



Supply Side Resource Overview

Existing and Near-Term Planned Resources

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Acronyms and Terms

B2H: Boardman to Hemingway

CF: Capacity Factor or Average Output Divided by Nameplate Over a Period of Time

CT: Combustion Turbine

HRSBG: Heat Recovery Steam Generator

IPC: Idaho Power Company

kV: Kilovolt

MW: Megawatt (A Measure of Power)

MWh: Megawatt-Hour (A Measure of Energy)

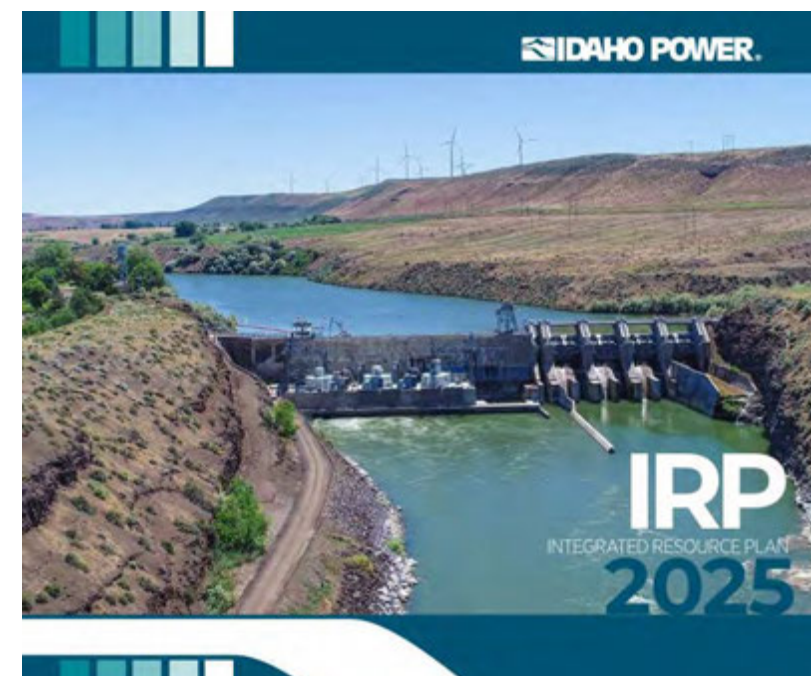
PPA: Power Purchase Agreement

PURPA: Public Utility Regulatory Policies Act of 1978

SWIP-N: Southwest Intertie Project – North Segment

VER: Variable Energy Resource

WECC: Western Electricity Coordinating Council



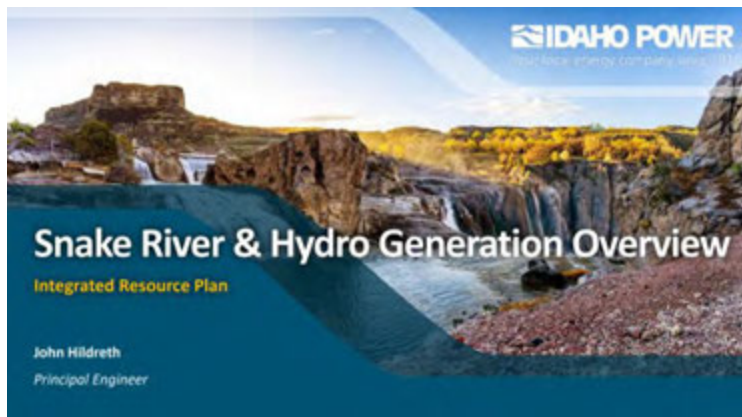
[Link to Idaho Power Acronyms List Used in the Integrated Resource Plan Process](#)

More Educational Material

Idaho Power has compiled various educational resources to help those participating in our Integrated Resource Plan process or anyone who wants to know more about how their energy is generated and delivered.

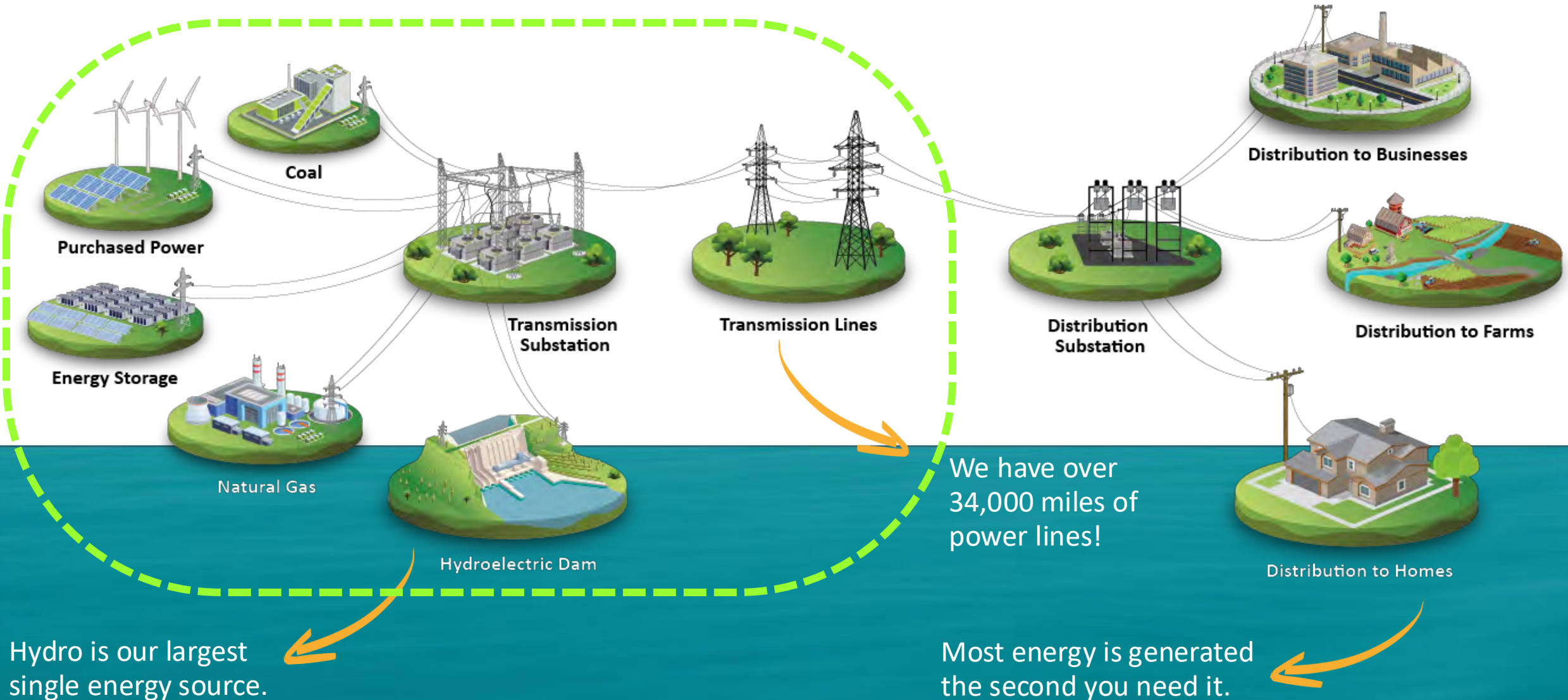
Link to Idaho Power videos:

- idahopower.com/about-us/energy/planning-and-electrical-projects/our-twenty-year-plan/educational-resources/
- Or go to idahopower.com/irp and use the "Educational Resources" link there.

