Stakeholder Working Group Meeting 1

June 9, 2025

SWG Meeting # 1 Agenda

- **9:00 – 9:20**: WELCOME!
- **9:20 – 9:30**: Stakeholder Working Group
- **9:30 – 10:00**: Kick Off & 2023 IRP Feedback from Stakeholders
- **10:00 – 10:30**: Integrated Least-Cost Resource Planning and Acquisition
- **10:30 – 10:45**: Break
- **10:45 – 11:05**: Modeling Scenarios
- **11:05 – 11:20**: Candidate Resources
- **11:20 – 12:00**: Activity!
- **12:00 – 1:00**: Lunch – 2026 IRP Workplan Handout
- **1:00 – 1:30**: Load Forecasting
- **1:30 – 2:00**: DSM
- **2:30 – 3:00**: Western Resource Adequacy Program
- **3:00 – 3:15**: Break
- **3:15 – 3:45**: Transmission Overview
- **3:45 – 4:00**: 2026 IRP Workplan Review

WELCOME!

Introductions – NWE Team

- John Carmody – Director of Asset Management
- Energy Supply Planning Team
  - Jonathan Shafer
  - Megan Olson
  - Matt Stajcar
  - Quintin Barnheiser

Stakeholder Working Group – Members

- Tell us one thing about yourself
- AND what interested you in applying for this working group.

Stakeholder Working Group

Stakeholder Working Group

The objectives of the working group are to:

- Create an open dialogue around NorthWestern Energy's IRP.
- Provide the opportunity to share diverse opinions on the planning process, analysis, and contents of the IRP.
- Offer a forum for deep discussions on assumptions, supporting studies, methodologies, portfolios, sensitivities, and analytics that inform the IRP development, including the tradeoffs inherent in integrated resource planning.
- Collaborate on how diverse perspectives and approaches can advise and benefit NorthWestern Energy's IRP.

Kick Off

Today's Discussion

Purpose:

To bring together a range of insights and priorities to help shape a balanced, forward-looking plan that serves our customers, communities, and the grid on the 2026 Integrated Resource Plan.

Acknowledging Our Diversity of Thought

- We recognize that stakeholders bring different values, experiences, and expectations.
- Some may prioritize cost, others sustainability, reliability, or economic development.
- All voices are essential in building an informed path forward.

Our Approach Today

- Focus on listening and understanding.
- Create space for constructive disagreement.
- Identify areas of common ground and clarify areas that need further exploration.

Our Expectation of Stakeholders

- Engage Constructively – Share your perspective but also listen with openness to others.
- Be Candid and Respectful – We welcome critical feedback and questions, delivered in a spirit of collaboration.
- Contribute to Solutions – Help identify risks, tradeoffs, and opportunities we may not have considered.
- Stay Grounded in the Process – When possible, connect comments to data, assumptions, or planning criteria.
- External Communications: While members are free to express their opinions, they are asked not to speak to the media or external groups on behalf of the working group to ensure that the group can meet its mission, objectives, and commitments.

Let's Begin With:

What values or concerns are most important to you as we consider the future of our energy system?

2023 IRP Feedback from Stakeholders

Major Themes from 2023 MT IRP Comments

1. Inaccurate Modeling and Cost Assumptions
2. Resource and Technology Treatment Concerns
3. Climate and Environmental Issues
4. Stakeholder Engagement and Transparency
5. Market Participation and Policy Considerations
6. Methodological Issues in IRP
7. Missed Opportunities for Tribal and Community-Based Energy

Integrated Least-Cost Resource Planning and Acquisition

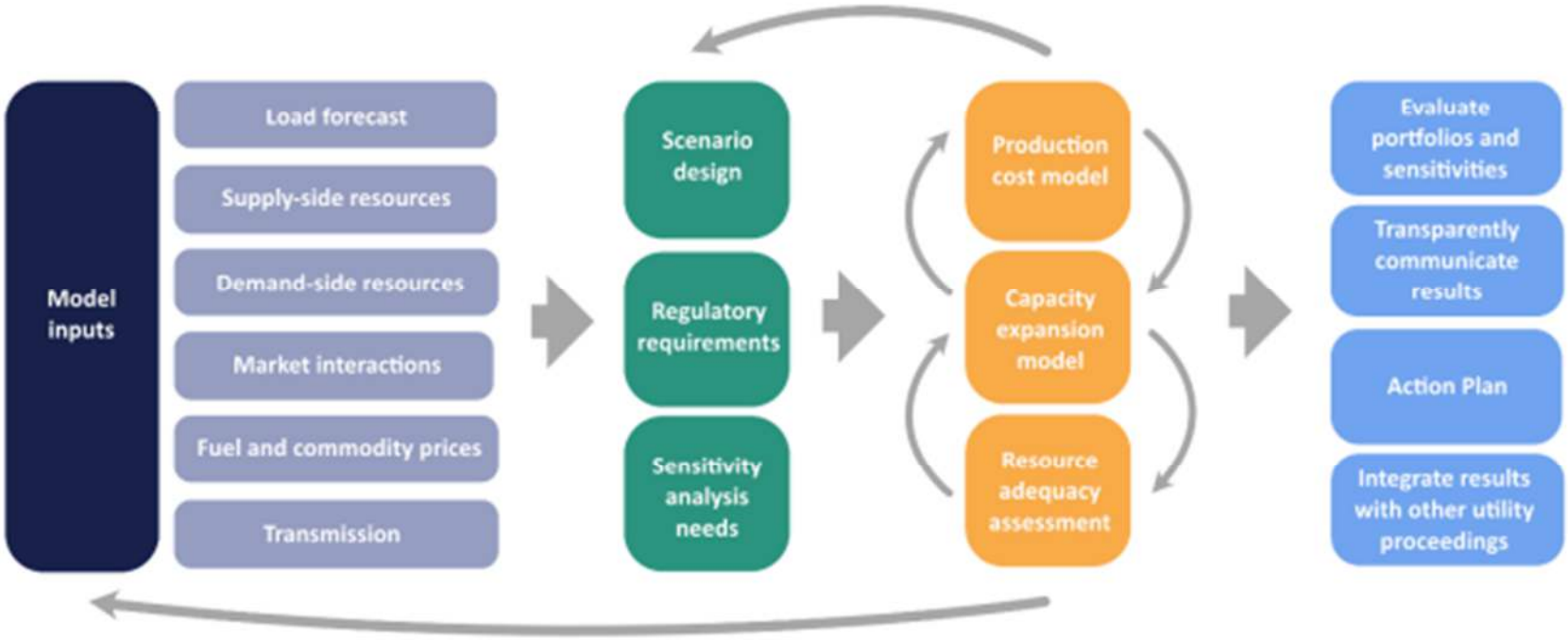
History – How did we get here?

