



NorthWestern Energy's Energy Update

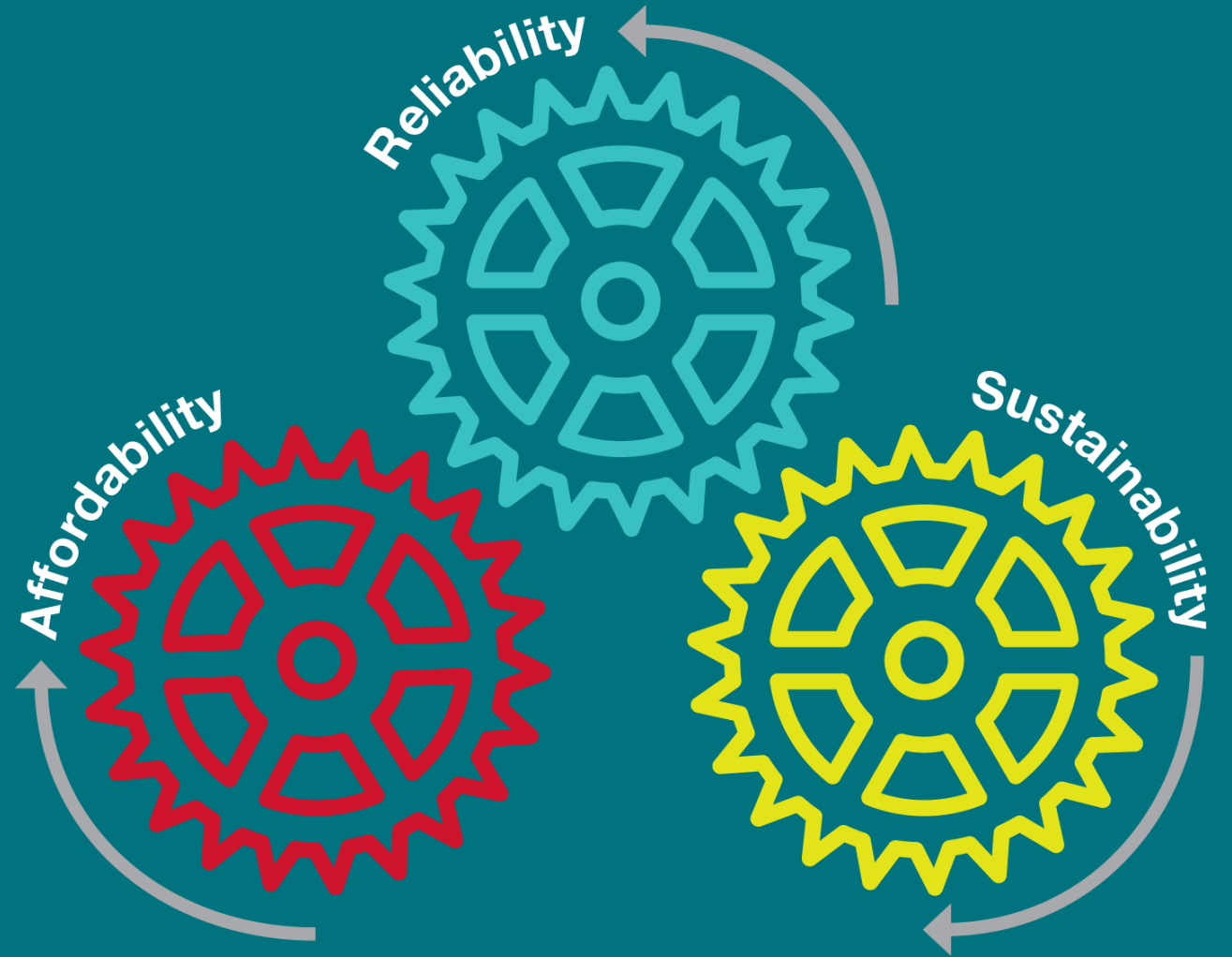
Transition to the Future: Balancing Reliability,
Affordability, and Sustainability of Energy Supply



BBER – January 2024

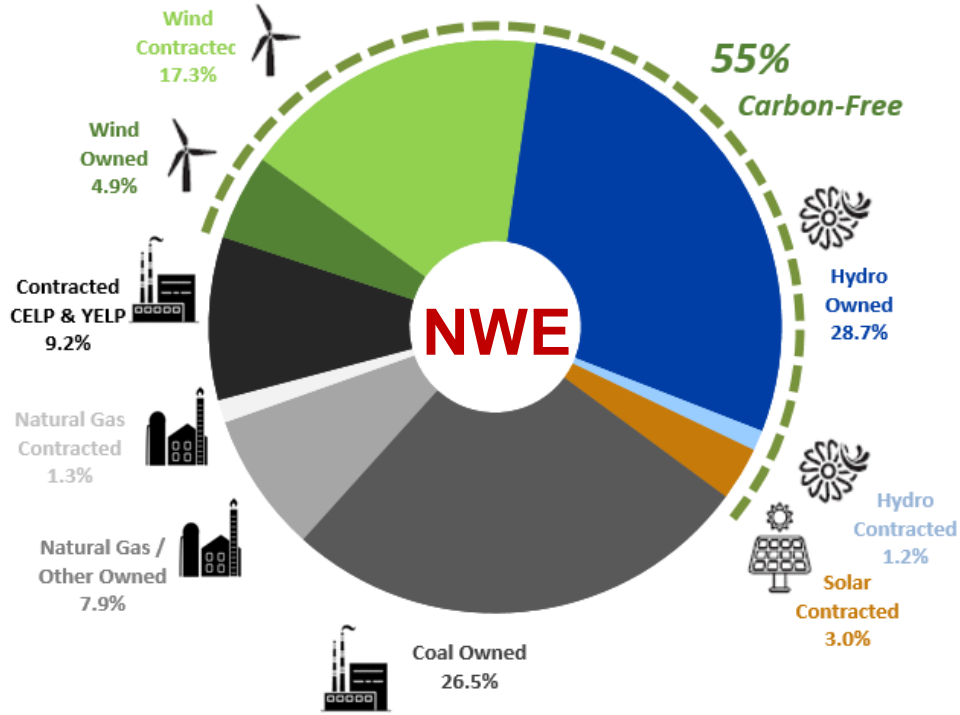
What Does a Reasonable Transition to Green Energy Look Like?

- ✓ Meeting obligations for safe, reliable service
- ✓ Making cost-effective investments to protect customers and keep rates affordable
- ✓ Responding to climate change through clean energy investments
- ✓ Doing the right thing for our employees and communities