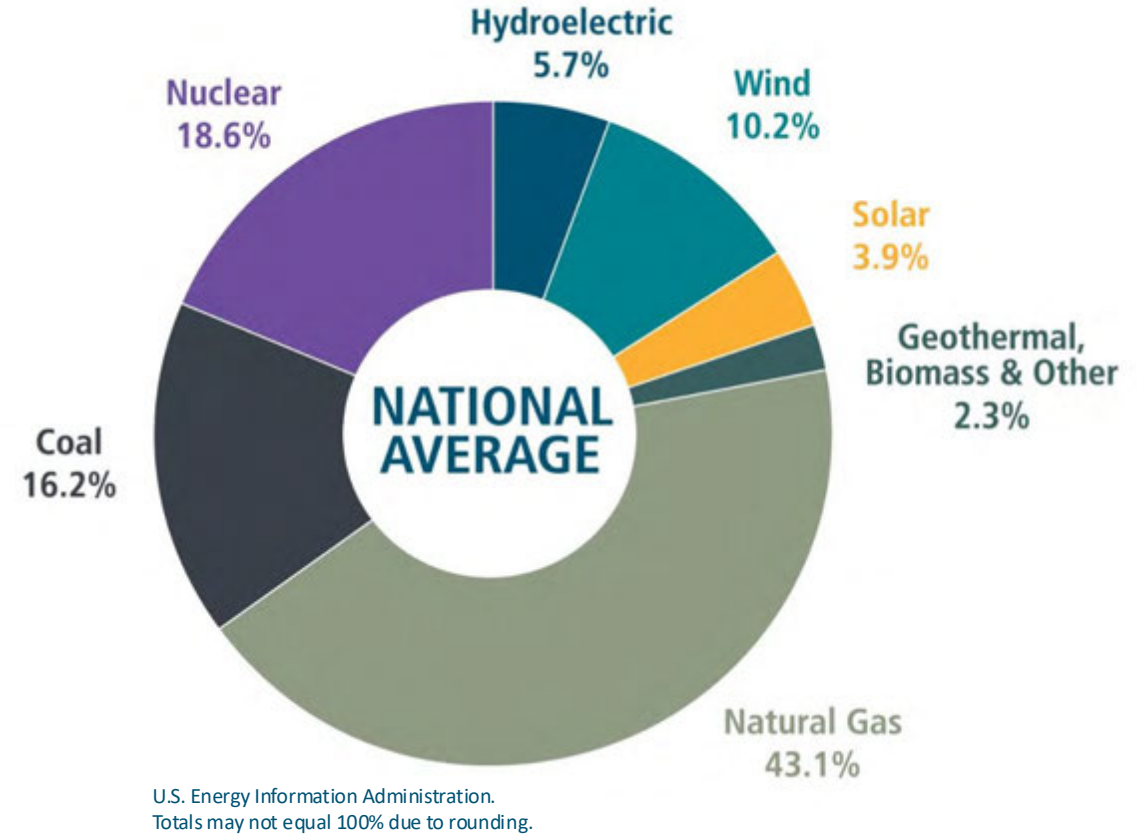
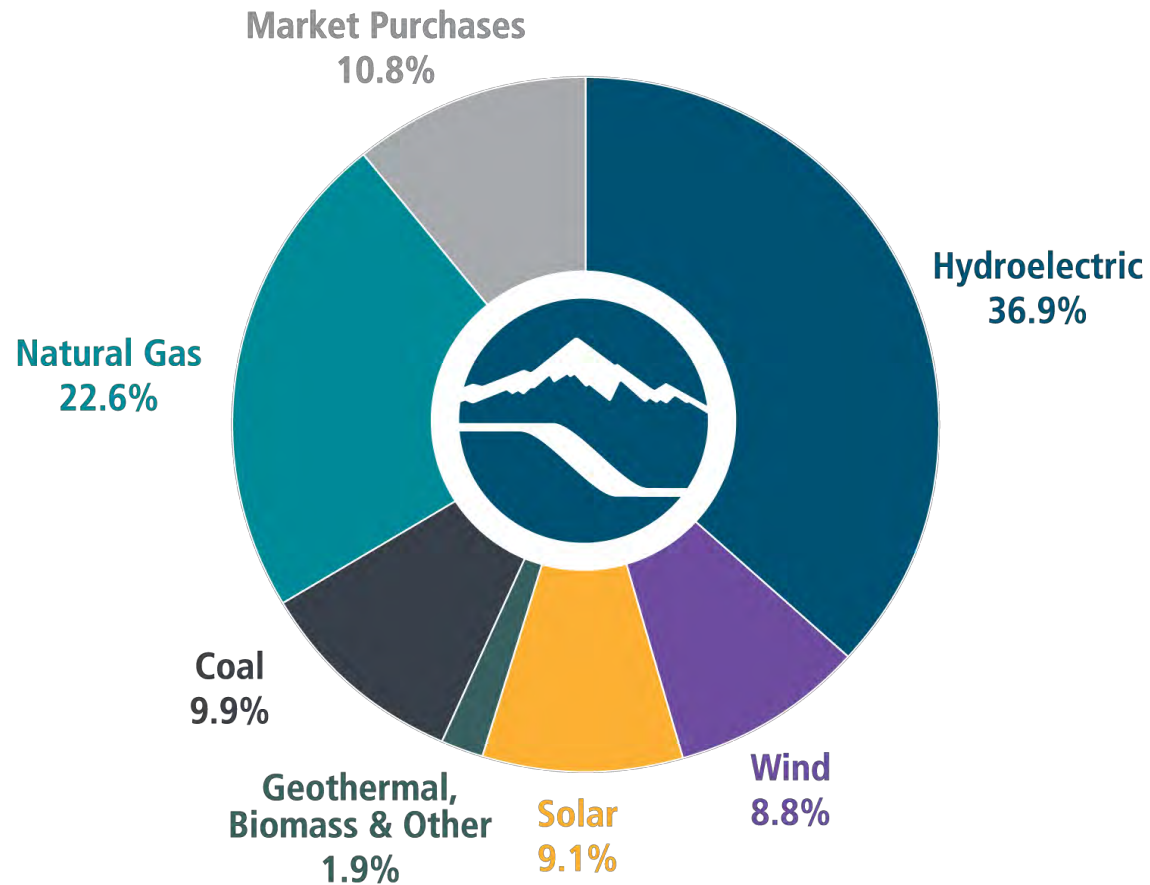


And Much
More!

How We Serve Customers



2025 Energy Mix

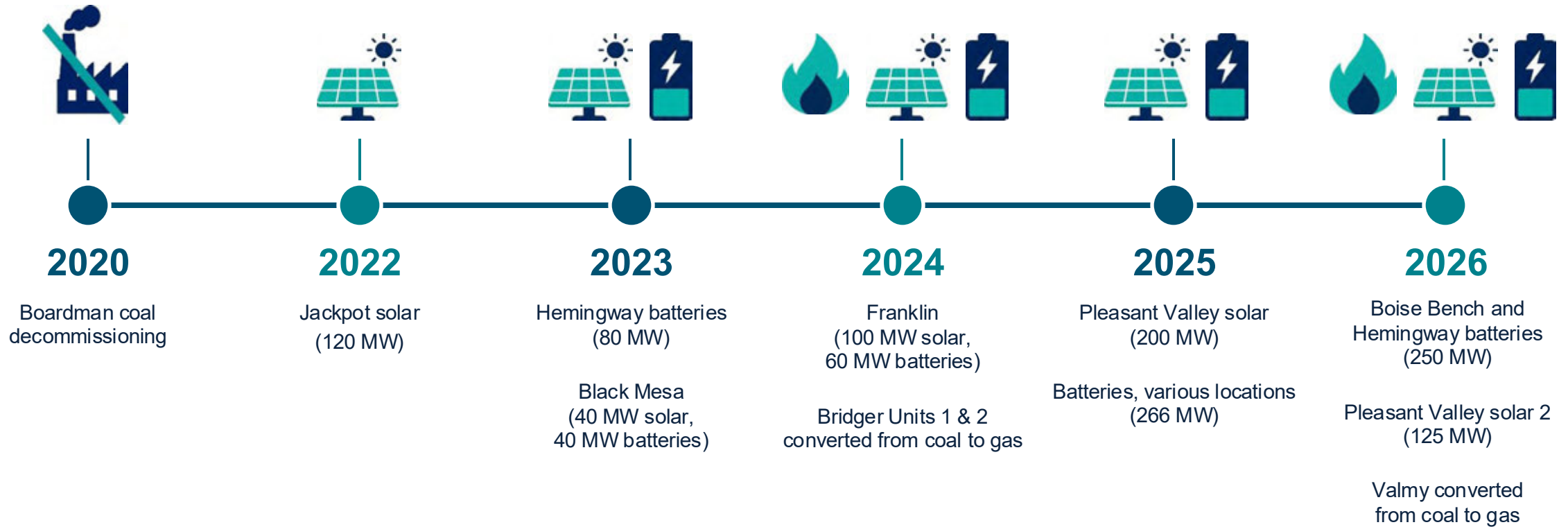


This shows the energy we generate from company-owned resources and energy we buy through long-term contracts with wind, solar, biomass, geothermal and small-scale hydro generators. The mix does not represent the energy delivered to customers for two reasons.

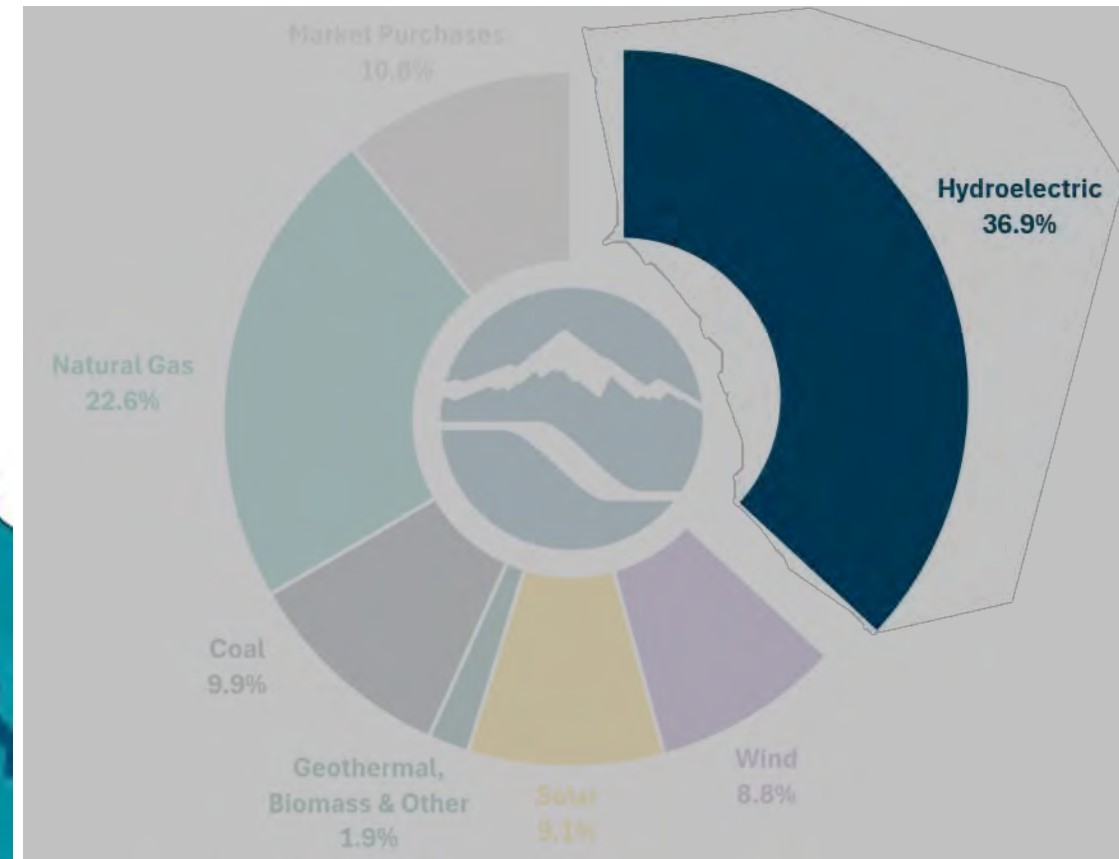
- We participate in the wholesale energy market and sell energy to other utilities and to retail customers.
- Some of our purchased power from renewable sources comes with a Renewable Energy Credit, or REC, which we sell to keep customer prices low.