- **Pre 2000s: Deregulation**
  - NWE Become a default supplier for customers who did not choose alternative supplies.
  - Resource planning primary focused on short-term procurements.
- **2003-2007: Procurement Planning and Preapproval**
  - House Bill 509 in 2003 put together a PSC process to assist in procurement plans in response to energy reliability and costs.
- **2007: Re-regulation and Emphasis on Long-Term Planning**
  - HB 25 re-instated NorthWestern Energy as a fully regulated utility, which put emphasis on reliable and cost-effective electric supply.
- **2019: Transition to Least-Cost Resource Planning an Acquisition:**
  - HB 597: Develop 20—year resource plans every three years. Take into consideration supply and demand side resources.
- **2023: Updates to Administrative Rules for Integrated Resource Planning**
  - ARM 38.5.20XX were updated to introduced detailed requirements for needs assessments, resource availability, transparency modeling and scenario analysis.

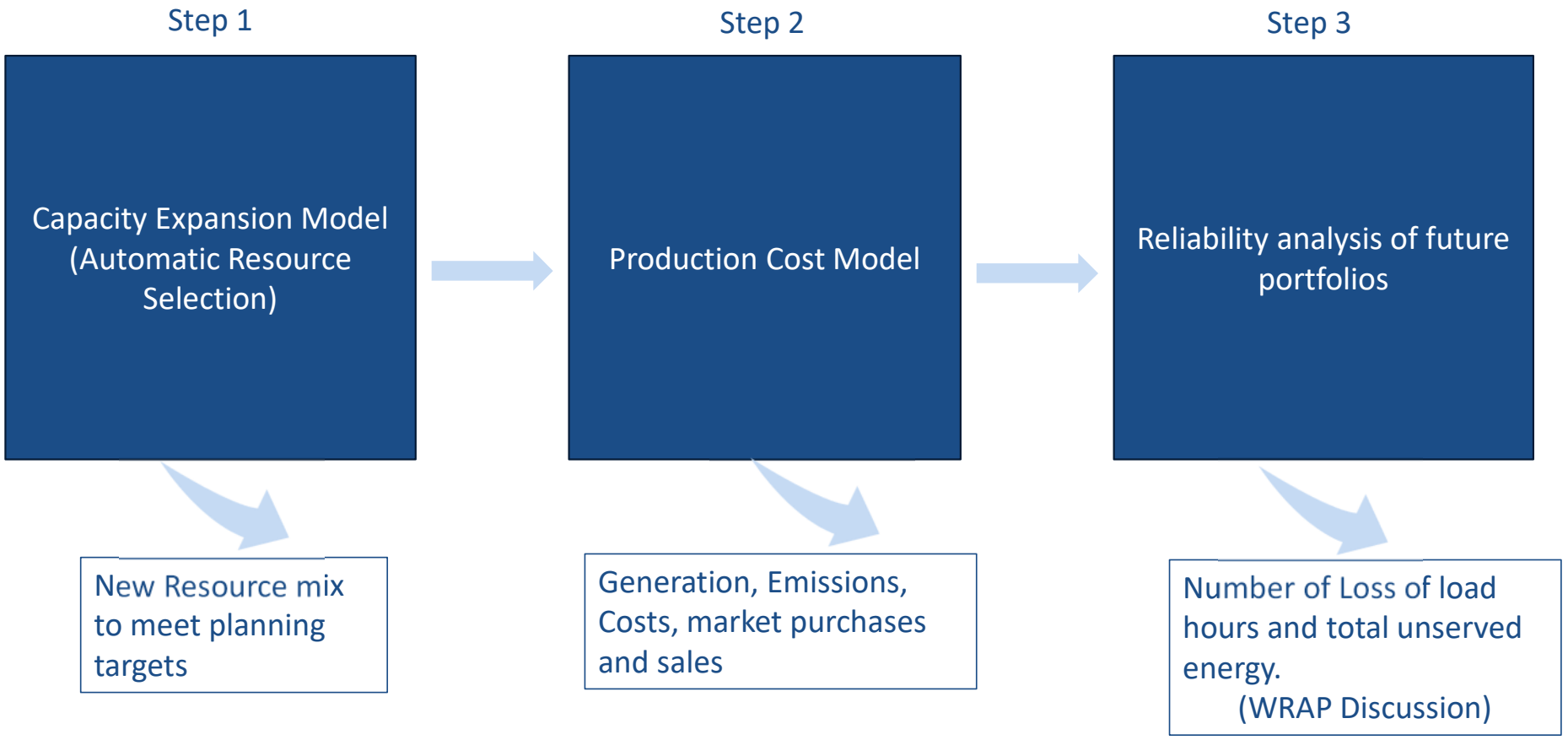
What is an Integrated Resource Plan?