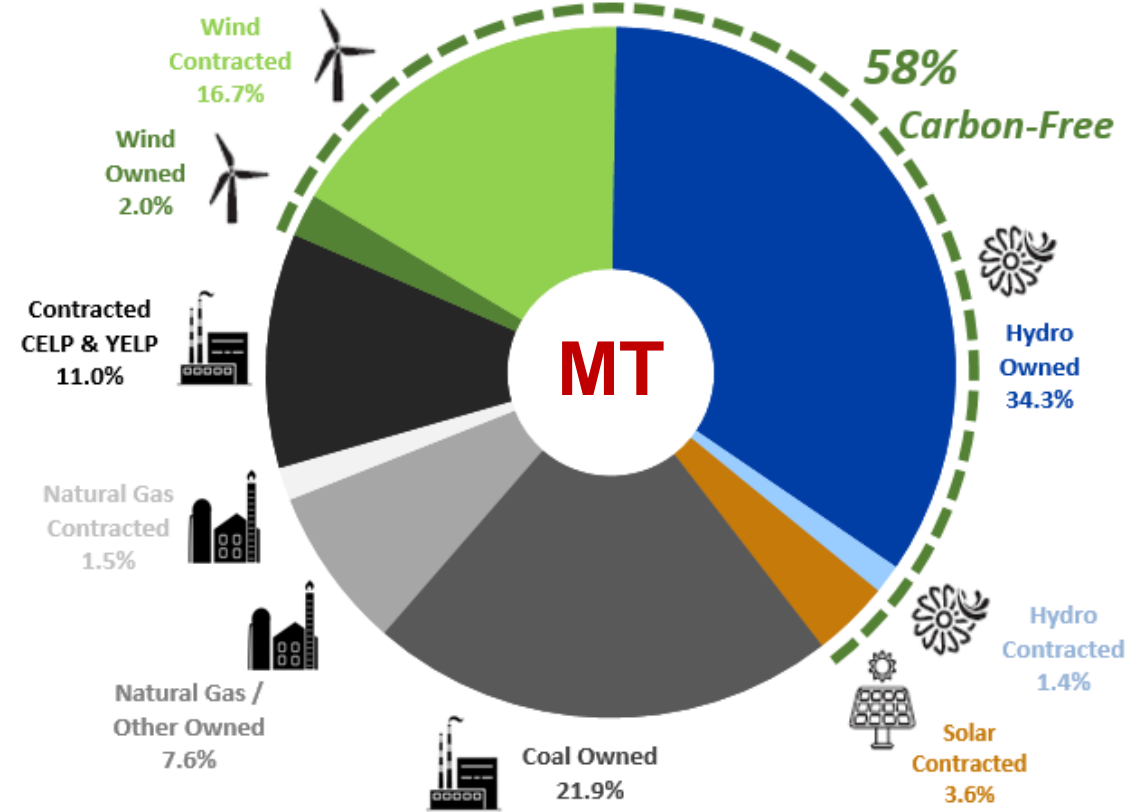


Sustainability - Highly Carbon-Free Supply Portfolio – Especially in MT

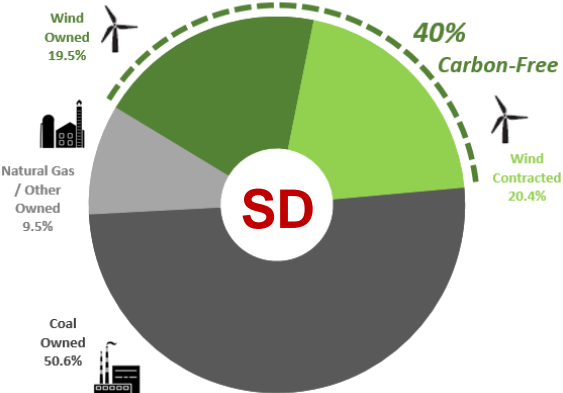
2023 Electric Generation Portfolio - Total NWE



2023 Electric Generation Portfolio - Montana



2023 Electric Generation Portfolio - South Dakota



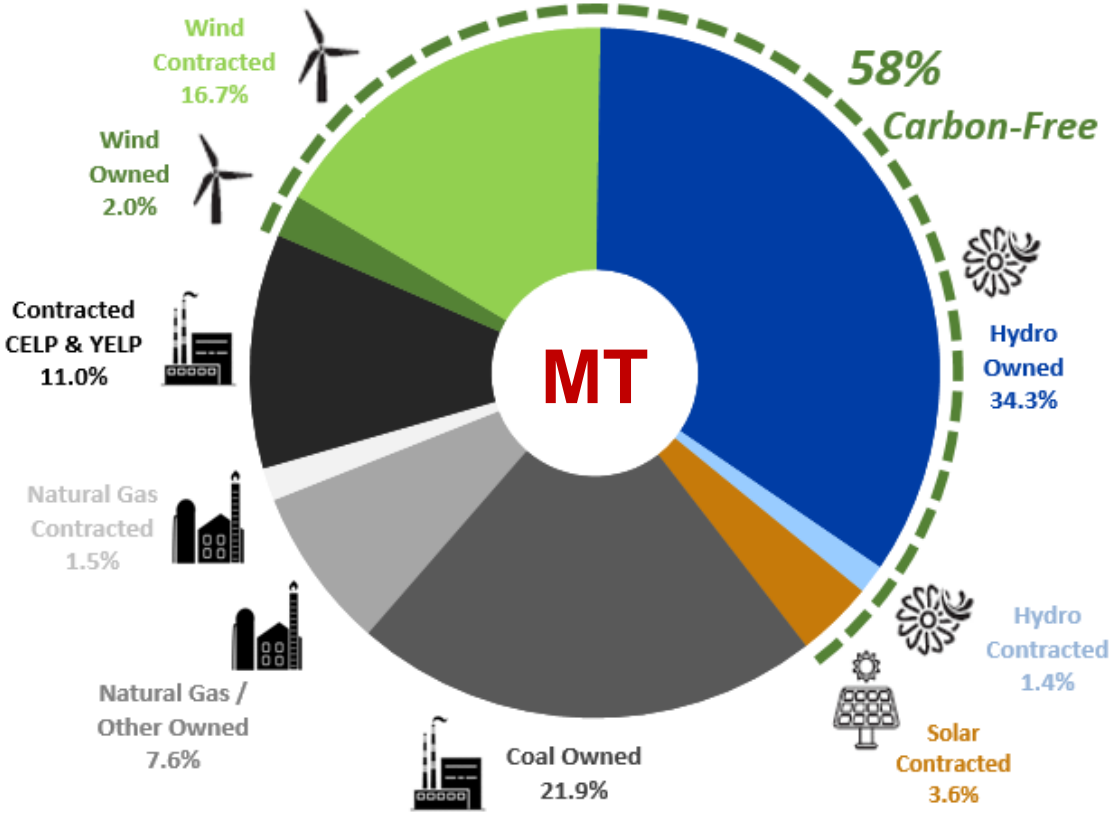
Contracted energy from Colstrip Energy Limited Partners (CELP), Yellowstone Energy Limited Partners (YELP) as well as a majority of the contracted wind, hydro and solar are federally mandated Qualifying Facilities, as defined under the Public Utility Regulatory Policies Act of 1978 (PURPA).

NorthWestern does not own all the renewable energy certificates (RECs) generated by contracted wind, and periodically sells its own RECs with proceeds benefiting retail customers. Accordingly, we cannot represent that 100% of carbon-free energy in the portfolio was delivered to our customers.

Based upon 2023 MWh's of owned and long-term contracted resources. Approximately 55% of our total company (58% in MT) of owned and contracted supply is carbon-free – better than the national average of ~40% in 2022. (eia.gov table 7.2b)

Carbon-Free Supply Portfolio Better than National Average

2023 Electric Generation Portfolio - Montana



Based upon 2023 MWh's of owned and long-term contracted resources. Approximately 58% of our owned and contracted supply in Montana is carbon-free – better than the 2022 national average of ~40%.

