 18, 2021	Comments	Written comments on Staff's proposals.
	December 14, 2021	Workshop	Discussion of data requirements related to RA informational filing
	January 25, 2022	Filing	LREs make initial informational filings.
	March 24, 2022	Comments (Staff Only)	Staff comments synthesizing informational filings, focusing on the status of resource adequacy in Oregon and implications for a state RA solution.
	April 8, 2022	Workshop	Workshop to review public, aggregate data and Staff's findings.
	April 14, 2022	Comments	All party comments in response to Staff's report, findings about appropriate next steps.
	May 17, 2022 Staff memo 5/12	Public Meeting	Staff Public Meeting recommendation to open a rulemaking (beginning in informal stage). Will include an updated straw proposal for the RA solution.
<i>Phase 2 dates are estimates, subject to Commission decision to open a rulemaking on May 19, 2022</i>			
Phase 2	June 1, 2022	Comments	Comments on Staff's updated straw proposal (will be attached to 5/19 PM memo).
	June 9, 2022	Workshop	Workshop to discuss Staff proposal and stakeholder positions.
	Jun 28, 2022	Comments	Final comments on Staff's proposal.
	July 19, 2022	Draft Rules	Staff circulates draft rules.
	July 28, 2022	Workshop	Workshop to discuss draft rules.
	August 15, 2022	Comments	All party final comments.
	September 20, 2022 Staff memo 9/1	Public Meeting	Public meeting to move to formal rulemaking.
	~90 days	Formal rules	Formal rulemaking concludes, implementation dockets can begin ~January 2023.
	Following Phase 2, launch implementation dockets and continue to monitor status of regional program development		

Initial Results - Summary



- From Staff Report:
“Initial Analysis does not signal need for near-term implementation of a binding Resource Adequacy program in Oregon.”
- Future Analysis
 - Analysis and review focused on regional resource adequacy programs
 - Investigation focus on complimentary resource adequacy framework at state level
 - Look for seams Issues
 - Leverage Oregon regulatory processes:
 - IRPs
 - Clean Energy Plans

Background



- Order 21-104 opened docket – January 12, 2021 Public Meeting
 - Outgrowth of UM 2024 – Resource Adequacy for direct-access customers
- Staff Workshops
 - August 16, 2021
 - Level setting – understanding of RA in region
 - October 27, 2021
 - Staff’s Straw Proposal presented
 - Comments from Stakeholders on proposal – November 11, 2021
 - December 14, 2021
 - Discussion of data requirements related to RA informational filing
- January 25, 2021 – most informational filings received from LREs
 - Based on WPP (FKA NWPP) workbooks
 - IOUS – Idaho Power, PacifiCorp, Portland General Electric
 - ESS’s - Avangrid Renewables, Calpine Solutions, Constellation New Energies, and Shell Energy North America

Analytical Approach



Initial approach – data

- Data – leverage WPP workbooks
 - Loads
 - Resources
- Modeling – use PRAS: Probabilistic Resource Adequacy Suite
 - NREL Resource Adequacy model
 - Can be used stochastic or deterministic modes
 - Input files hourly basis .csv format
- Preparing files for PRAS offered opportunity for outboard analysis
 - Deterministic outlook, simplifying assumptions

Workbook Submittals

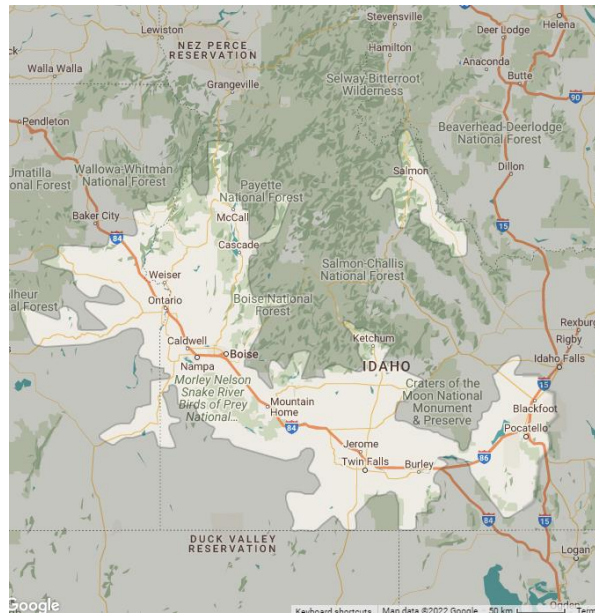


- Tabs for loads
 - Ten years (2010-2020) of historic loads on an hourly basis
 - Projections for six years of summer and winter peak (2022-2027)
- Tabs for resources
 - Storage hydro
 - Demand Response
 - Wind
 - Solar
 - Run-of-River Hydro
 - Contracts – Purchases and Sales
 - Other Resources – dispatchable resources
- Outage Data
 - Maintenance, forced, immediate or delayed
 - GADs Performance data