- **Purpose:**
  - Provides a roadmap to inform the development of an adequate energy supply portfolio for the coming years.
  - The plan presents an evaluation of different potential resource portfolios that would meet the needs of our Montana electric customers reliably, safely, and affordably over a twenty-year time horizon.

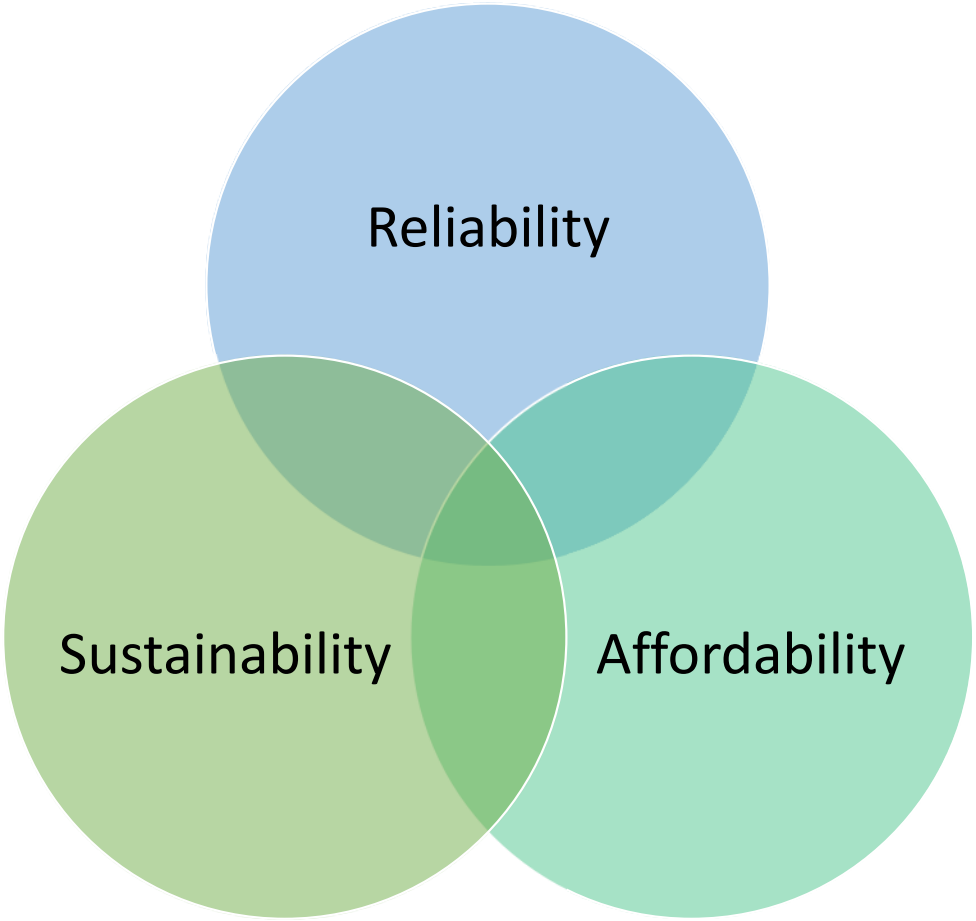
Planning Process



Resource Planning Modeling Steps

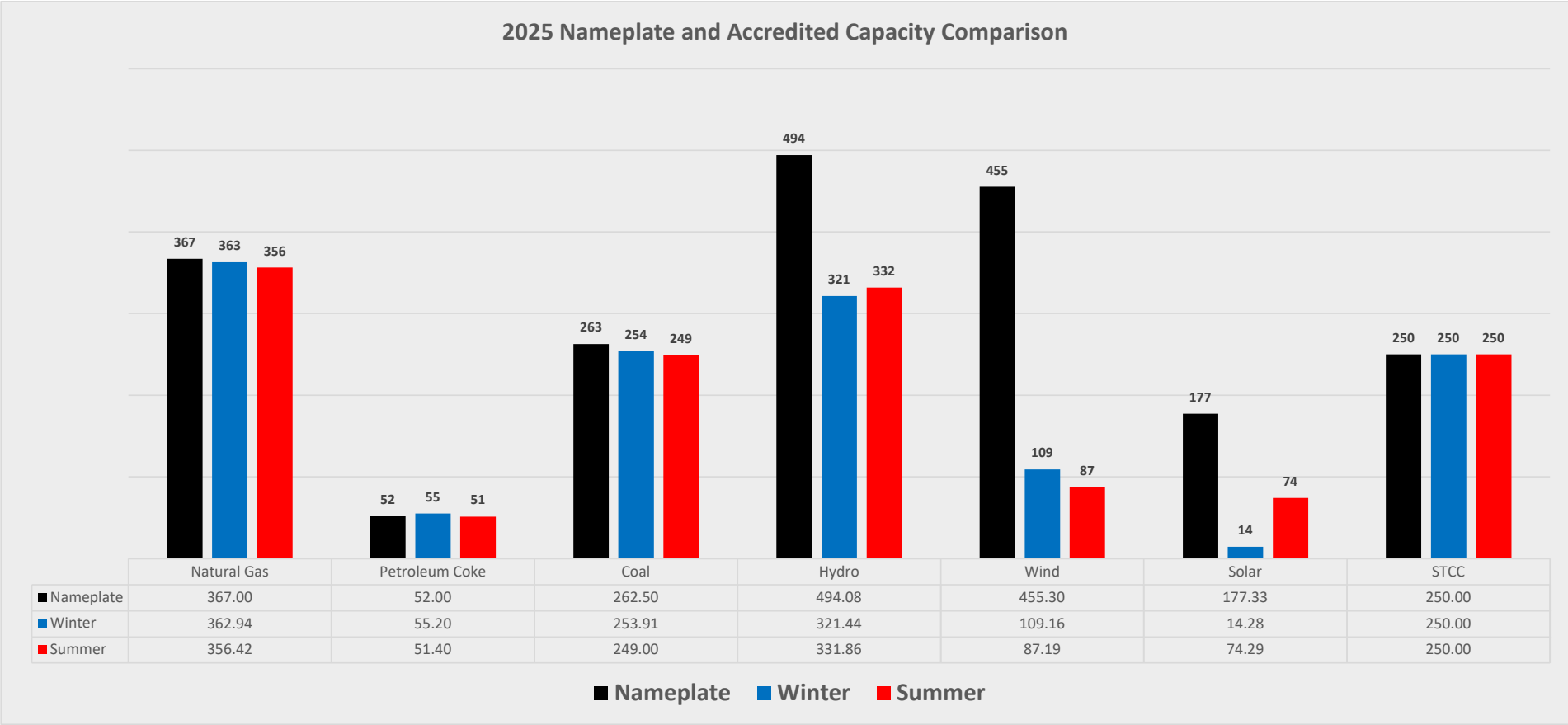


What do these three core principles in energy mean to you and what level of importance of each item?



Modeling Scenarios

Current Portfolio:



	Natural Gas	Petroleum Coke	Coal	Hydro	Wind	Solar	STCC
Nameplate	367.00	52.00	262.50	494.08	455.30	177.33	250.00
Winter	362.94	55.20	253.91	321.44	109.16	14.28	250.00
Summer	356.42	51.40	249.00	331.86	87.19	74.29	250.00

Base Portfolio

- NorthWestern's current generation portfolio
  - Includes 222 MW Avista acquisition and 370 MW Puget acquisition in Colstrip Units 3 and 4 starting January 2026
    - Colstrip operates through 2042
  - Does not include QF's without signed PPA as NorthWestern cannot accurately project which QFs will ultimately sign and be constructed

Proposed 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.

Proposed Base Case Sensitivities for 2026 MT IRP

F. ARS (Automatic Resource Selection) allows carbon emitting resources to be selected after 2035. (per MPSC comments from 2023 IRP)