NorthWestern Energy - 2022 Electric Portfolio



U.S. Electric Utilities - 2022 Net Electric Generation



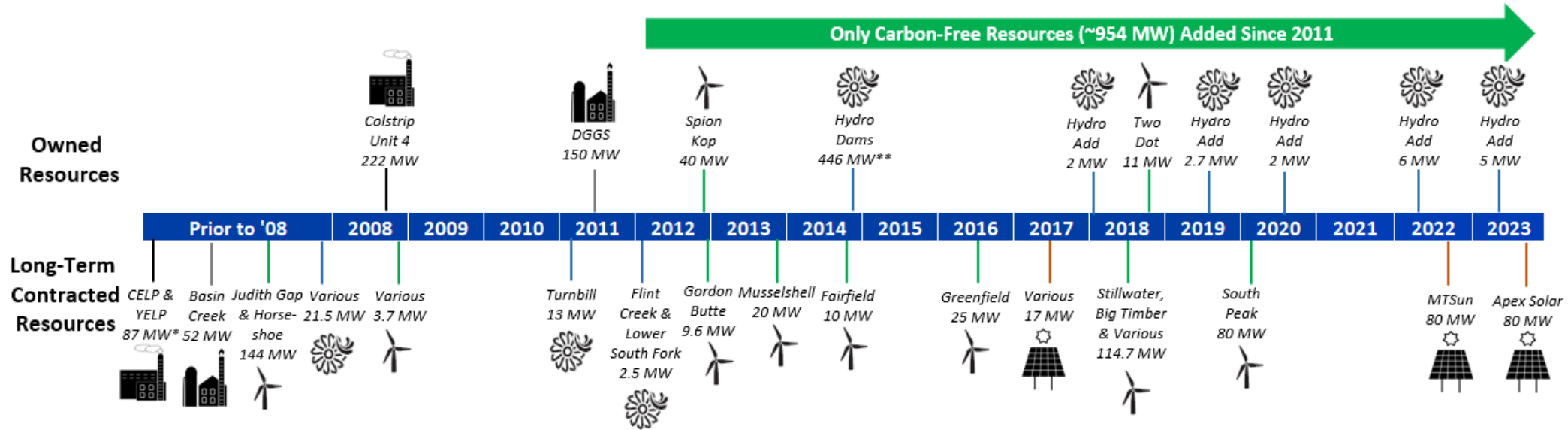
Source: EIA.gov Table 7.2b Electric Net Generation: U.S. Electric Power Sector - 2022

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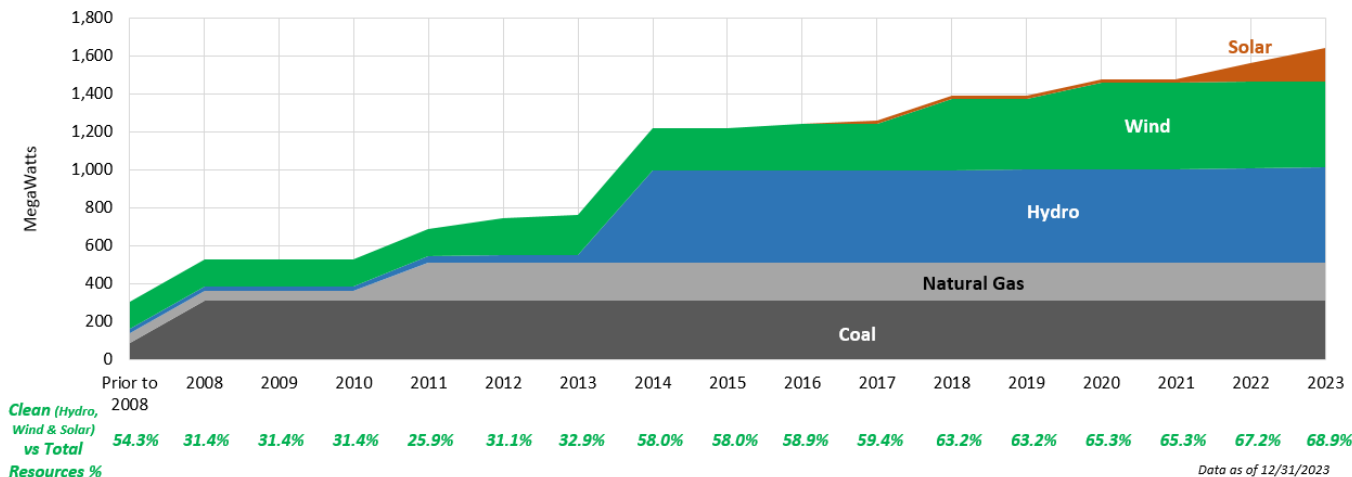
Timeline of Montana Generation Portfolio

NorthWestern Energy - Montana Owned & Long-Term Contracted Electric Portfolio by Capacity






* Federally mandated Qualifying Facilities contracts with CELP (Colstrip Energy Limited Partnership) and YELP (Yellowstone Energy Limited Partnership) expire in 2024 and 2028, respectively.
 ** Excludes 194 MW Kerr Dam which was purchased and subsequently transferred to the Salish & Kootenai Tribes in 2015.

NorthWestern Energy Montana - Cumulative Timeline of Owned and Long-Term Contracted Electric Resources



Since 2011, we have added approximately 954 MW, both owned and long-term contracted, to our generation portfolio, all of which is from carbon-free resources.

Sustainability – Net Zero Initiatives

 <p>Electric Operations</p>	<p>Carbon-Free Resources</p> <p>Continue transition to a carbon-free portfolio</p>	<p>Natural Gas Plants</p> <p>Gas plants needed to offset intermittency of renewable energy and will ultimately transition to peak load only</p>	<p>Fossil Fuel Transition</p> <p>Retire coal plants the earlier of depreciable life or when no longer cost effective</p>
 <p>Natural Gas Operations</p>	<p>Pipeline Modernization</p> <p>Replace aging pipe and other infrastructure to minimize leaks</p>	<p>Enhanced Leak Detection</p> <p>Use technology to improve leak detection and expand plant emission monitoring</p>	<p>Development of Alternative Fuels</p> <p>Renewable natural gas and/or Hydrogen</p>
 <p>Other Actions</p>	<p>Partner with customers on emission reductions</p> <p>Enhance energy efficiency programs, expand green energy offering and develop other solutions for customers.</p>	<p>Electric Vehicles</p> <p>Convert fleet to electric over time and develop infrastructure to support EVs</p>	<p>Carbon Offsets</p> <p>Utilize carbon offsets as necessary</p>

NET ZERO BY 2050

The plan is to build only carbon-free generation resources after 2035.

Constructive policy making and community involvement will help NWE achieve our goal of being Net-Zero by 2050.



Resource Adequacy

Montana's Capacity Crisis

Electricity

NWE is required, as a regulated utility, to provide energy to our customers 24 hours a day / 7 days a week.