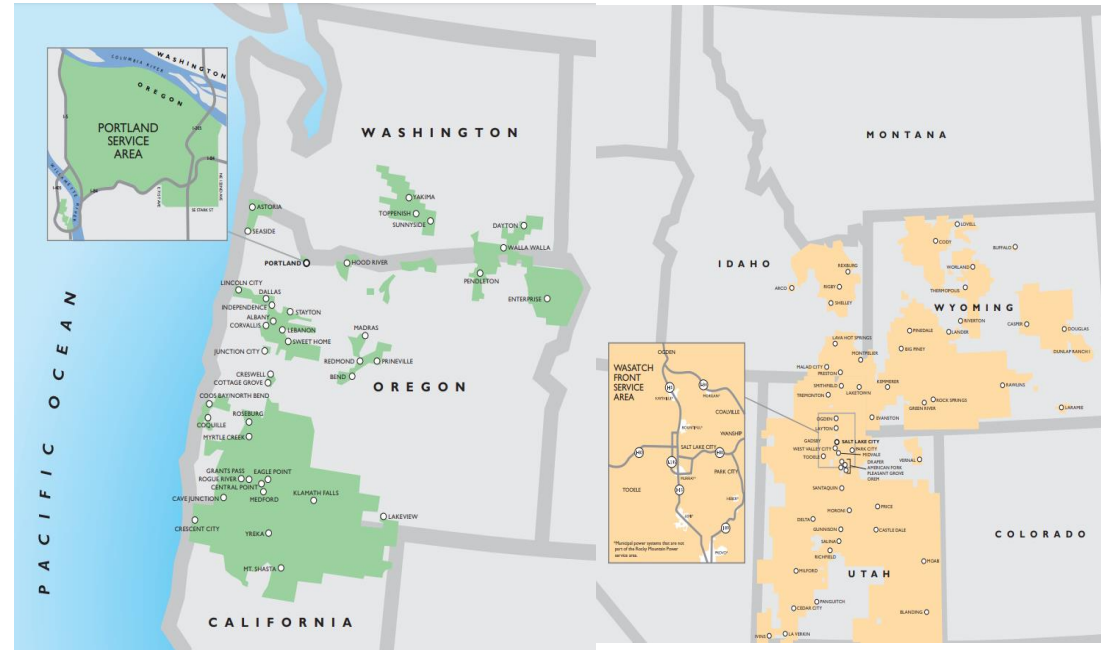
Workbook Submittals



Service Area covered in analysis



Idaho Power Service Area



Pacific Power and Rocky Mountain Power Service Territories



Portland General Electric Service Area

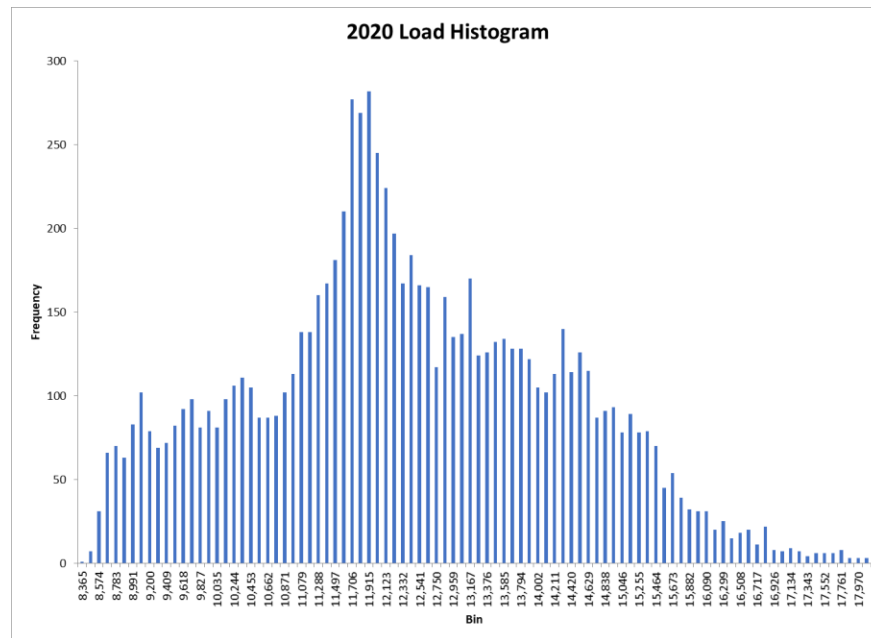


Analytical Approach



Load Projections

- Calculated Ratio of Peak to hourly demand
- Used average ratio for most recent five years (shorter series if 5 years not available)
- Applied average ratio to peak projections
- If no peak projections used average hourly demand for most recent three years