Clean Energy Progress

2020–2026



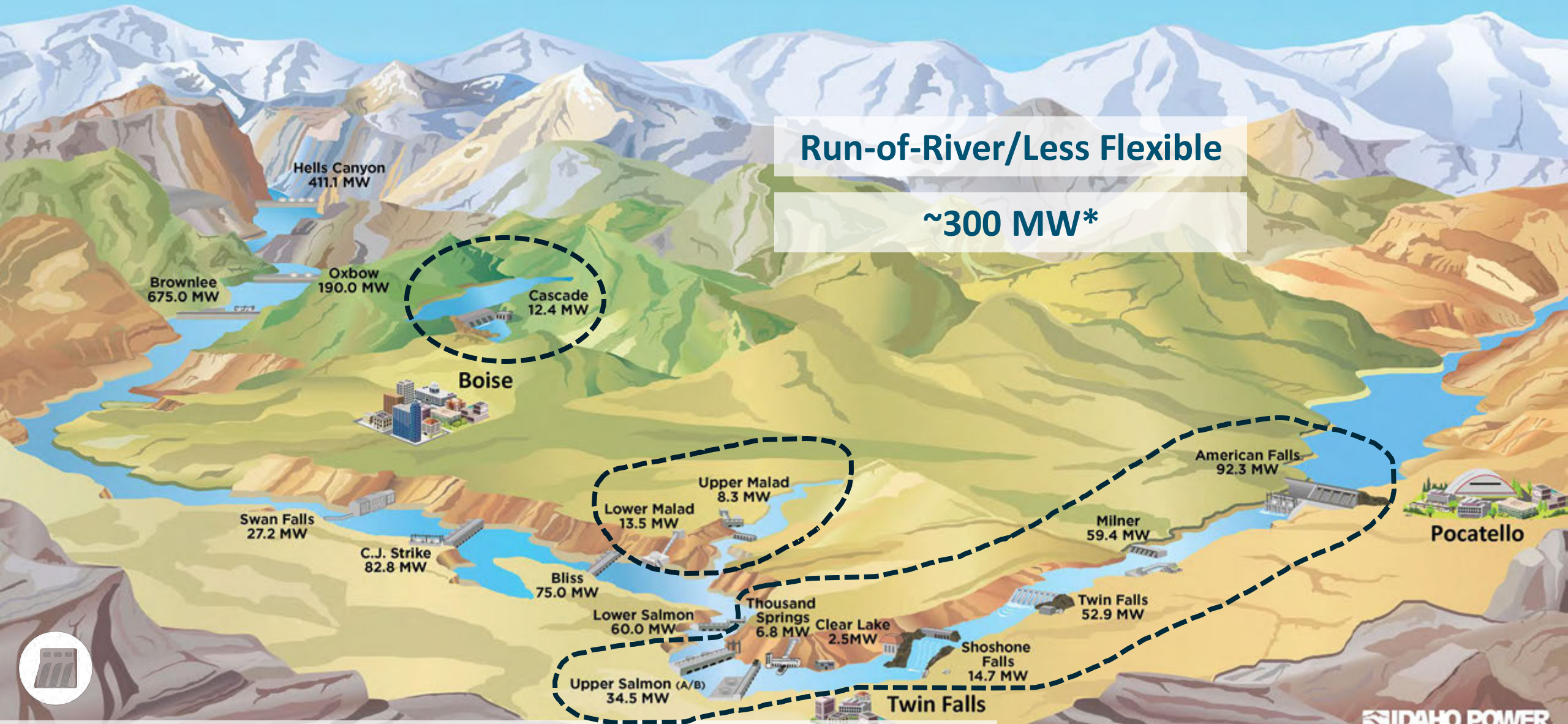
Hydro



Idaho Power's Hydroelectric System

Run-of-River/Less Flexible

~300 MW*

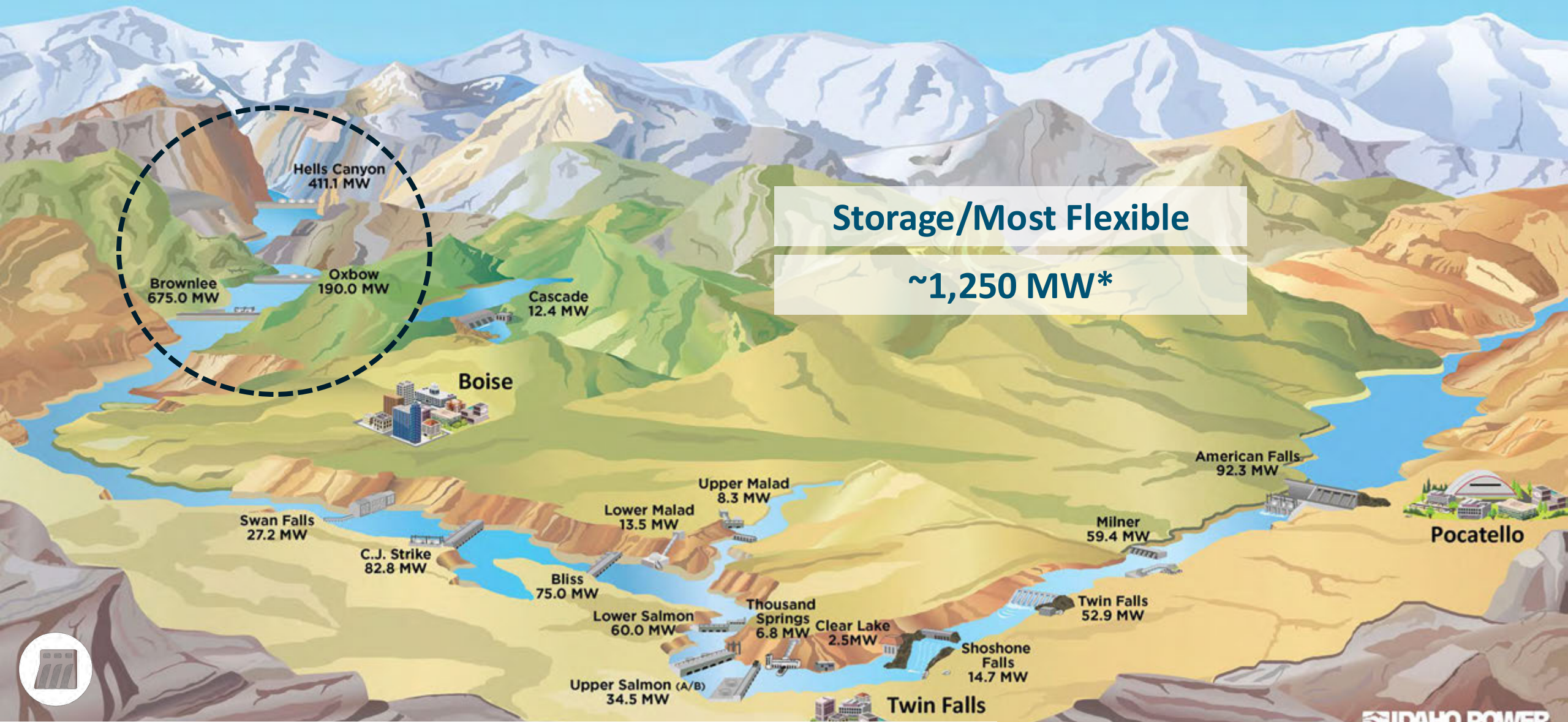


Idaho Power's Hydroelectric System



*Represents nameplate capacity; actual generation highly dependent on hydro conditions, reservoir head levels, and other variables