- If we are not able to generate energy from our owned and long-term resources, we have to buy on the market, which can be expensive

High Volatility for Electric Prices and Availability

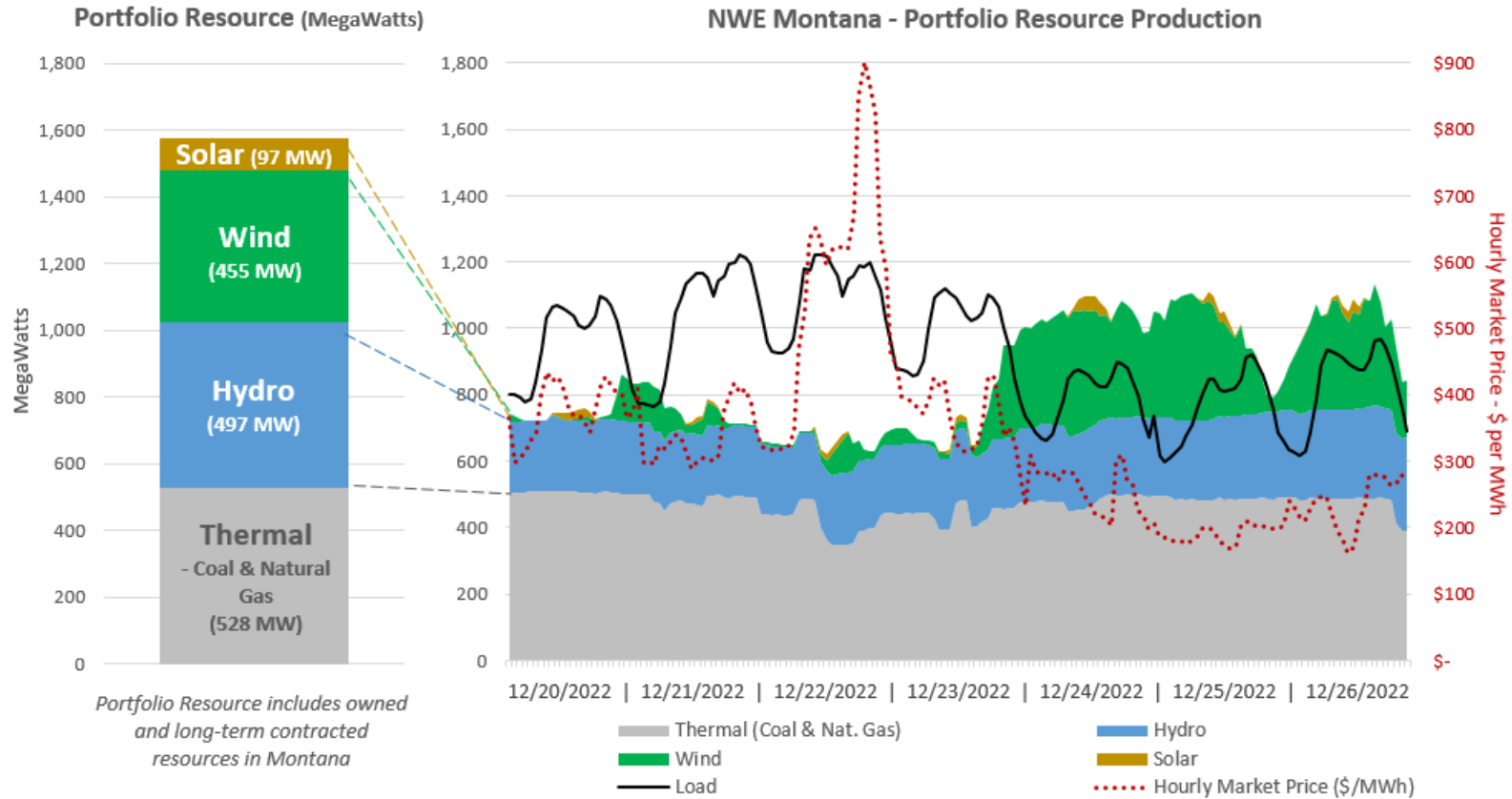
- High Prices during Peak Demands
 - Hottest and coldest days of the year usually when wind is not prevalent so we need to buy energy from others
 - Not enough capacity in the system
 - Coal & Gas-Fired Plant Retirements
 - Limited Transmission
- Low Prices when Wind & Solar Excess Power is Provided
 - Prices Can Even Go Negative

Energy = electricity provided in the electric sector

Capacity = Ability to provide dispatchable electricity on demand 24/7

Typically, NWE is long on energy during non-peak periods but short on energy during peak periods

December 2022 Cold Weather Event - Montana



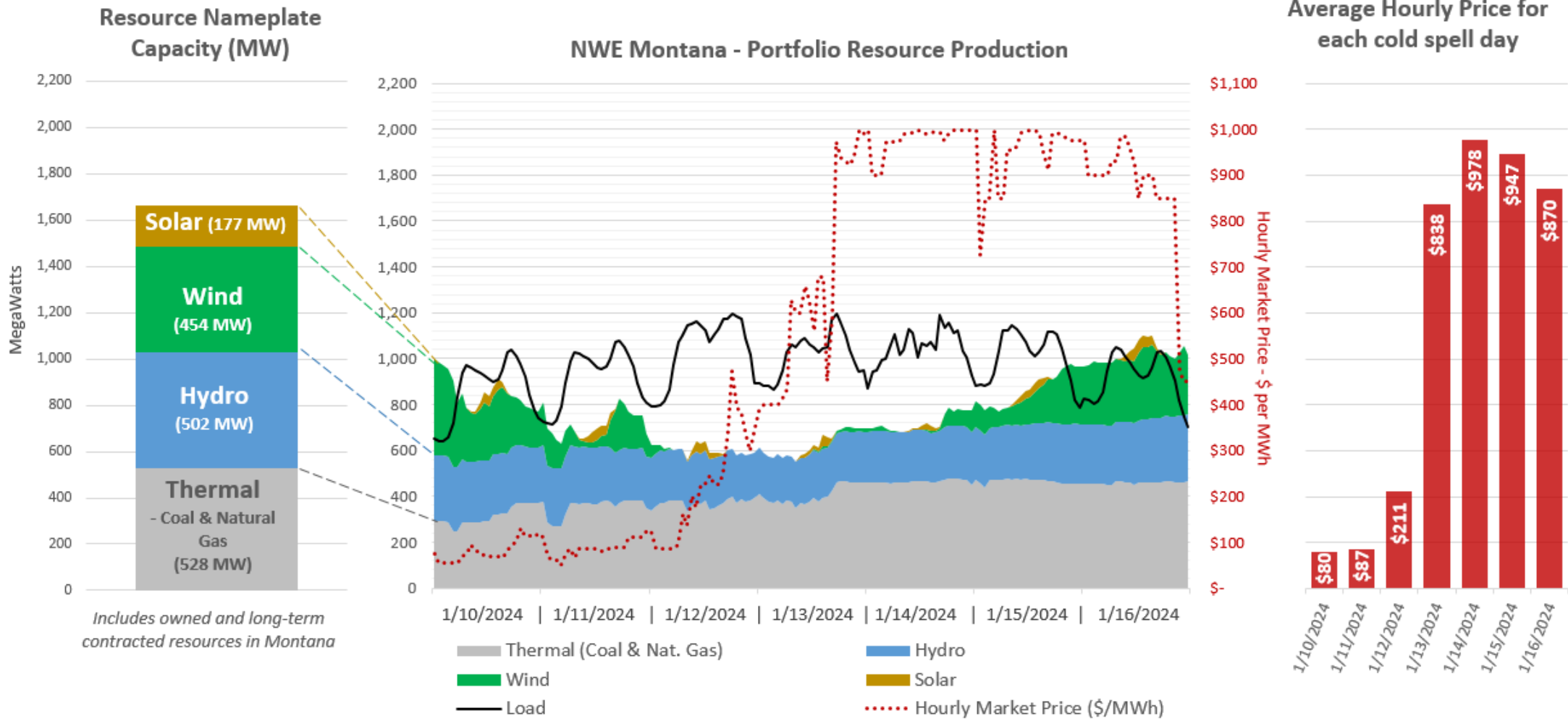
Energy prices surged during the recent Polar Vortex when wind and solar weren't providing capacity. Unfortunately, this was when NorthWestern was most dependent on the market to meet customer needs. The incremental 222 megawatts of capacity provided in this transaction would have saved Montana customers ~\$10 million over this 7 day event alone.

