



Northwestern Energy ETAC Meeting # 8

2025 MT IRP Planning Cycle

August 28th, 2025



Agenda

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Introductions/Welcome (15 min)



Asset Management VP Comments (30 min)



Stake Holder Working Group (15 min)



Scenario/Sensitivity Updates (15 min)

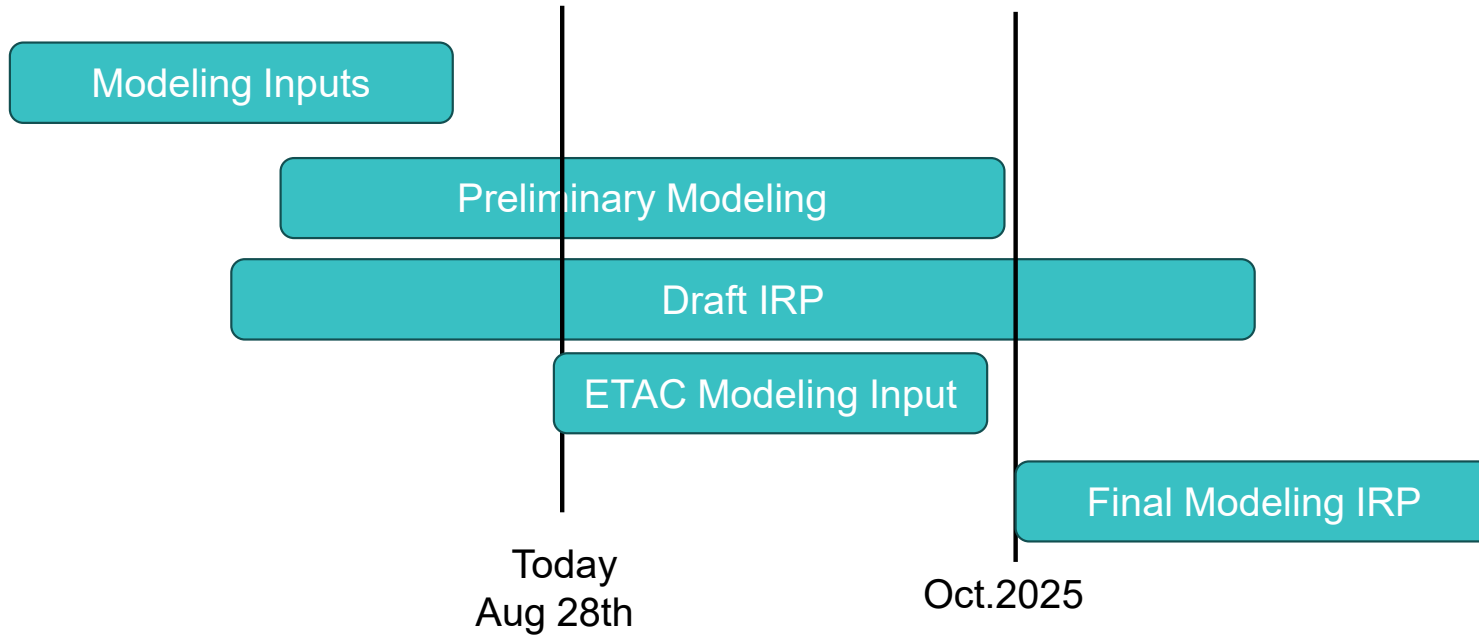


PowerSimm ARS Preliminary Results (90 min)



Questions/Comments (15 min)

Timeline – High Level (see detailed workplan)





Asset Management VP Comments



Stakeholder Working Group

Stakeholder Working Group

Meeting Date: 07/10/2025 10:00 AM – 4:00 PM

Location: Butte General Office Building: 11 E Park Street, Butte MT 59701

Participants

Olson, Megan (Meeting Organizer, NWE)

Shafer, Jon (NWE)

Stajcar, Matthew (NWE)

Barnheiser, Quintin (NWE)

Seitz, Brandt (NWE)

Fitzmaurice, Nicholas (MEIC)

Glenn, Evora (City of Missoula)

Morris, Robert (Montana Technological University)

Matson, Gary (Matson's Laboratory)

Unruh, Kyle (RNW)

Goldman, Derek (NWE)

Leuthold, Jack (Northern Plains)

Mayo, Sheryl (Quantica)

Stakeholder Working Group

Balanced Portfolio

Discussed different scenarios and data in the Vibrant Clean Energy (VCE) study.

NWE Comments: VCE considered all Montana generation, not just NWE owned generation.