Idaho Power's Hydroelectric System



Storage/Most Flexible

~1,250 MW*

Boise

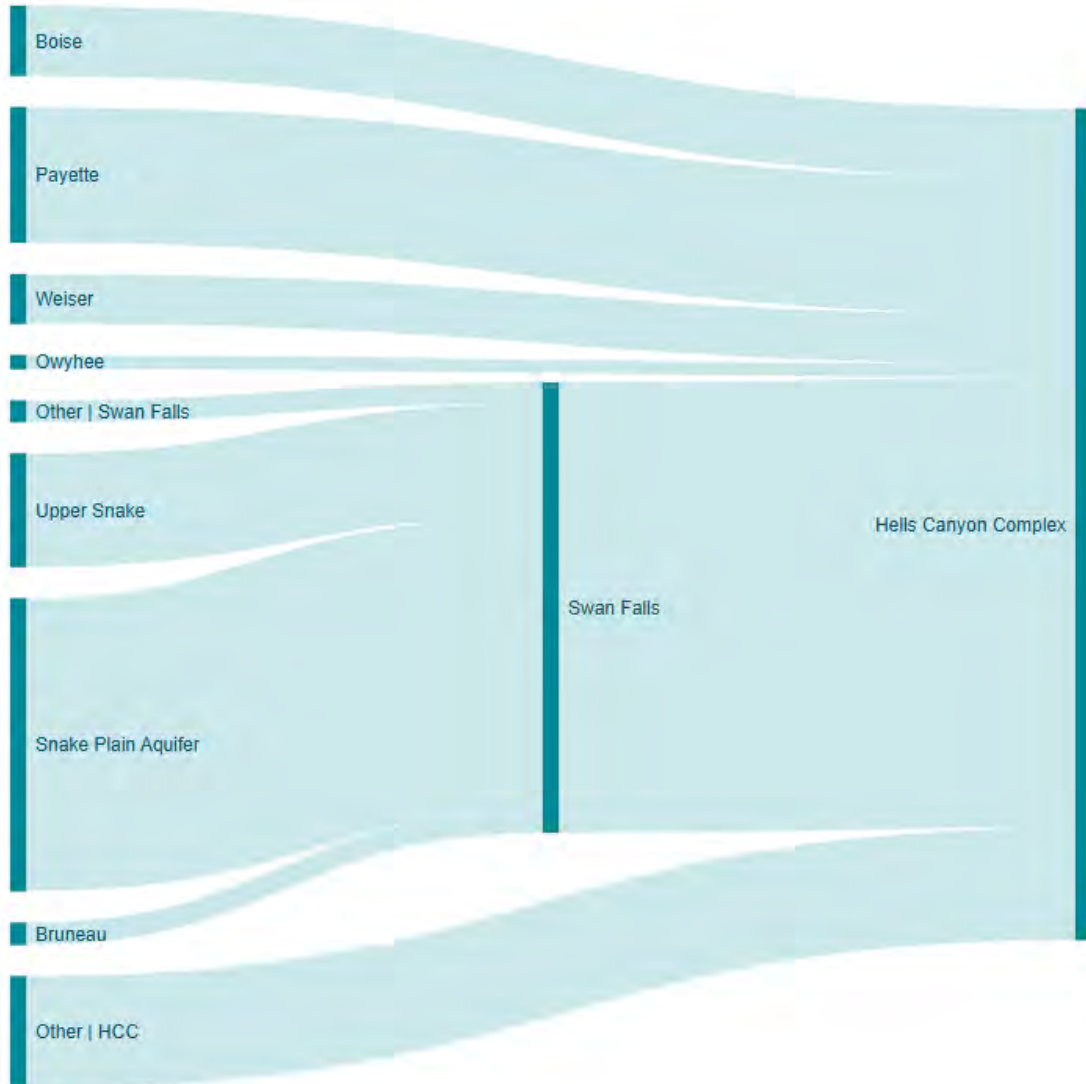
Pocatello

Twin Falls

IDAHO POWER.

*Represents nameplate capacity; actual generation highly dependent on hydro conditions, reservoir head levels, and other variables