Estimated Cost Benefit of Existing 222 MW Colstrip Ownership vs. Market Purchases (Millions)

	Existing 222 MW of Colstrip			Colstrip Cost vs. Market	Estimated Market Cost	
	MWh	Variable + Fixed	= Total		Total	Avg. \$ Per MWh
Dec. 20-26	35,580	\$0.8 + \$1.4	\$2.2	(\$9.8)	\$12.0	\$336.14
Dec. 21-23	15,467	\$0.4 + \$0.5	\$0.9	(\$5.7)	\$6.6	\$427.64

Colstrip costs significantly lower than market

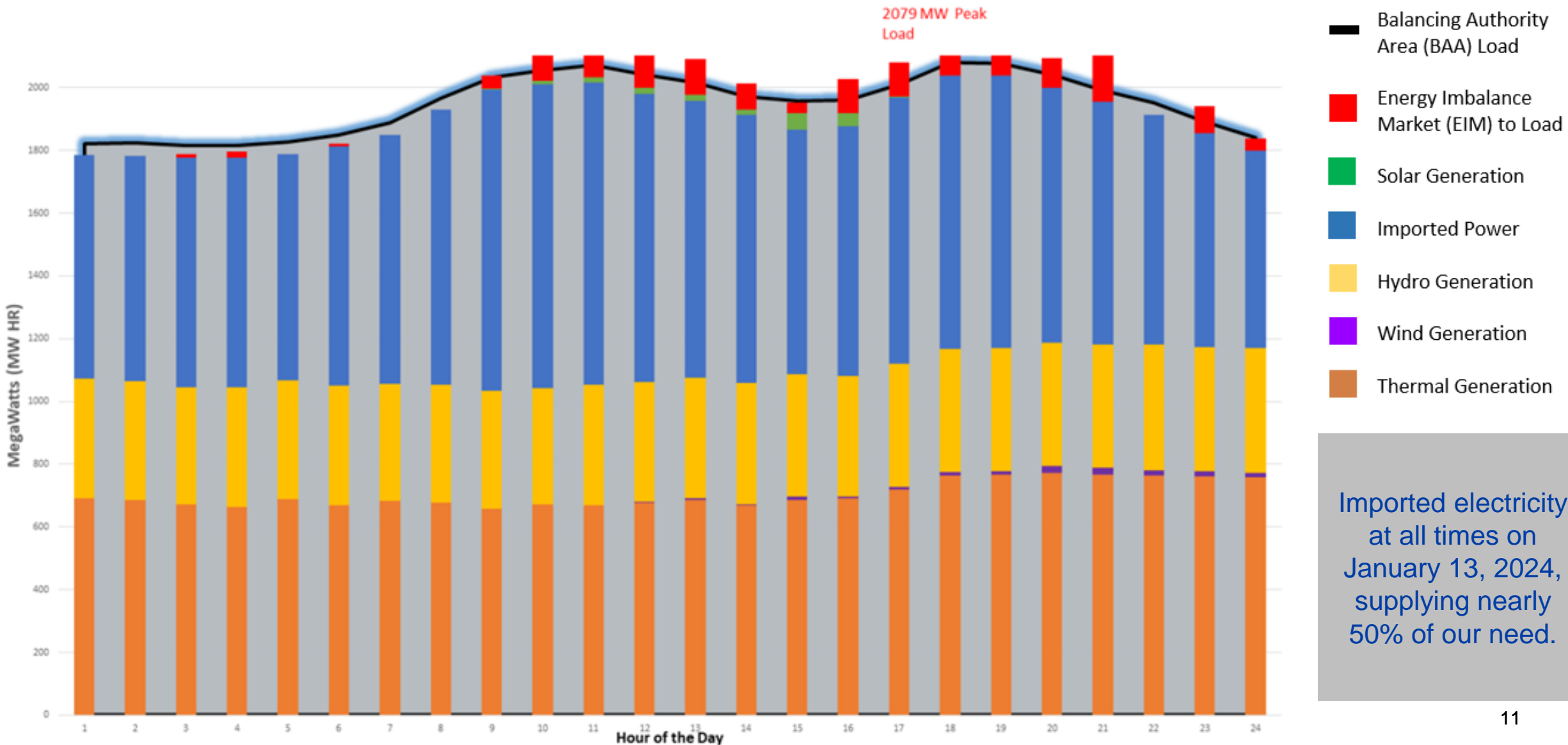
January 2024 Cold Weather Event - Montana



Once again during the recent cold spell (1/10/24 to 1/16/24), energy prices surged when wind and solar weren't providing capacity. And once again, NorthWestern had to be dependent on the market to meet customer needs, with the average price of a megawatt hour over \$900 for the last 4 days (13th-16th) of the cold spell.

January 2024 Cold Weather Event - Montana

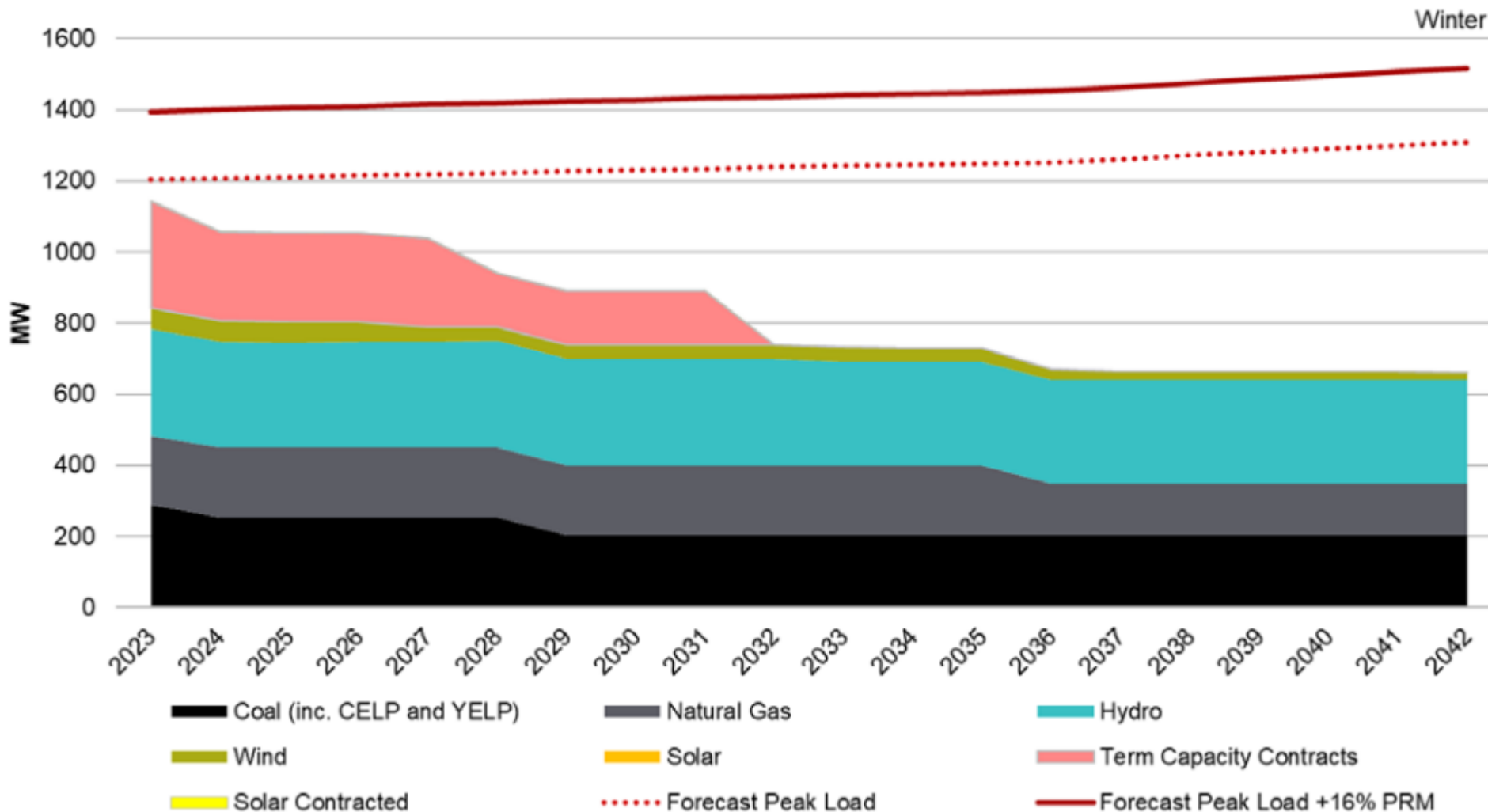
Balancing Authority Needs by Hour Based on Loads - January 13, 2024