G. 50% power costs.

H. 150% power costs.

I. 50% natural gas costs.

J. 150% natural gas costs.

K. Proposed data center load(s).

Candidate Resources

Draft IRP Candidate Resources

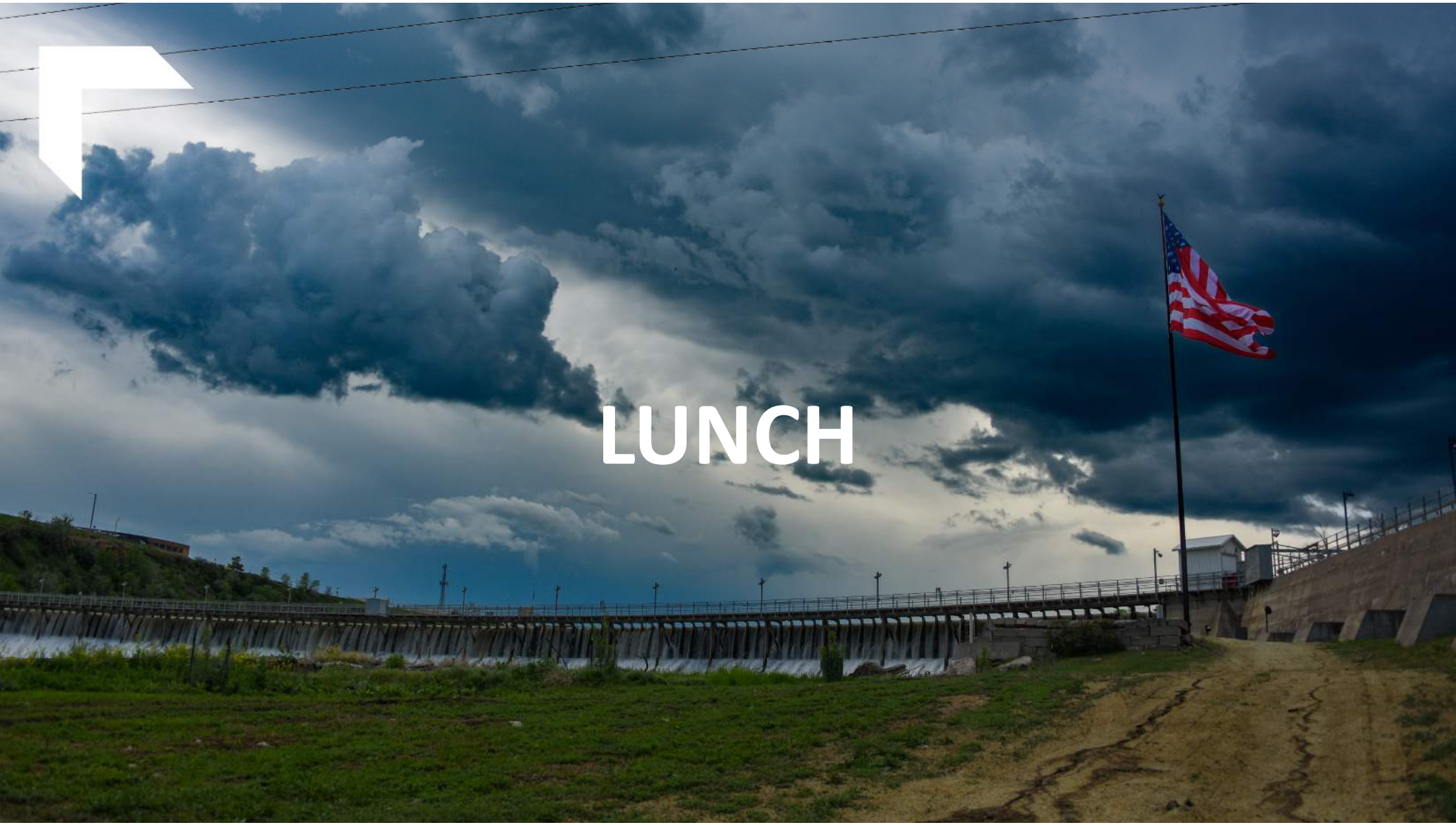
Thermal	Renewables	Energy Storage	Hybrids[1]
Nuclear SMR 320 MW	Solar 300 MW	BESS Li-ion 100 MW, 4h	Solar 100 MW, BESS 50 MW 4h
RICE 100 MW	Wind 300 MW	BESS Li-ion 100 MW, 8h	Solar 100 MW, BESS 100 MW 4h
Dual Fuel RICE 50 MW		Iron Air 50 MW, 100h	Wind 100 MW, BESS 50 MW 4h
Aero 100 MW		Pumped Hydro 100 MW, 8h	Wind 100 MW, BESS 100 MW 4h
Dual Fuel Aero 50 MW			
Frame CT 200 MW			
CCCT 150 MW			
CCCT 320 MW			

SMR – small modular reactor
RICE – reciprocating internal combustion engine
CT – combustion turbine
CCCT – combined cycle combustion turbine
BESS – battery energy storage system
Note 1 – hybrids will be limited to the BESS capacity at the point of interconnection

Activity

Notes:

- The activity is a simplified model for ***discussion and concept exploration***.
- The activity is historical looking and is *not* a planning tool.
- Cost estimates were from EIA and have not been updated with the candidate resource costs.