Brownlee Inflows

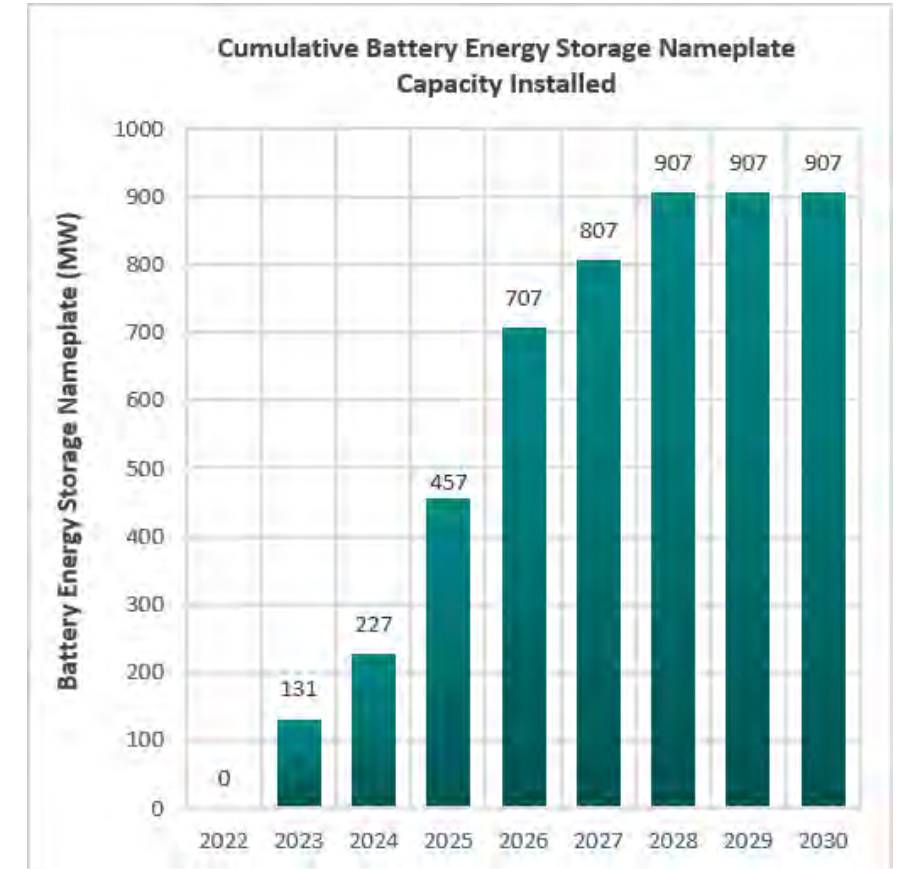


Batteries



Batteries

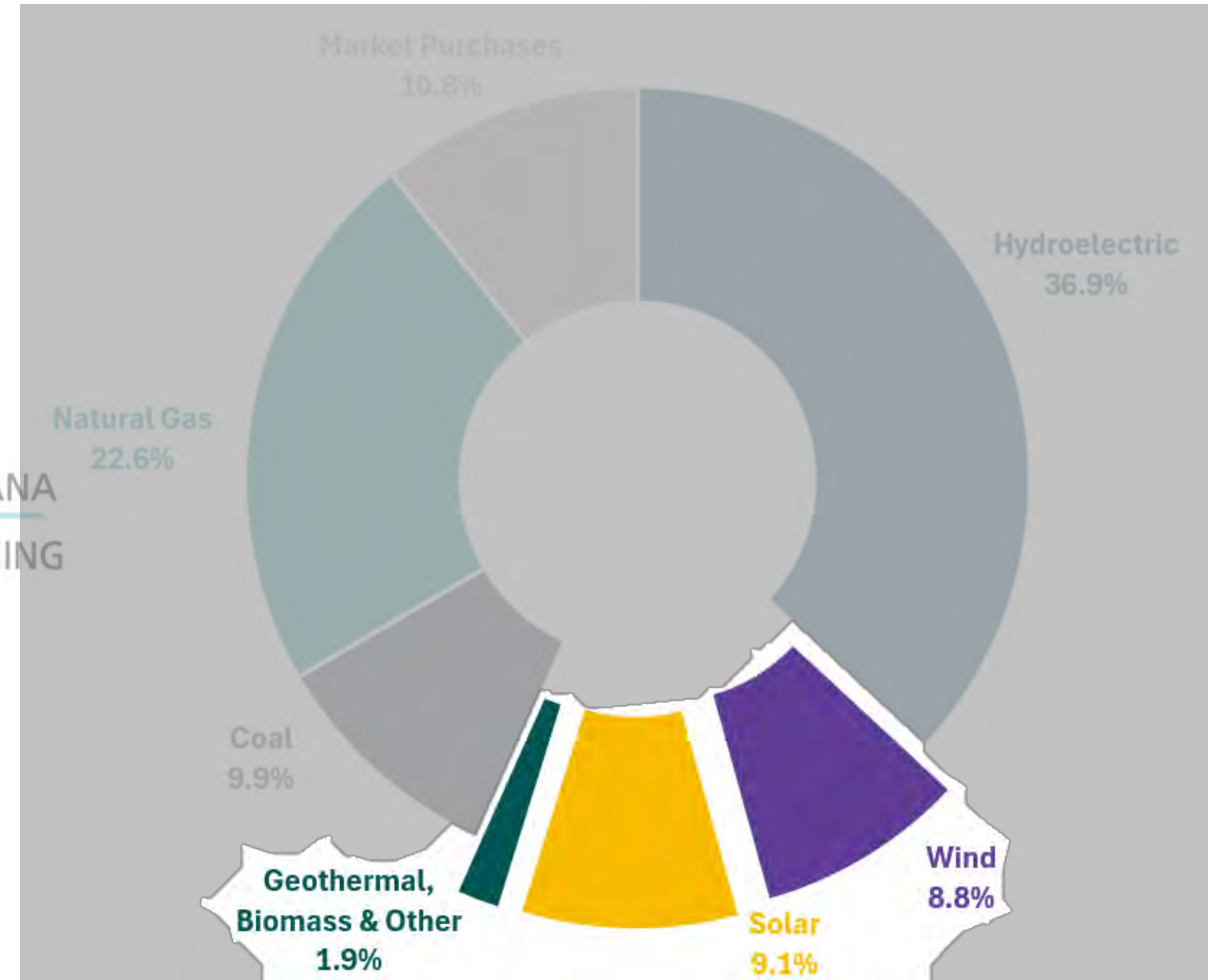
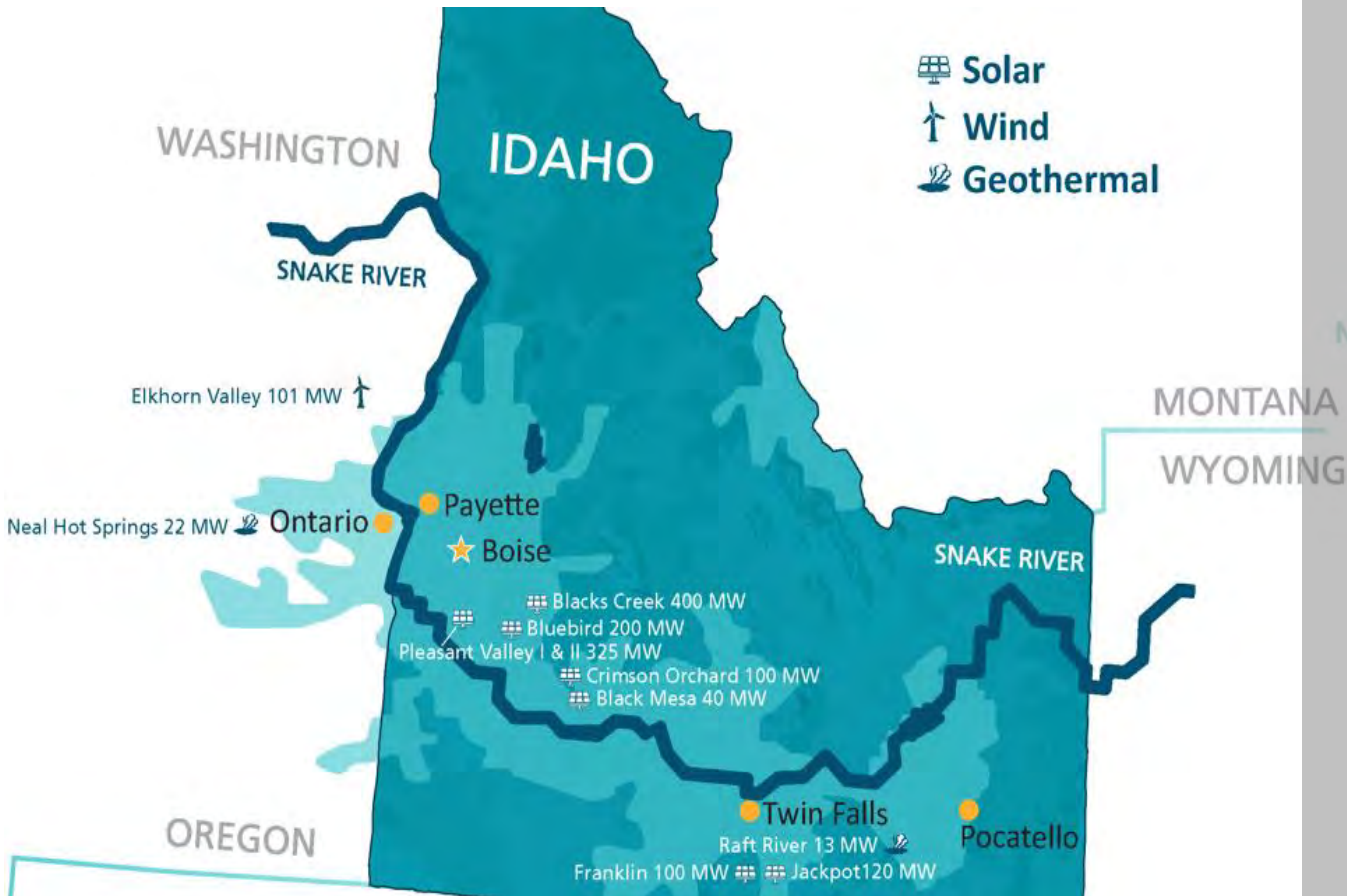
- 707 MW Nameplate Capacity Total
- 13 Existing Battery Sites
 - 4 distribution connected
 - All Idaho Power owned
 - 9 transmission connected
 - 8 Idaho Power owned, 1 contract
 - 7 stand-alone, 2 solar-paired behind a common and limited point of interconnection
 - Stand-alone and solar-paired can both be charged from the grid
- Multiple uses of the batteries
 - Meeting peak load needs
 - Variable Energy Resource (VER) smoothing
 - Reserves
 - Economics
- Round-trip efficiency losses range from ~10% to 15%.



Year	New Project	Nameplate
2027	Crimson Orchard	100 MW
2028	Bluebird	100 MW



Renewables



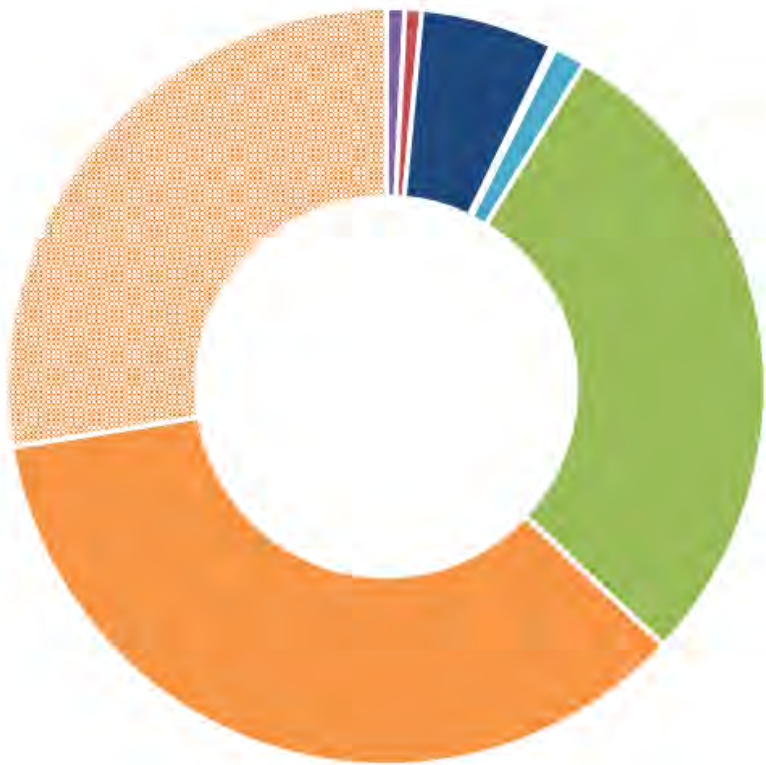
*Map shows only non-PURPA PPAs.

Renewables

Total Renewables: Online and Not Yet Online
(Nameplate Capacity)

2,540 MW nameplate capacity contracted

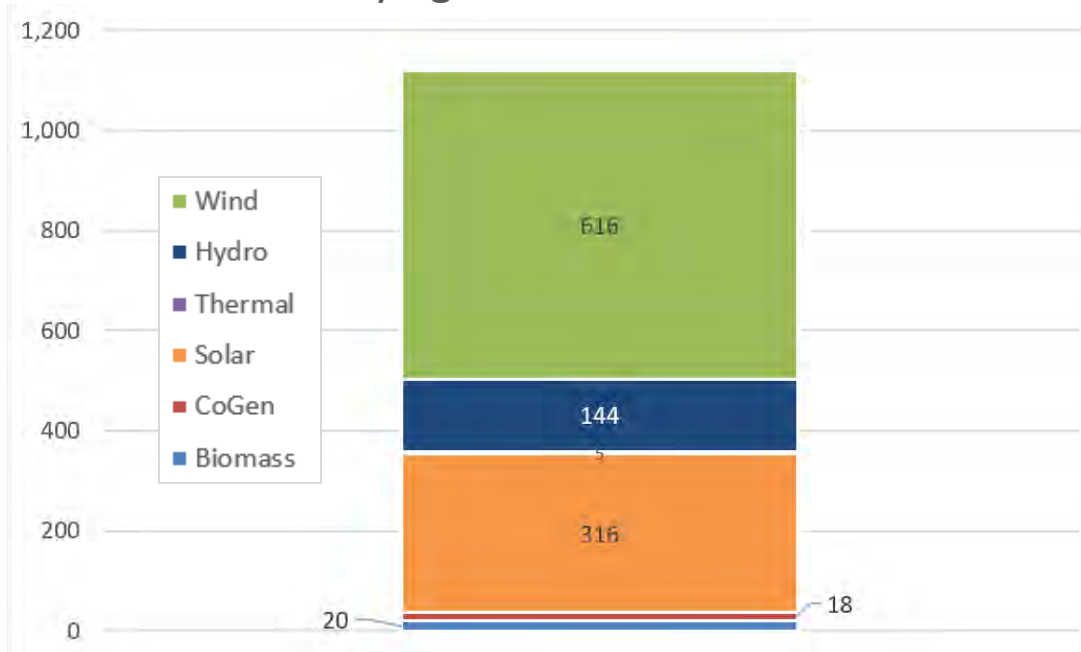
1,840 MW nameplate capacity currently online