Imported electricity at all times on January 13, 2024, supplying nearly 50% of our need.

Montana's Capacity Crisis

NWE's Winter Capacity WITHOUT YCGS and Colstrip Acquisition Historical Effective Load-Carrying Capability (ELCCs)



Without current and future Colstrip generation, and successful construction of the Yellowstone County Generating Station (YCGS), NorthWestern customers face an immediate and potentially life-threatening capacity deficit.

Why more Colstrip? (Increasing ownership from 222 MW to 444 MW)

Reliable

- **Existing resource, ready to serve our Montana customers.** Avoids lengthy planning, permitting and construction of a new facility that would stretch in-service beyond 2026.
- Reduces reliance on imported power and volatile markets, providing increased energy independence.
- In-state and on-system asset mitigating the transmission constraints we experience importing capacity.
- Adds critical long-duration, 24/7 on-demand generation necessary for balancing our existing portfolio.

Affordable

- **222 MW of capacity with no upfront capital costs** and stable operating costs going forward.
 - Equivalent new build would cost in excess of \$500 million.
 - Incremental operating costs are known and reasonable.
- Avista will retain its existing environmental and decommissioning obligations through life of plant.

Sustainable

- **We remain committed to our net zero goal by 2050.** This additional capacity, with a remaining life of up to 20 years, helps bridge the interim gap and will likely lead to less carbon post 2040.
 - Only alternative today for Colstrip would be an additional natural gas plant.
- Partners are committed to evaluate non-carbon long-duration alternative resources for the site.
- Keeps the existing plant open and retains its highly skilled jobs vital to the Colstrip community.
- Protects existing ownership interests with an ultimate goal of majority ownership of Unit 4.

Importance of Colstrip to Regional Markets

“The risk of a shortfall (of electricity to the northwest region of the United States) could significantly rise if energy markets are constrained, demand from electrification rapidly increases or if the Colstrip power plant’s last two coal-fired units are retired without replacing their generating capacity”

Quote from staff at the Northwest Power and Conservation Council’s meeting in Portland, Oregon on January 11, 2023

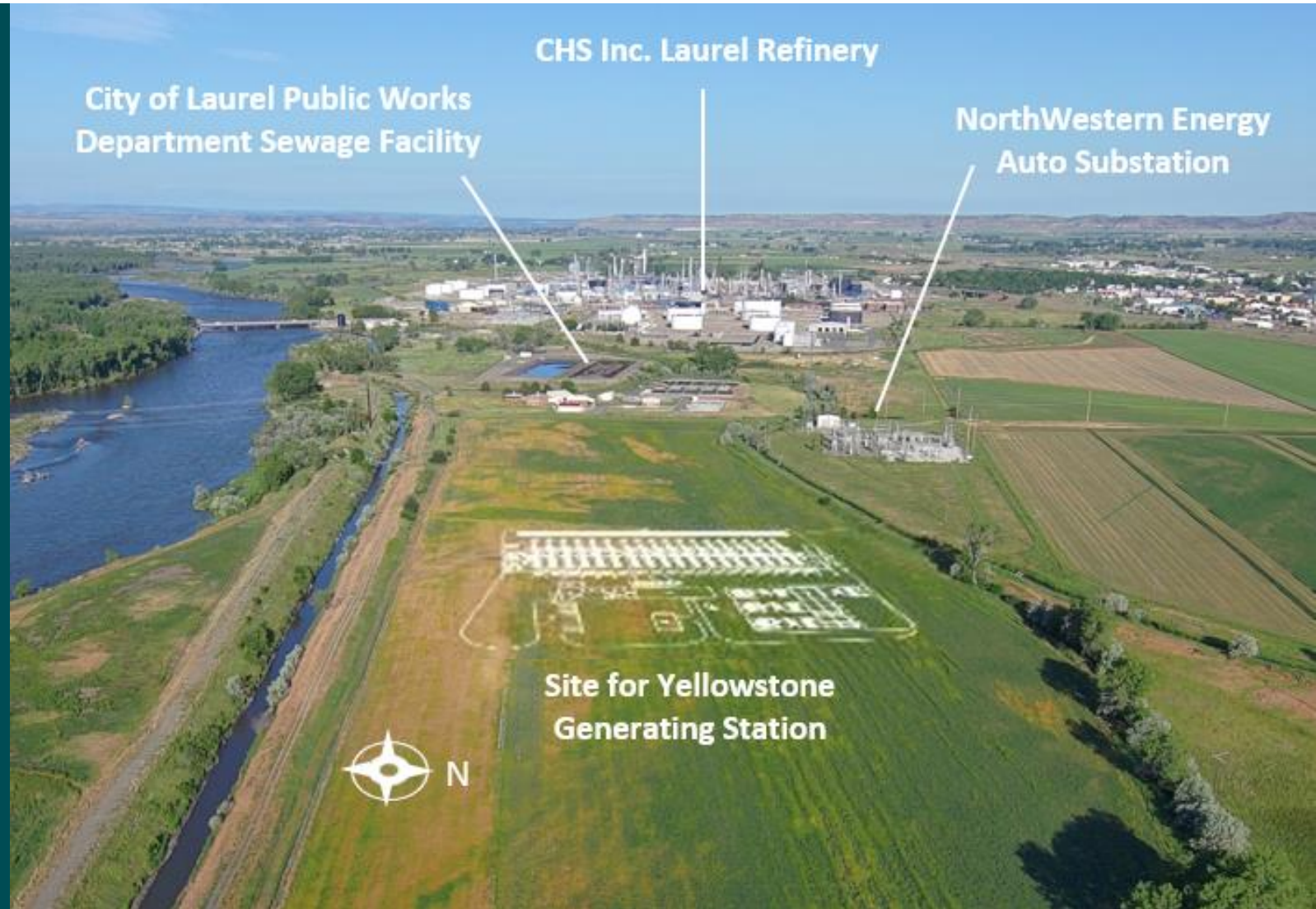
Via the Clearing Up article “NWPC: NW Needs More Reserves to Maintain Resource Adequacy” by Dan Catchpole, January 13, 2023

Capacity - Yellowstone County Generating Station

Broke ground in 2022 on the 175-megawatt natural gas plant south of Laurel.