LUNCH

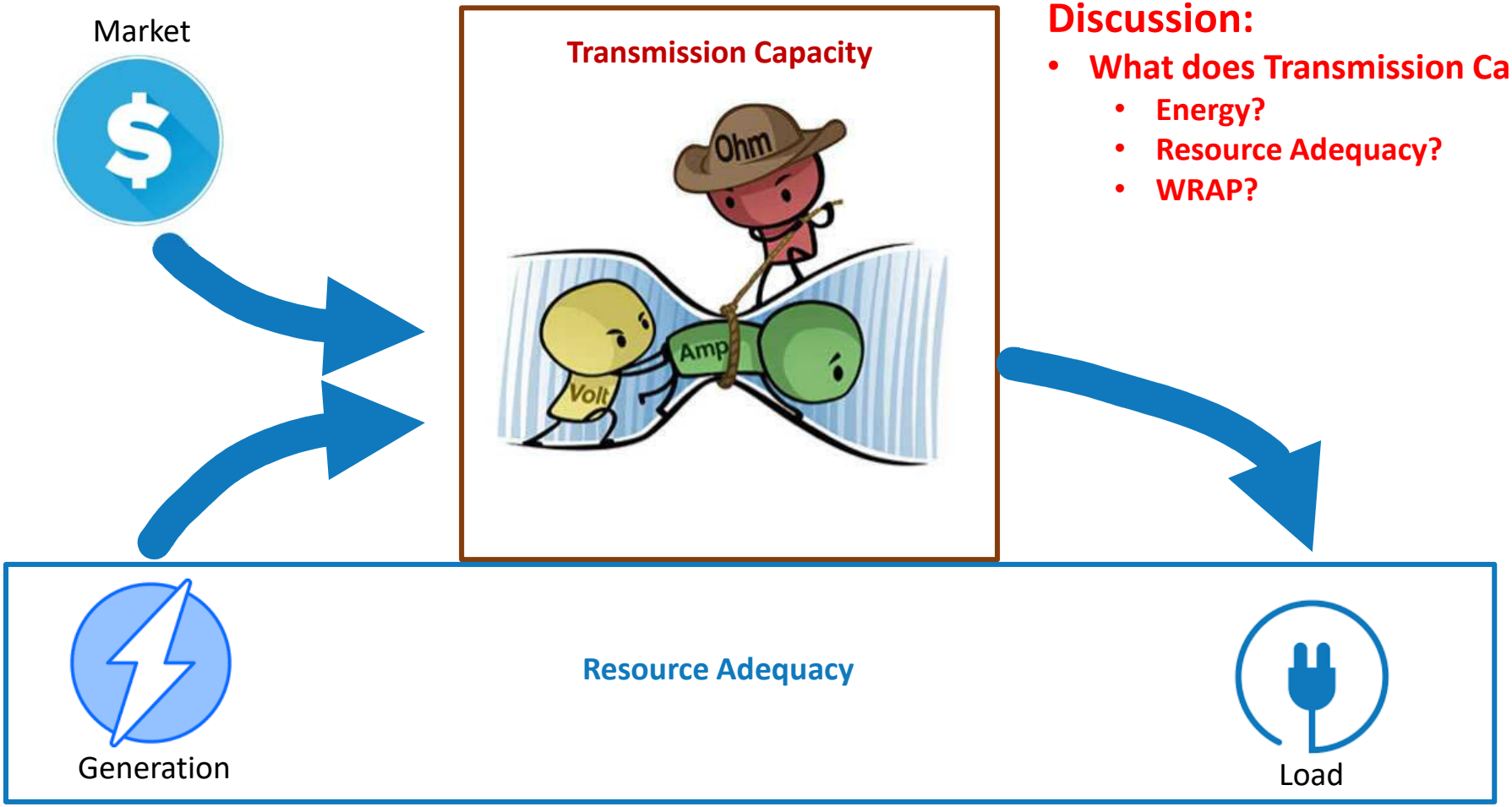
Load Forecasting

DSM

Western Resource Adequacy Program (WRAP)

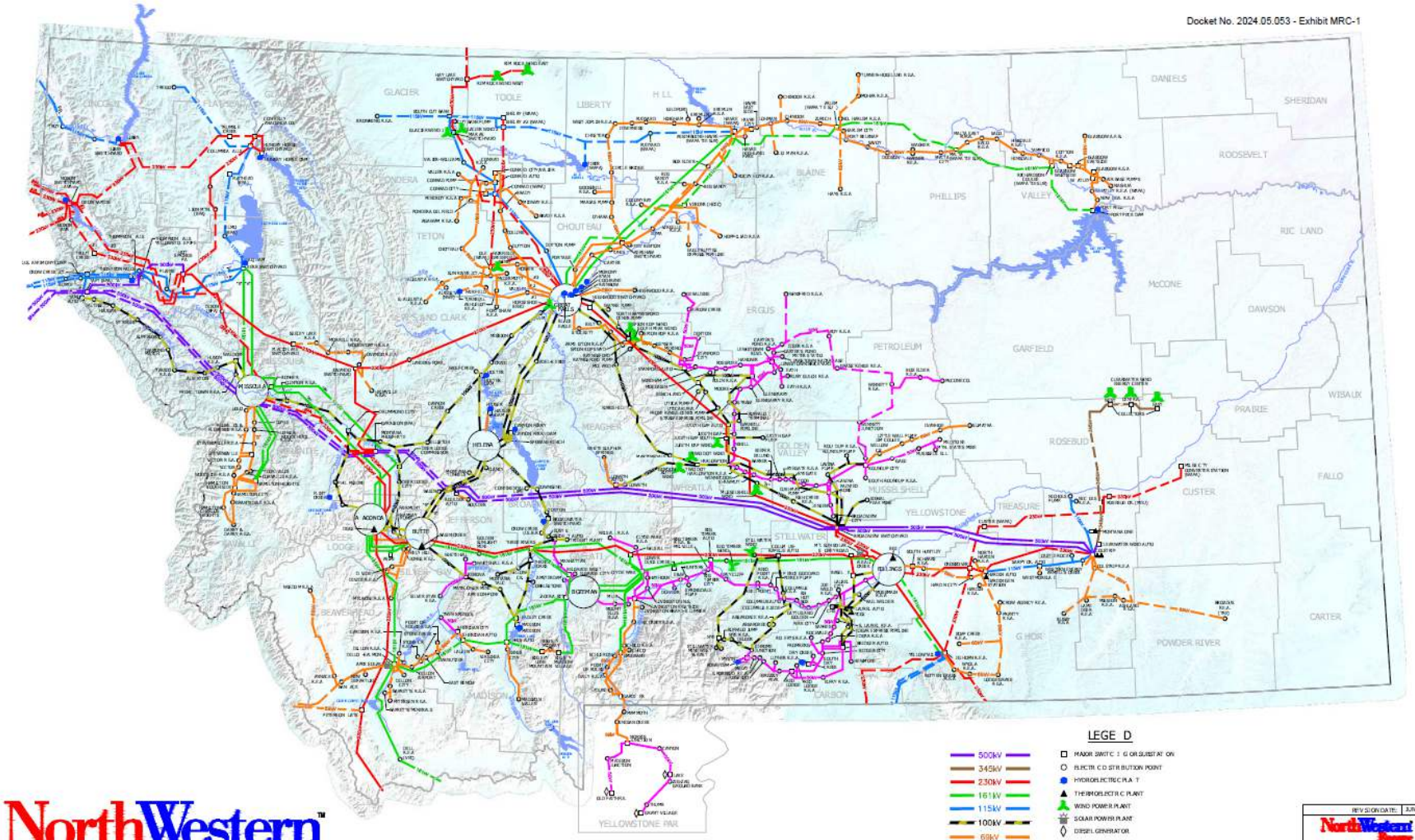
Electric Transmission Overview

Transmission and Resource Adequacy



Discussion:

- **What does Transmission Capacity Do?**
  - **Energy?**
  - **Resource Adequacy?**
  - **WRAP?**