■ Biomass ■ CoGen ■ Hydro ■ Thermal ■ Geothermal ■ Wind ■ Solar - Online ■ Solar - Not Yet Online

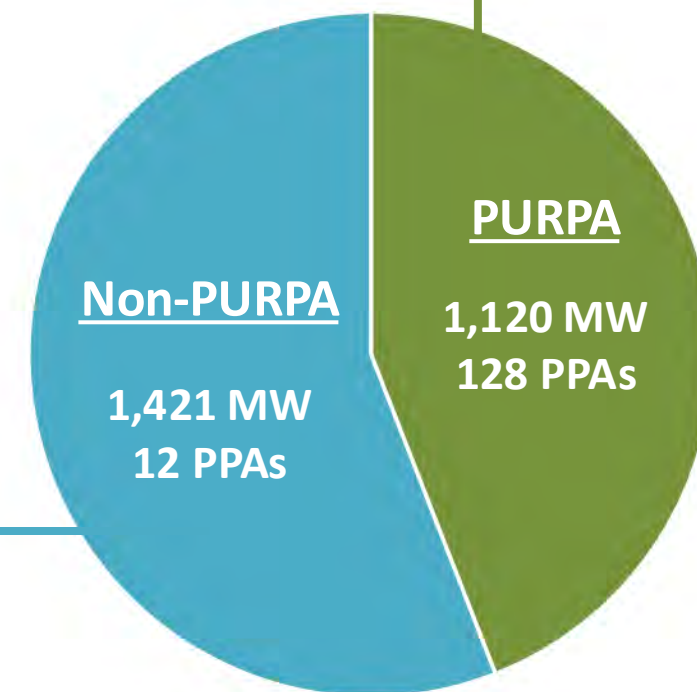
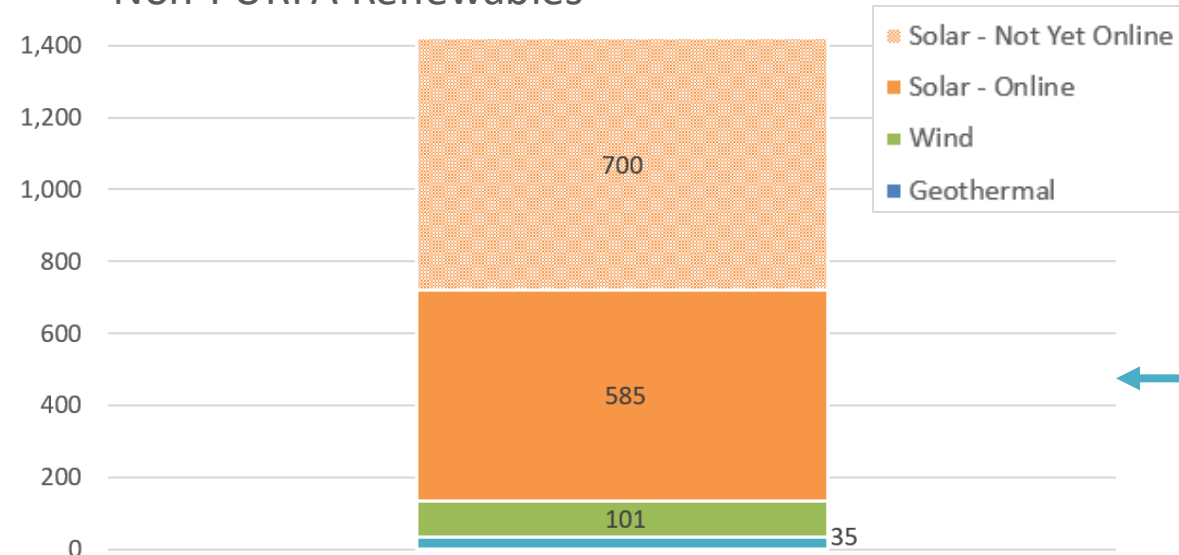