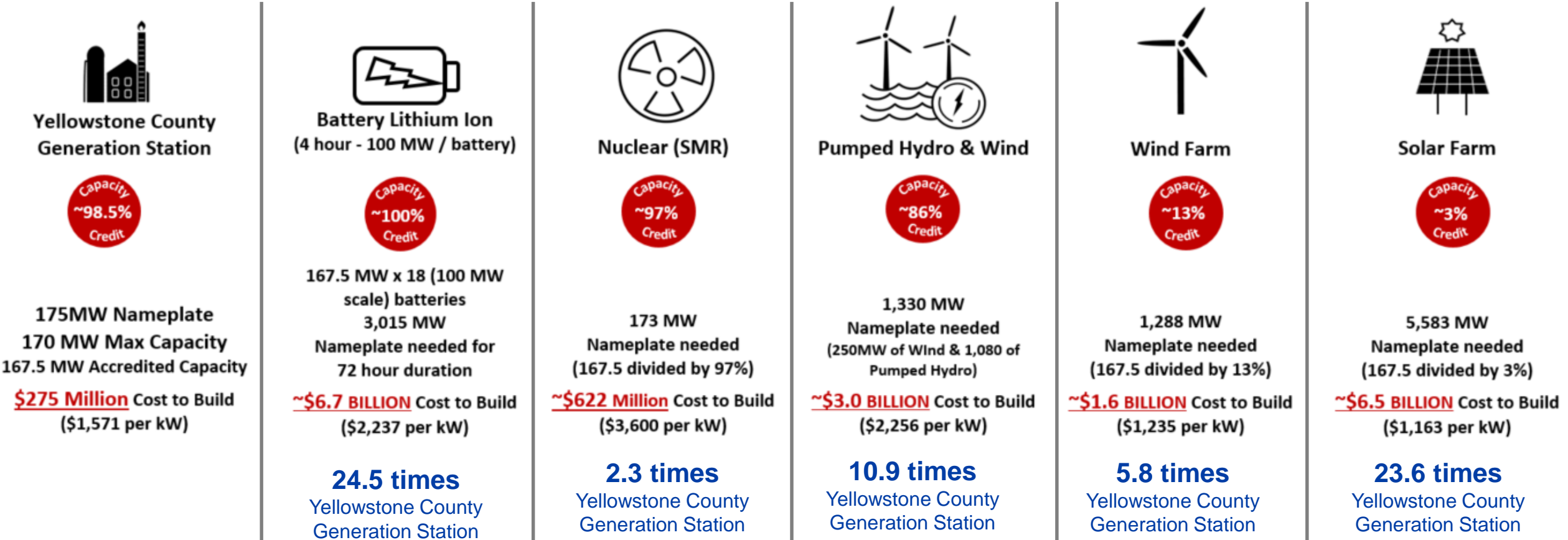
Selected through a third party administered bid process that also selected 50 MW Beartooth Battery and 100 MW hydro-based contract.

Designed specifically to provide peak capacity and support the intermittent nature of renewable energy.



Capacity - Alternatives

Effective Load Carrying Capability



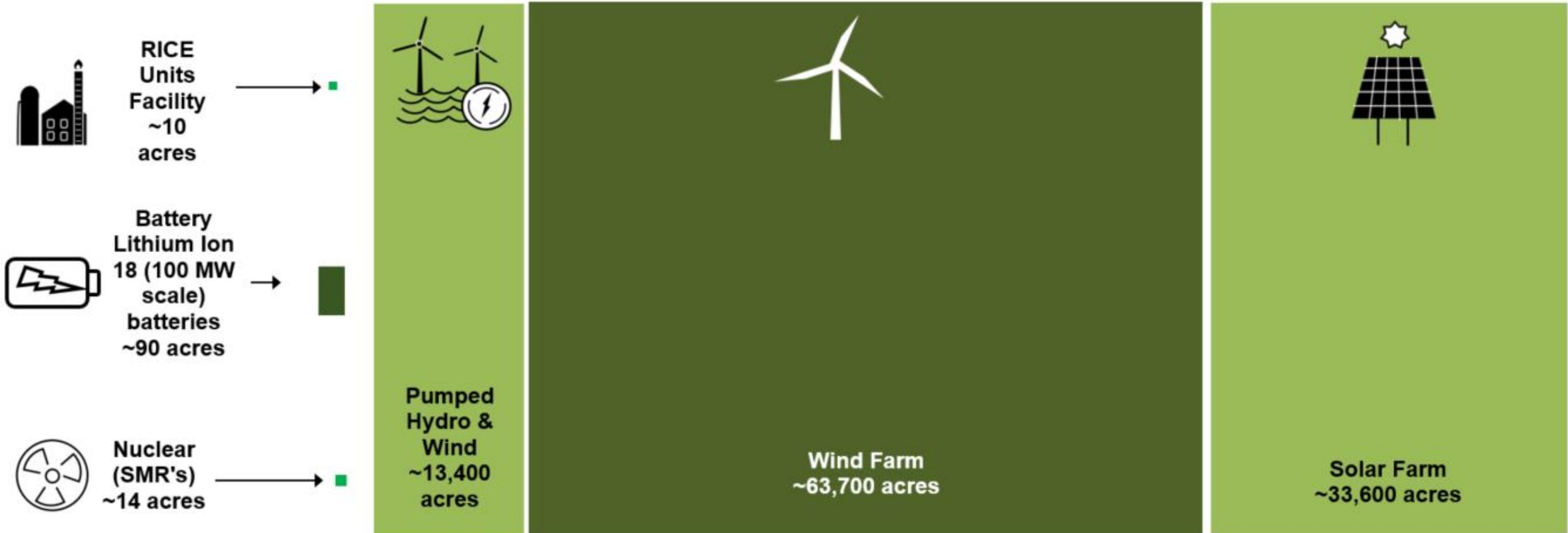
To meet our capacity needs with alternative resources, it would cost anywhere from 2 to 24 times more than our Yellowstone County Natural Gas plant would.

Note: Capacity Credit factors are based on Effective Load Carrying Capability (ELCC) as of Dec. 2022.

The construction cost per generation type based on Cost and Performance Characteristics of New Generating Technologies, Annual Energy Outlook 2022 (eia.gov)

Capacity - Alternative Capacity Considerations – Land Requirement

Land Area Requirement



Not only will it cost over 2 times and ~24 times to build a alternative capacity generation, for the equivalent capacity output as the Yellowstone County natural gas plant, some of the alternatives would require massive areas of land that would not be economical compared to the Yellowstone County RICE facility.



Going Forward

Net Zero By 2050 – Why Not Sooner?

The reasons NorthWestern Energy has a net zero by 2050 goal and not sooner:

- 1) We believe we will need an adequate amount of time for non-carbon emitting, dispatchable, long-duration electric generation technology to be proven and cost effective to replace our existing coal-fired generation, that has an expected useful life into the early 2040's.
- 2) As a natural gas company, we believe we will need incremental time for technology to be developed to utilize non-carbon emitting resources like hydrogen and renewable natural gas solutions to reduce our carbon footprint.
- 3) In addition to our 2050 goal, we have committed to only add non-carbon emitting electric generation after 2035. We believe it will take this next decade to determine if solutions like nuclear, hydrogen, and long-duration battery storage are the right choices to achieve that goal.

We are proud of our nearly 60% carbon free portfolio in Montana (clearly ahead of the industry average of approximately 40%) and will continue to work hard to find solutions that provide the proper balance between reliability, affordability and sustainability.