Load Projection Example

Hour	Load	Load/Peak ratio	Projected Load Projected Peak * Load/Peak Ratio
1	100	0.588235	105.9
2	90	0.529412	95.3
3	90	0.529412	95.3
4	100	0.588235	105.9
5	110	0.647059	116.5
6	130	0.764706	137.6
7	140	0.823529	148.2
8757	130	0.764706	137.6
8758	120	0.705882	127.1
8759	110	0.647059	116.5
8760	100	0.588235	105.9
1. Peak	170		
2. Projected Peak	180		

Analytical Approach



Variable Resource Projections

- Historic data provided
 - Individual Units
 - Fleet level
- Expectations based on historic data when provided
- For units without historic data used fleet level, or nearby unit for projections
 - Fleet Level expectations, or
 - Nearby unit of same ownership
- Process used for wind, solar, run-of-river hydro

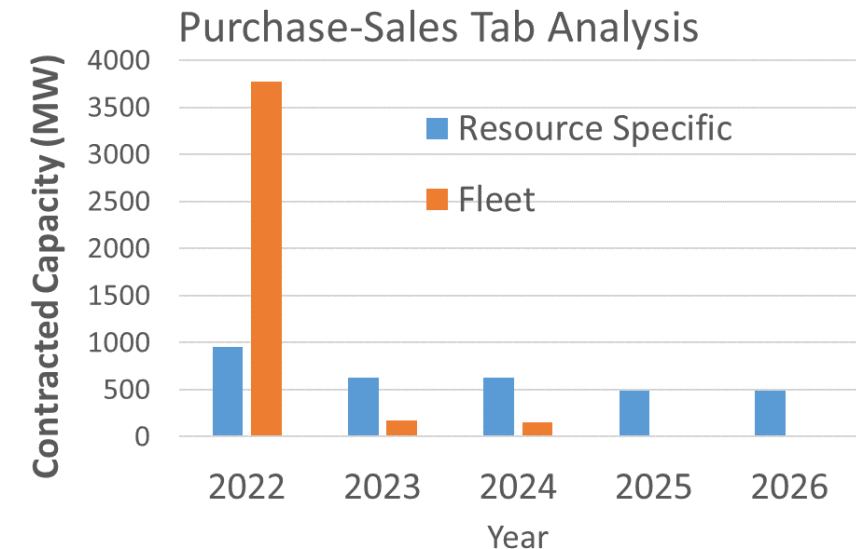
12 X 24 VER Expectations																								
Month\Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Jan																								
Feb																								
Mar																								
Apr																								
May																								
Jun																								
Jul																								
Aug																								
Sep																								
Oct																								
Nov																								
Dec																								

Analytical Approach



Dispatchable resources

- Deterministic look derated thermal capacity
 - Consistent with rolling average FOR as submitted to OPUC
 - No planned maintenance assumed
- Dispatchable storage hydro treated as fully available
 - Capacity matched with monthly values provided
- Contract Resources
 - If tied to specific variable resource (wind/solar) made use of 12X24 curves
 - If based on 'fleet' did not derate
 - Assumption that contractually fully obligated to deliver vs unit-specific contract
- Demand Response – not incorporated for deterministic look
- Storage not optimized