NorthWestern™ Energy

Electric Transmission System

REVISION DATE: JUN 2024

NorthWestern Energy

ELECTRIC TRANSMISSION SYSTEM ONE-LINE DIAGRAM

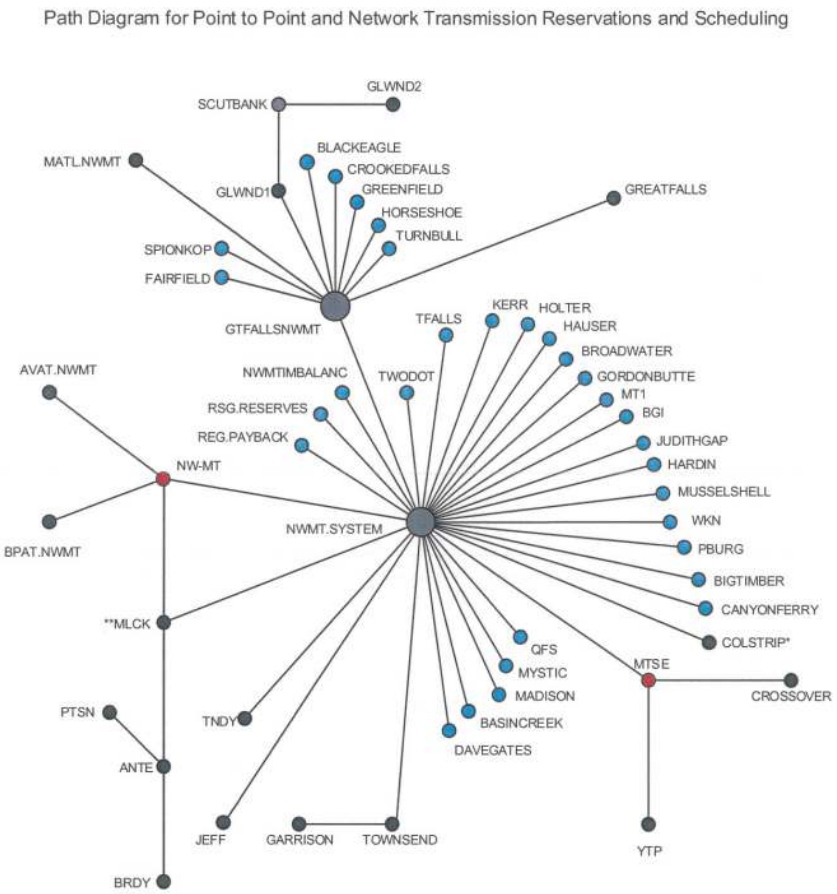
DRAWING NUMBER 41735-C2 REV 42

SHEET 1A ACAD

41735-C002-19 REV 42

Transmission Ownership

Transmission Reservations and scheduling (simplified)



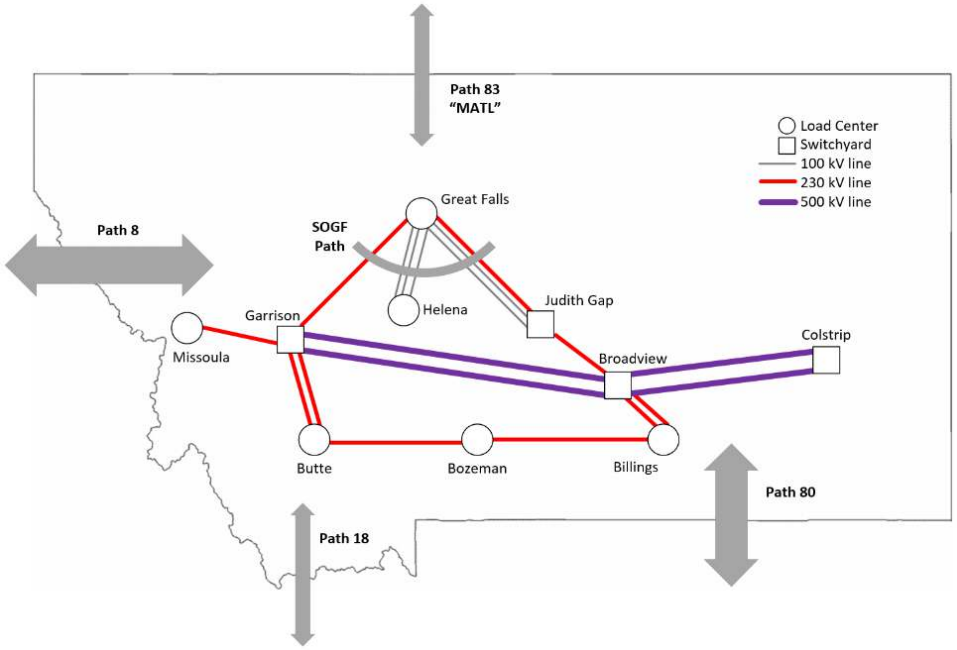
- OATT:
  - Open Access Transmission Tariff. It's a foundational document in U.S. electricity markets that outlines the terms and conditions under which electric transmission service is provided by a transmission-owning utility to others (e.g., generators, load-serving entities, marketers).
- TTC:
  - Total Transfer Capability (TTC): total designed and approved transfer capability of a transmission path.
- ATC:
  - Available Transfer Capability (ATC): available transfer capability is the amount of transfer capability left after considering firm commitments of the Transmission provider.
- Firm
  - Firm services are commitments that can sum up to the total transfer capacity. Firm transmission is released if not scheduled. This becomes available non-firm transmission. This service, whether used or not, comes with a cost.
- Non-Firm:
  - Energy that is scheduled at a lower priority that has not been reserved.