Matters to Consider

New Carbon-Free, Dispatchable, Long-Duration Sources are Not Expected to be Available or Cost-Effective Until mid-2030's

EPA Proposed Rules Create Risks for our Coal-Fired Plants

- Mercury & Air Toxic Standards (MATS) likely require significant investment at Colstrip to comply or close by 2026. New technology would make Colstrip, currently 99.6% efficient in removing particulate matter, to 99.8% or better costing \$250 to \$500 million per unit.
- Greenhouse Gas (GHG) rules likely to have financial impact on all coal-fired plants to comply or close by 2031

Transmission Constraints – already importing ~40% of our energy need during peak demand periods

Permitting Challenges – backlog of new permits for brown & green sites

Regulatory Approval – will regulators approve new or unproven technologies

Supply Chain Challenges – already a backlog of projects waiting to be built

Affordability – costly new generation added to customers already experiencing inflationary challenges

Health & Wellbeing – rolling blackouts during peak energy demand periods can threaten our customer's health and wellbeing.

Musk and Gates on Future of Electricity Need



"The need for electricity is going to be extremely high—higher than we can imagine—and while this is good news for the electric companies that produce it, the effort required to address demand will be tremendous."

Elon Musk



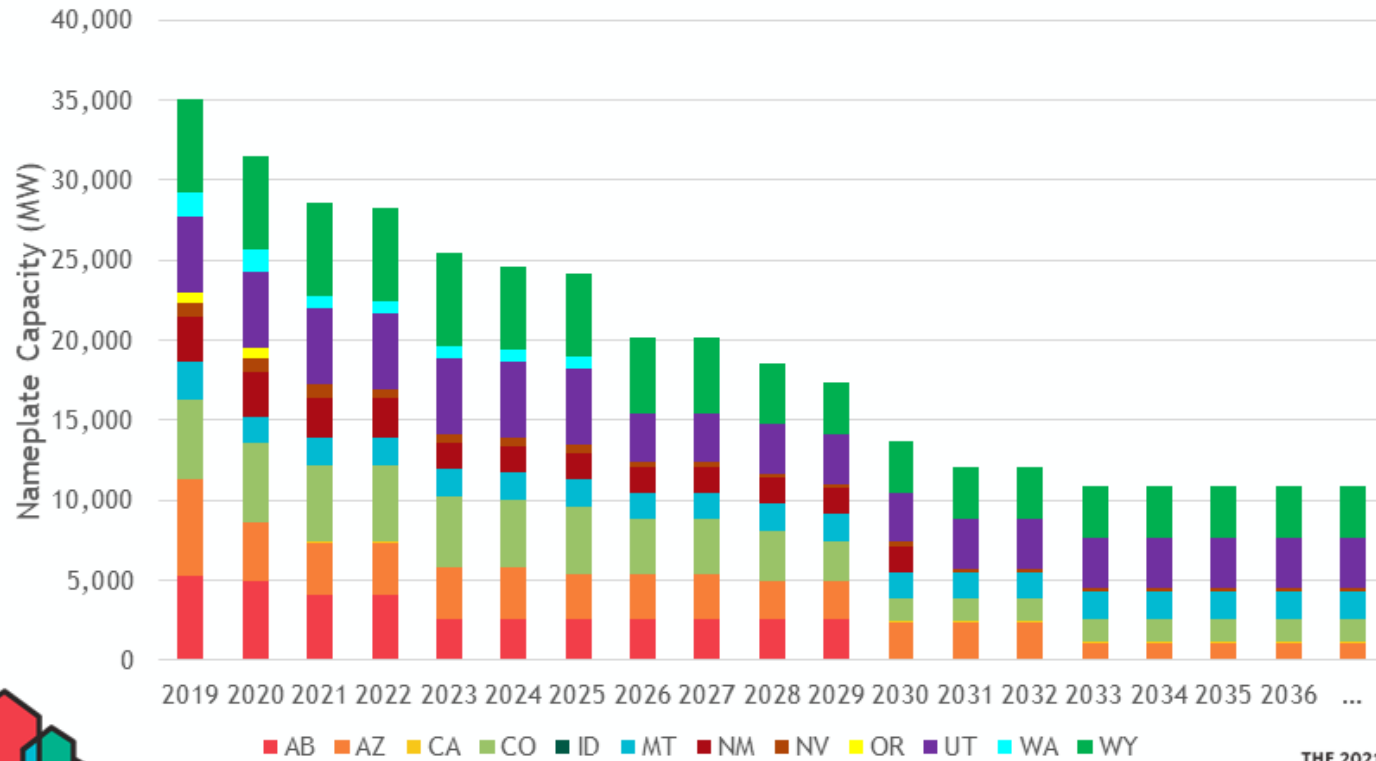
"Massive electrification is daunting, but you can see that there is a path ... Electrification is what it's all about. It's a huge opportunity."

Bill Gates

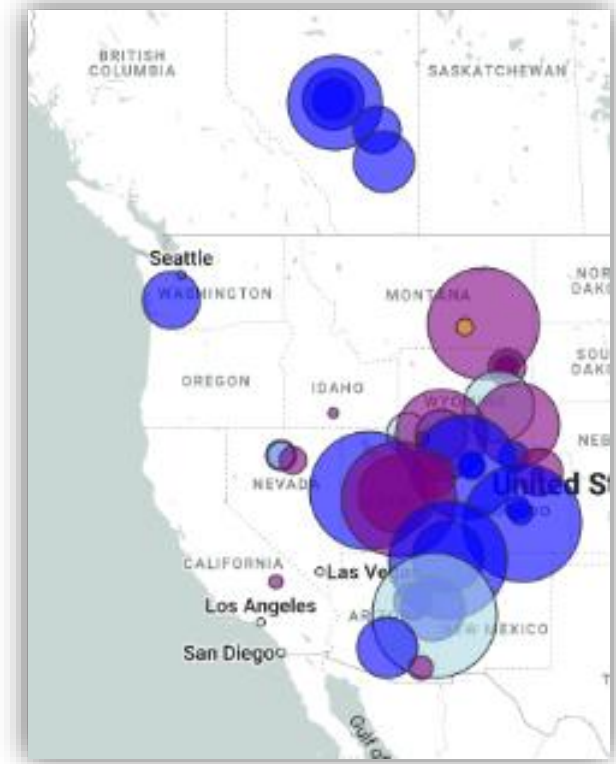
Significant Capacity Retirements in the West

WECC coal units in operation, decreasing over time

WECC Coal Operating Capacity - By State/Province



Planned coal retirements in the west **exceed 20 gigawatts** over the next decade resulting in worsening capacity deficits as forecasted by the Northwest Power Plan.



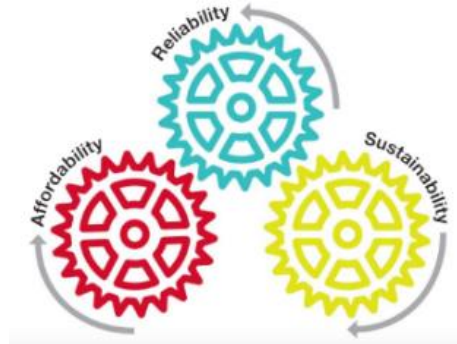
Transition to a Green Energy Portfolio

Can and will be done but will take years of planning and implementation.

- New technologies, such as nuclear (SMR's), hydrogen, or long-duration batteries, are not proven technologies or cost effective today.

First 60% of Carbon-Free Portfolio was achieved a lot easier than the final 40%

Need to balance
Affordability
with Reliability and
Sustainability



You cannot tear down the old bridge until you build a new one

Bridging the gap to a cleaner, carbon-free future is necessary to assure we can deliver safe, reliable and affordable electricity 24 hours / 7 days a week.



Thank you

Questions & Answers