PURPA Qualifying Facilities



Types of Renewables

Non-PURPA Renewables

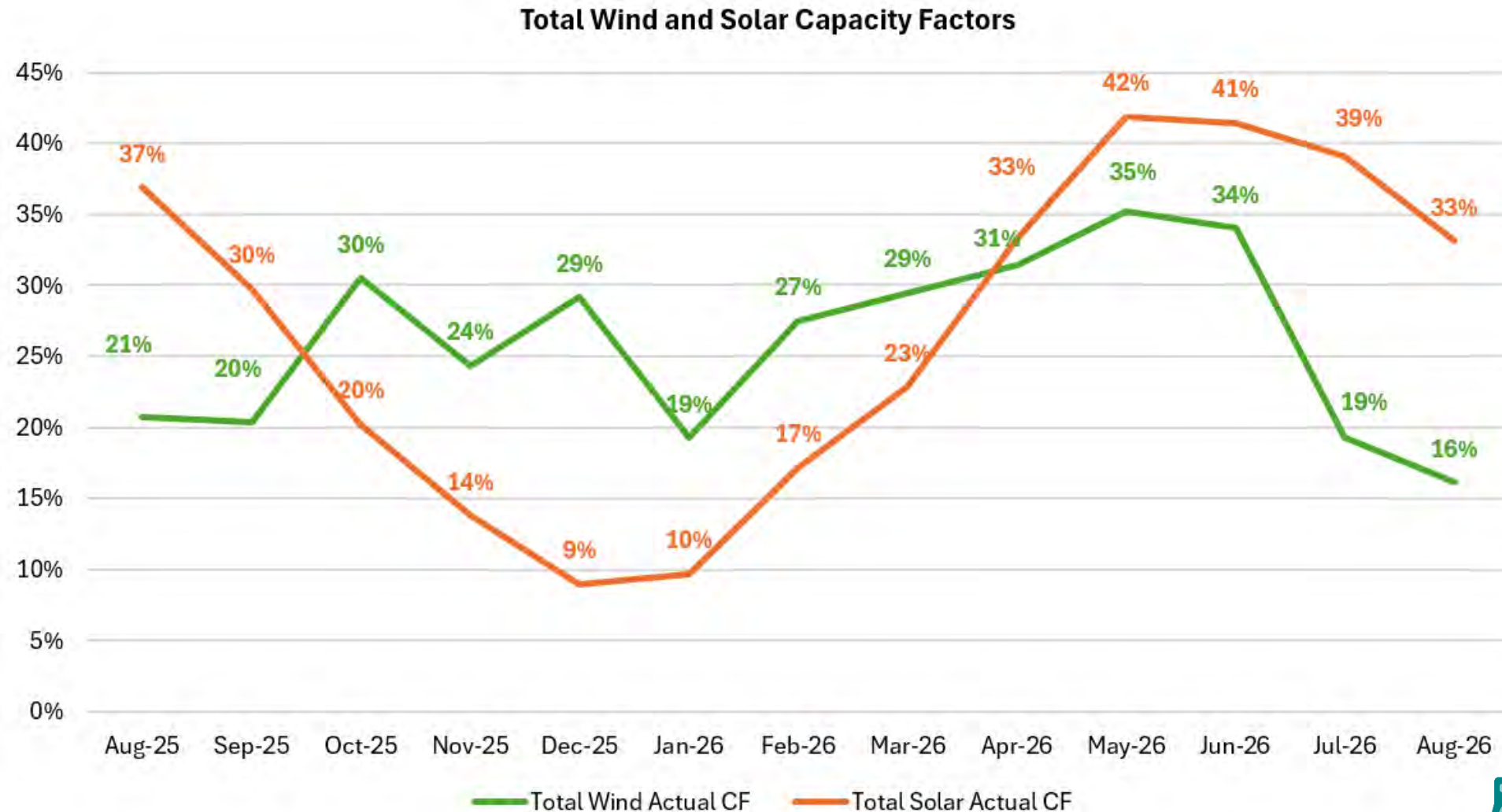


Total Renewables: PURPA and Non-PURPA

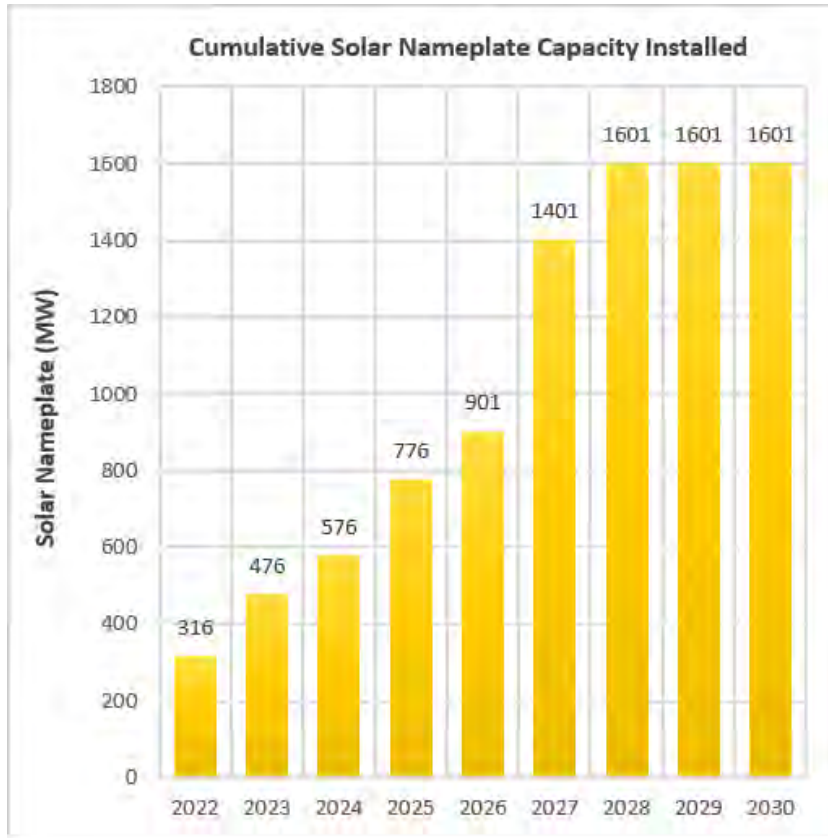


Renewables

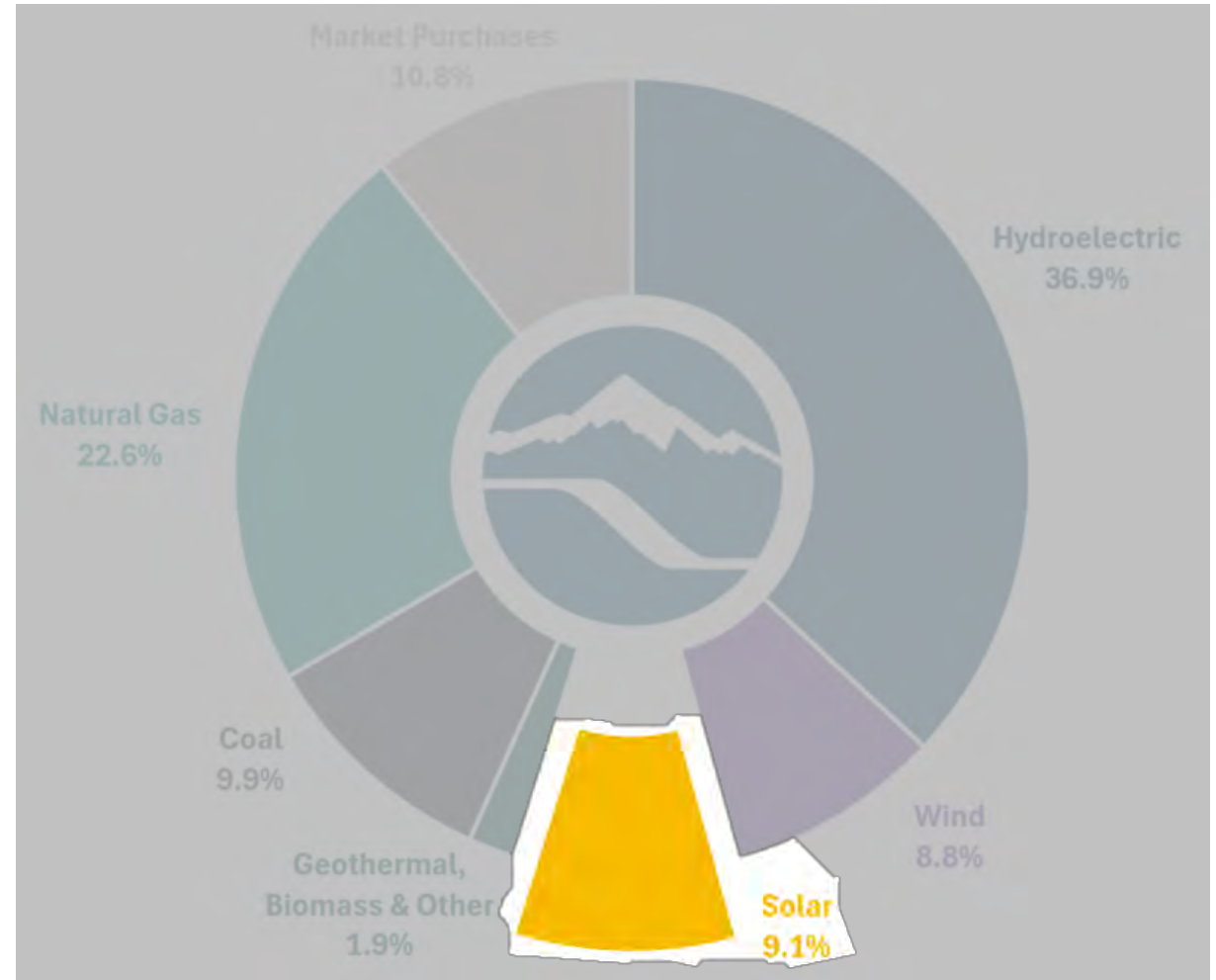
Capacity Factors: Actual Generation as a % of Nameplate



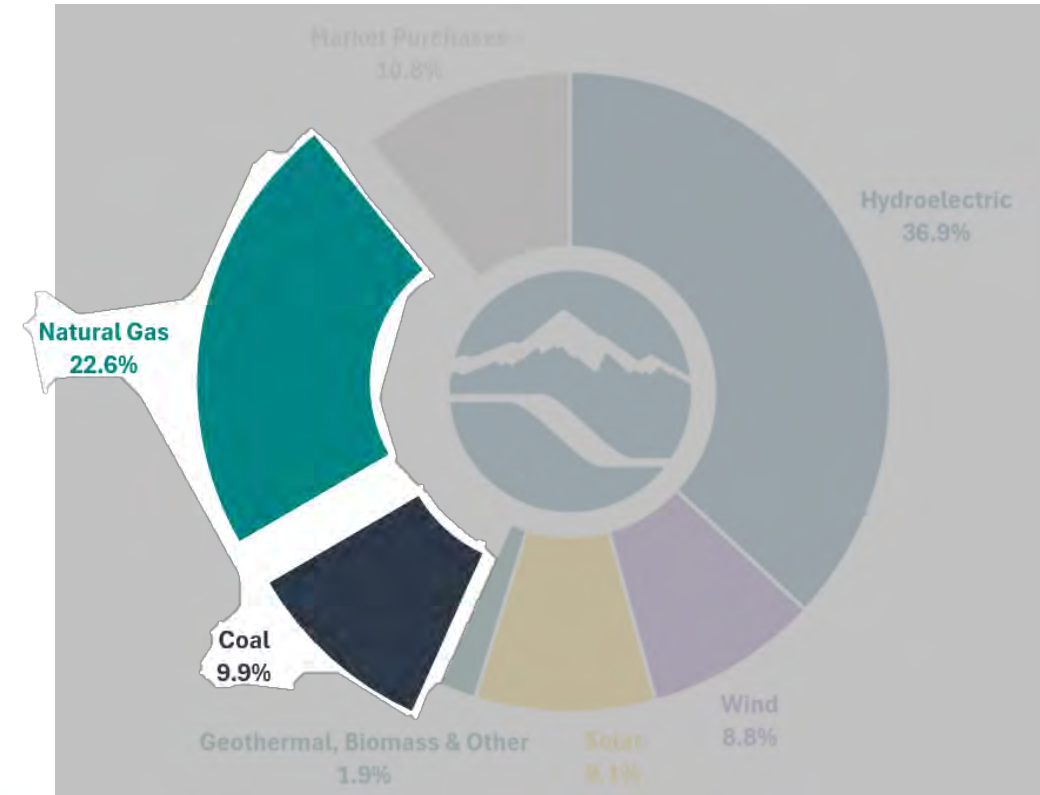
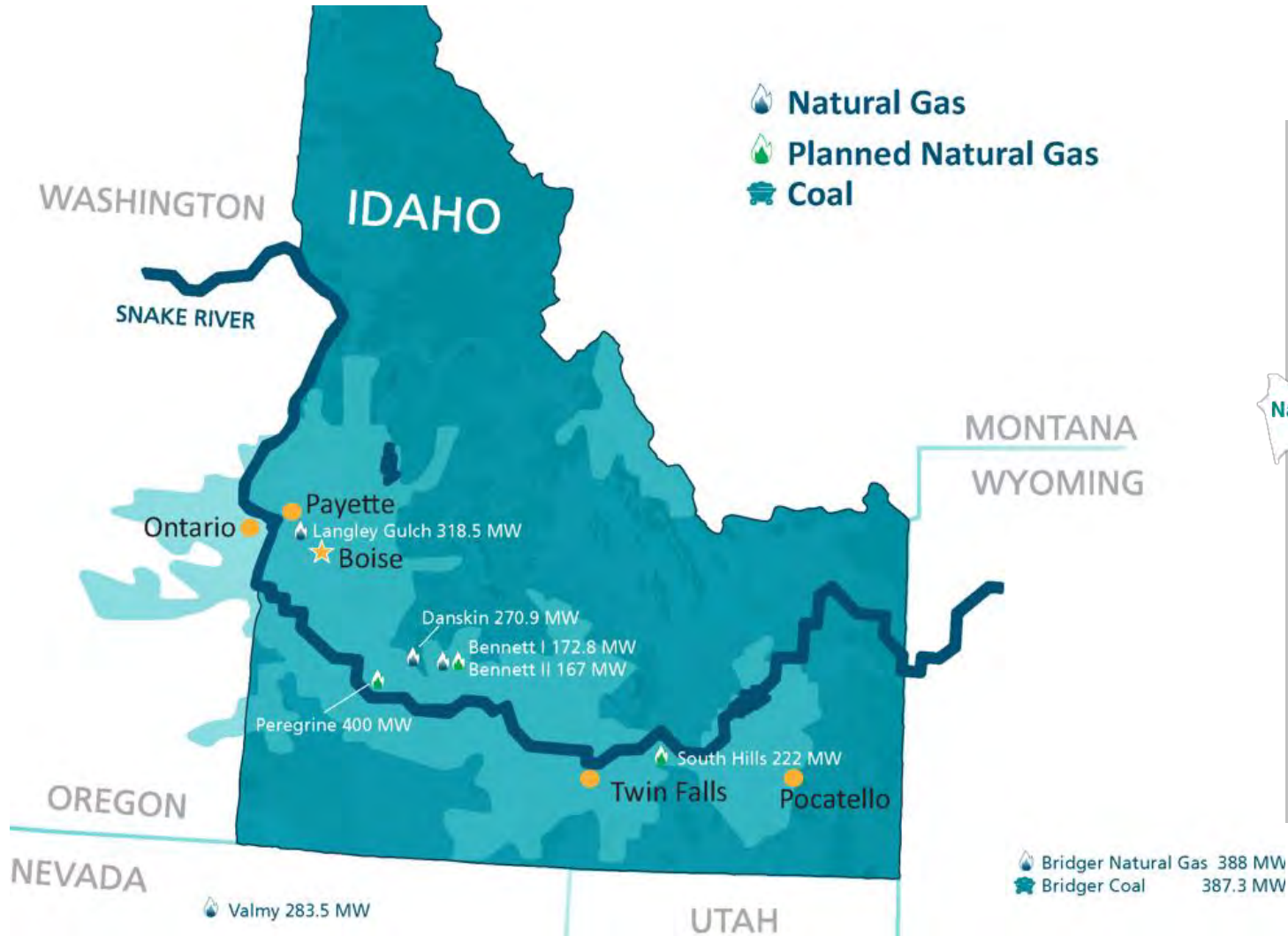
Solar Installed Capacity