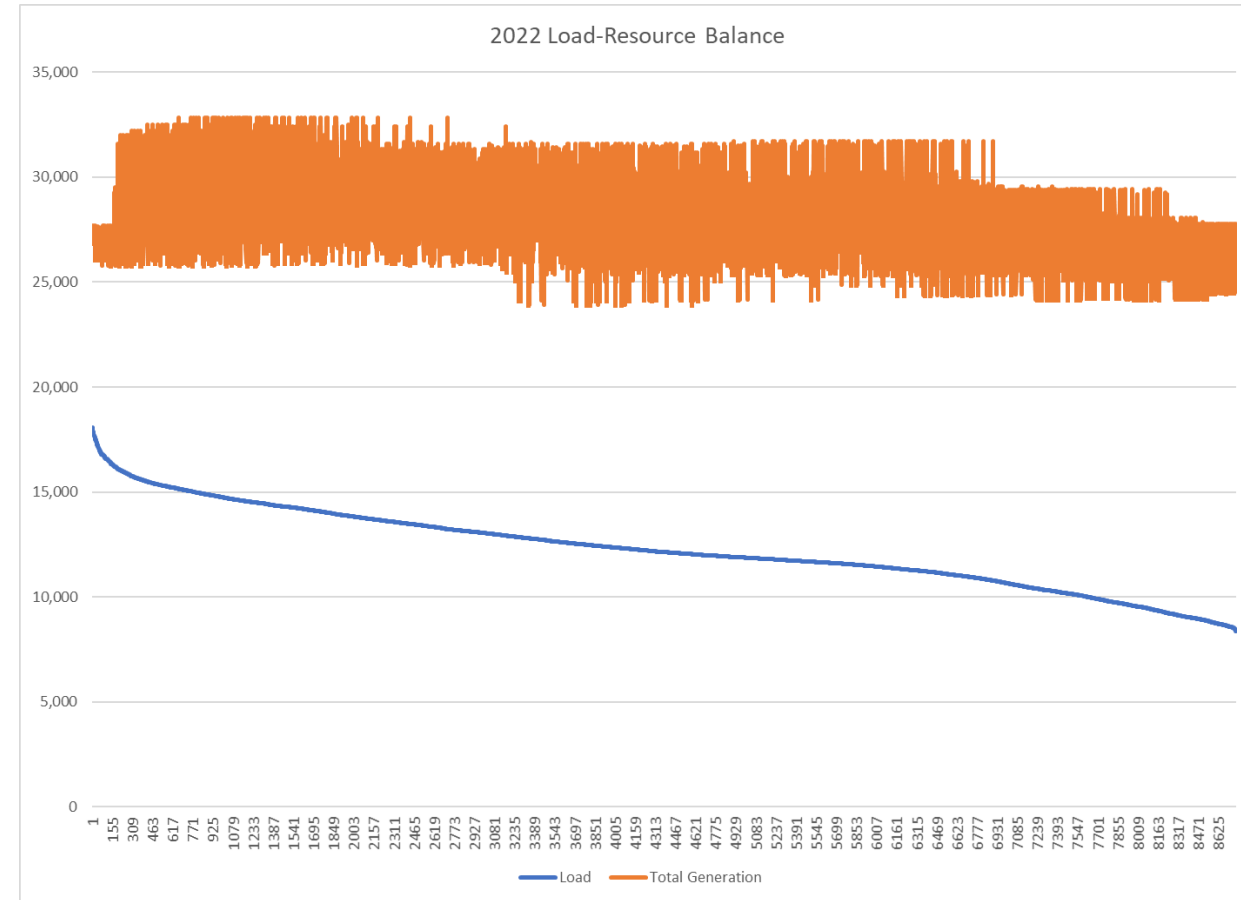


Findings



- Load-duration Curve
 - Stacked highest demand -> lowest w/corresponding generation
- Peak hour – July 29, 5:00 pm
- Tightest hour – August 1, 3:00 pm
- Resources exceeded load by approximately 50% for both hours across the analysis

Year	Date	Load (MW)	Generation (MW)	Excess Generation
2022	July 29, 5:00 pm	18,074	27,609	53%
	August 8, 3:00 pm	17,517	26,064	49%
2027	July 29, 5:00 pm	18,805	28,095	49%
	August 1, 3:00 pm	18,228	26,788	47%



Findings



- From data provided, and analysis performed – no need for immediate Commission action.
- Staff does not see an immediate need for additional resources – with caveats
 - No transmission modeling
 - Modeled with simplifying assumptions
 - Analysis on an aggregate level, as opposed to an LRE level
- Analysis did not examine all NW utilities – no implications for regional RA
- Additional analysis on data submitted unwarranted at this point.

Next Steps



Focus on the long-term solution approach provided in the October 15, 2021, Staff filing

- Implementing planning-focused RA standards at state level
 - IRP models can address issues Staff's analysis did not address
 - Transmission
 - Stochastic analysis
 - Resource optimization
- Adopt a LOLE RA standard by rule
 - 1-in-10 LOLE
 - Standard over 5 years?
- Compliance filings
 - IRP or acknowledged update
 - Clean Energy Plan
- Examine other issues
 - Seams issues – who is planning for long-term opt outs?
- Approach should compliment other regional adequacy programs (WRAP)

Next Steps - Timeline



Current schedule

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Closing



Thanks for Participating