Transmission

Stakeholder Comments: Transmission should be considered in how it could contribute to capacity through regional load and resource diversity

Social Cost of Carbon

Stakeholder Comments:

- Social cost of carbon (SCC) and carbon tax are not necessarily the same
- SCC is an economic consideration that should be captured.
- SCC is a potential regulatory risk that should be considered.
- Carbon cost is difficult to capture in a model; considerations are not necessarily quantitative.
- Other environmental impacts are important to consider but hard to quantify, e.g. mining resources, nuclear waste, recycling turbines or panels, etc.
- Greenhouse gas emissions should be considered.

NWE Comments: Nailing down a reasonable value for SCC is difficult. Different scenarios are attempting to provide the same outcome.

Scenarios and Sensitivities

Stakeholder Comments: A midterm Colstrip retirement scenario would be helpful as all the current scenarios are early in the planning period.

Tax Credits

Stakeholder Comments: Energy storage costs seem high. Make sure consultant is making appropriate considerations in terms of technological advancements.



Scenarios/Sensitivities Updates

Scenarios for 2026 MT IRP (as understood today)

- A. Base Case – Colstrip retires December 31, 2042.
- B. Colstrip retires June 30, 2029, according to MATS.
- C. Colstrip complies with MATS using baghouse on July 1, 2030. Colstrip retires December 31, 2042.
- D. Colstrip retires December 31, 2031, according to GHG.
- E. Colstrip retires December 31, 2035.

Sensitivities for 2026 MT IRP

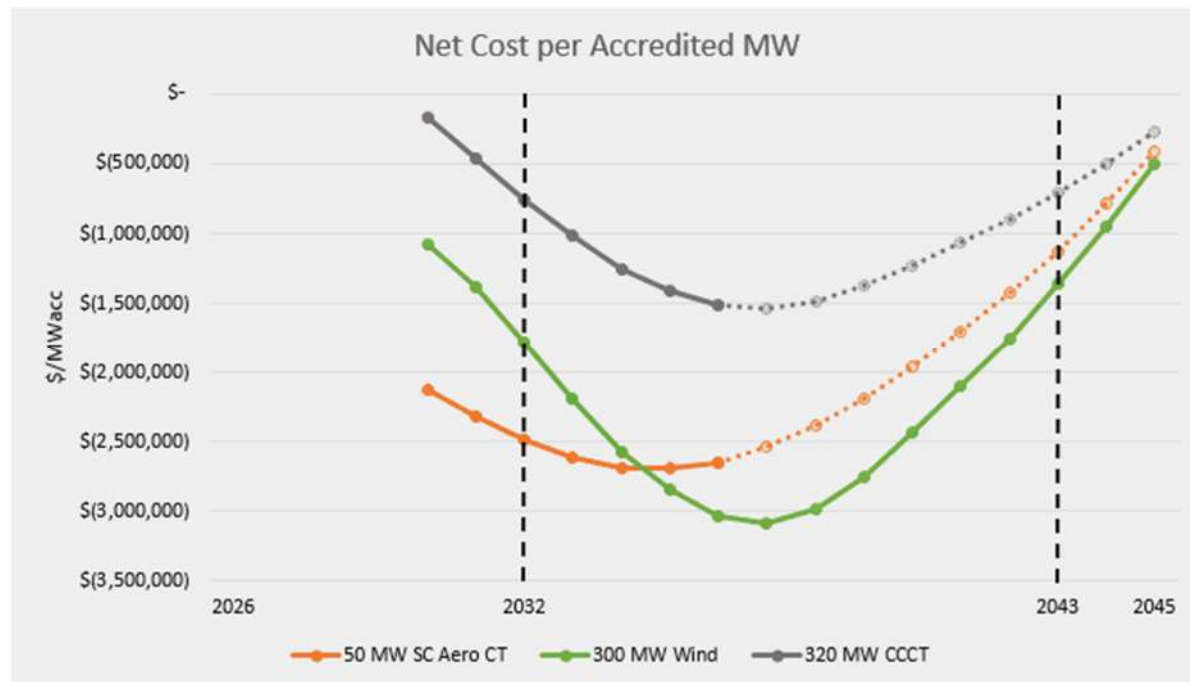
- F. 50% power costs.
- G. 150% power costs.
- H. 50% natural gas costs.
- I. 150% natural gas costs.
- J. 150 MW of additional data center load
- K. 650 MW of additional data center load
- L. 1160 MW of additional data center load
- M. Allow carbon emitting resources after 2035 (PSC request from 2023 IRP)
- N. Only allow carbon free resources to be selected in ARS
- O. Simulate no Colstrip acquisition from Puget Sound
- P. Simulate no Colstrip acquisition from Puget Sound or Avista
- Q. Add 300 MW of North Plains Connector transmission project
- R. Increase the amount of DSM and NEM in the load forecast