Generators are scheduled to load (ie. NWEMT.SYSTEM)

Do NWE customers automatically get Firm Capacity?

PowerSIMM and Draft Constraints

- PowerSIMM is *not* a powerflow model.
  - It is modeling a signal node for generation and a signal node for load.
  - Sets limits to buy/sell energy.



Year	Import MW[1,2]	Export MW[1,2]
2026	178	530
2027	178	580
2028	228	610
2029	226	610
2030	226	610
2031+	306	610

Note 1 – Yearly firm available transfer capability (ATC) by year (as of 4/29/2026)
Note 2 – Import and export capacity on a non-firm basis can be greater than firm capacity.

Northern Plains Connector

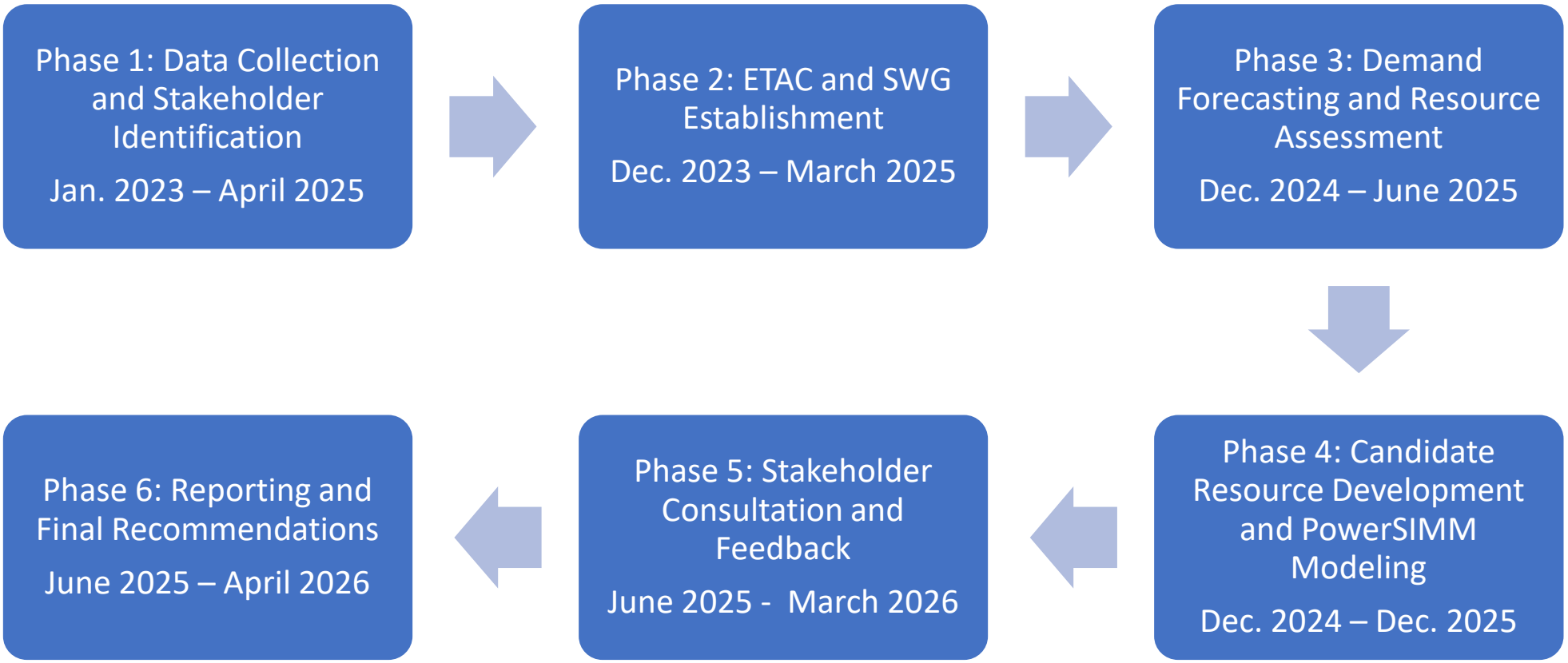
- Discussion:
  - What are your comments on the benefits of the Northern Plains Connector?

2026 IRP Workplan Review

2026 MT Workplan

- Requirements in MCA
- Key Components of Integrated Least-Cost Resource Planning and Acquisition:
  - Load Forecasting
  - Existing Portfolio
  - Candidate Resources
  - Resource Adequacy
  - Price Forecasting
  - Market Interactions
  - Transmission
  - Regulatory Framework
  - Risk
- Serves as a guide for completing the assessments and preparing plan contents required in ARM 38.5.2022

2026 MT Workplan Timeline



Feedback/Comments

- **Online Form (preferred method):**
  - IRP Feedback Form posted on NorthWestern's Montana electric supply planning website (link below)
    - **https://www.northwesternenergy.com/about-us/gas-electric/montana-electric-supply-planning/feedback-form-electric-supply-meeting**
  - Each submission should include:
    - Name and affiliation
    - Contact information
    - Specific question or comment
    - Reference to category (e.g., Planning Process, Forecast, Markets, Transmission, Modeling Inputs, Candidate Resources, Cost Analysis, etc.)
    - Indication if a response is requested
- **Email:**
  - Preferred for ETAC and Stakeholder Comments Only
  - Email**:** **nweetac@northwestern.com**

Questions?

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