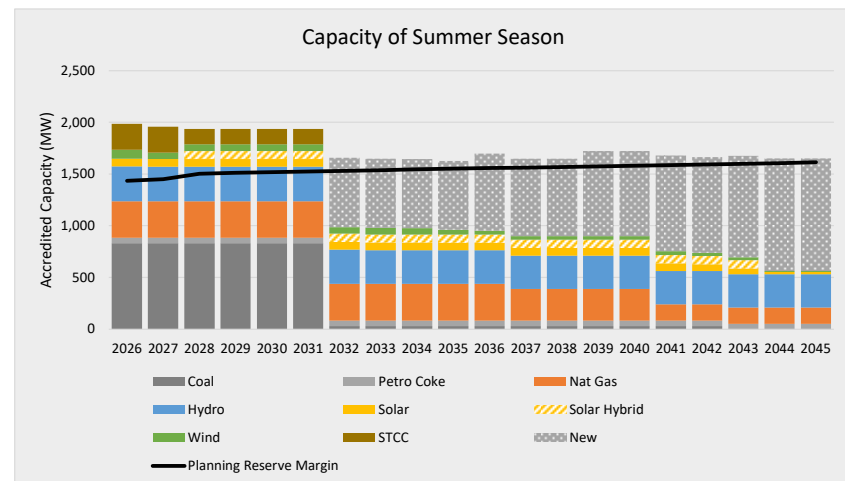
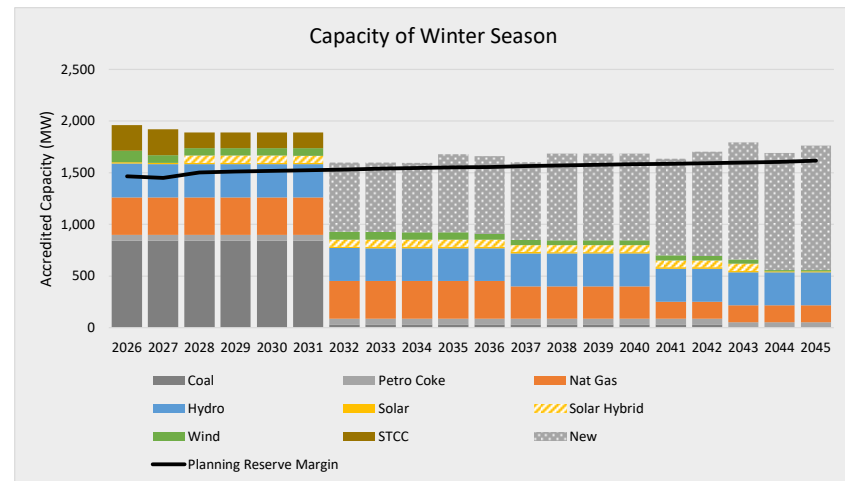
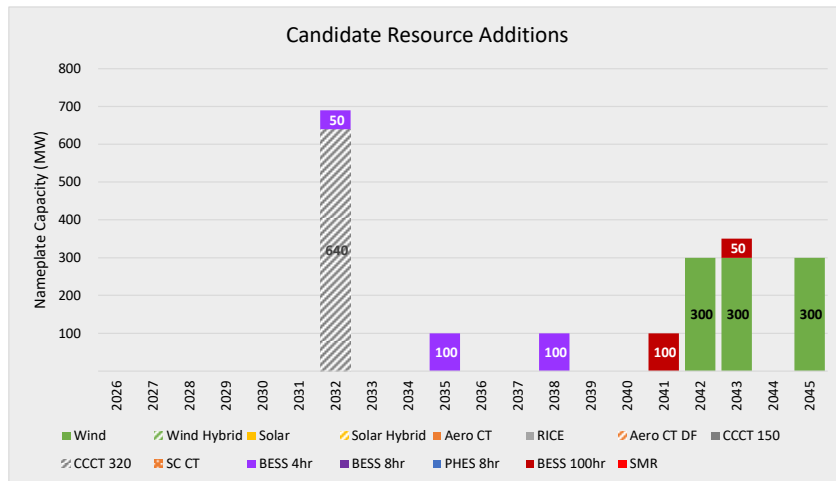
PowerSIMM Example Portfolios for discussion

Resource Comparison Methodology in ARS

- $$Net\ Cost\left(\frac{\$}{MW_{acc}}\right) = \frac{PV(NetRevenue_{year_n:year_{20}}) - PV(AnnualRevReq_{year_n:year_{20}})}{MW_{acc}}$$



Example Portfolio for a 2031 Colstrip retirement w/ 2035 Net Zero Goal





Questions/Comments?