Year	New Project	Nameplate
2027	Crimson Orchard	100 MW
2027	Blacks Creek	400 MW
2028	Bluebird	200 MW

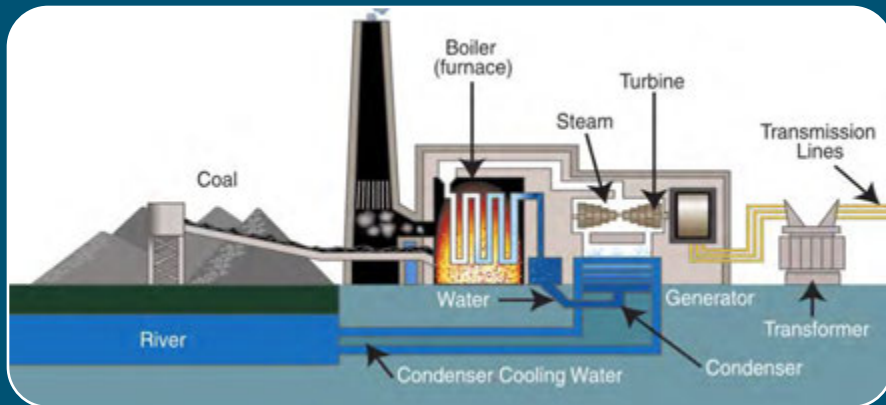


Thermal Generation



Existing Boiler Units

Important Operating Characteristics of Boiler Plants:



- Long start & stop periods, but can be operated with minimal output (low turndown)
- Medium ramp rate & lower thermal efficiency
- **Fun Fact:** The longest operating boiler plant connected to the grid in the United States started operation in 1936.



Jim Bridger Power Plant Units 1-4

Online date: 1974, 1975, 1976, 1979

Total Idaho Power capacity: 706 MW

Fuel: Units 1&2 Natural Gas

Units 3&4 Bridger Coal

Partnership structure:

1/3 Idaho Power

2/3 PacifiCorp

North Valmy Generating Station Units 1&2

Online date: 1981, 1985

Total Idaho Power capacity: 261 MW

Fuel: Natural Gas

Partnership structure:

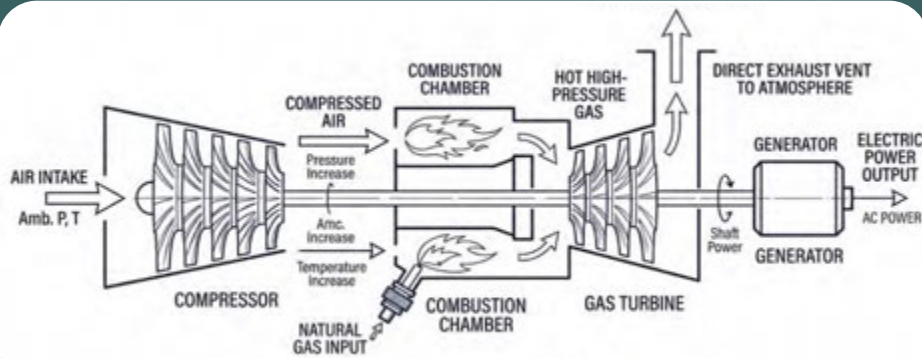
1/2 Idaho Power

1/2 NV Energy



Simple Cycle Combustion Turbines

Important Operating Characteristics of Simple Cycle Combustion Turbines:



- Medium start & stop periods, fast ramp rate
- Has medium operating minimums & low to medium thermal efficiency
- **Fun Fact:** Simple cycle combustion turbines are almost the same technology as the jet on an airliner.



Evander Andrews (aka Danskin) Units 1-3

Online date: 2008, 2001, 2001

Total capacity: 271 MW (179 MW, 46 MW, 46 MW)

Fuel: Natural Gas

Bennett Mountain

Online date: 2005

Total capacity: 176 MW

Fuel: Natural Gas



Peregrine

Expected online date: Pre-Summer 2030

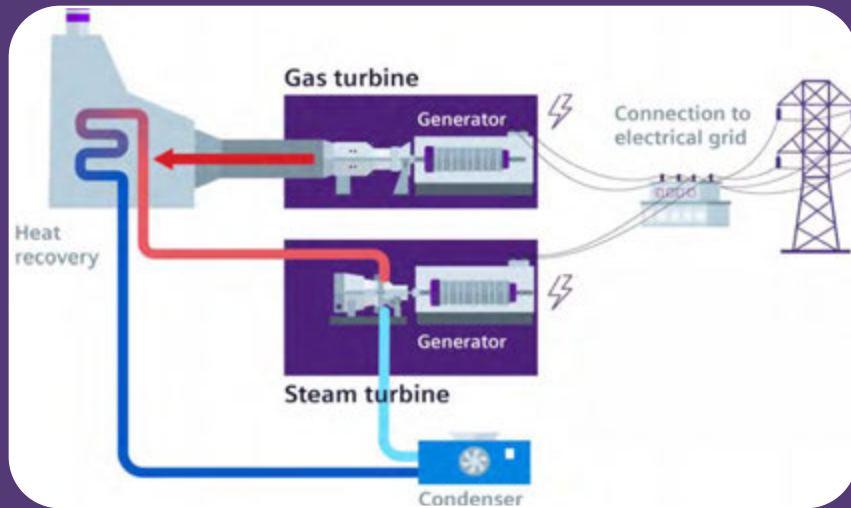
Total capacity: 430 MW

Fuel: Natural Gas



Combined Cycle Combustion Turbine

Important Operating Characteristics of Combined Cycle Combustion Turbines:



- Longer start & stop periods, medium ramp rate
- Has higher operating minimums & high thermal efficiency
- Fun Fact: The combustion turbine & Heat Recovery Steam Generator (HRSG) combo is thermodynamically similar to an engine plus a turbo charger.

Langley Gulch



Online Date: 2012

Total capacity: 318 MW

Fuel: Natural Gas



Reciprocating Internal Combustion Engines



Bennett Expansion (Bennett 2)

Online date: 2028

Total capacity: 167 MW

Fuel: Natural Gas

South Hills

Online date: 2029

Total capacity: 222 MW

Fuel: Natural Gas



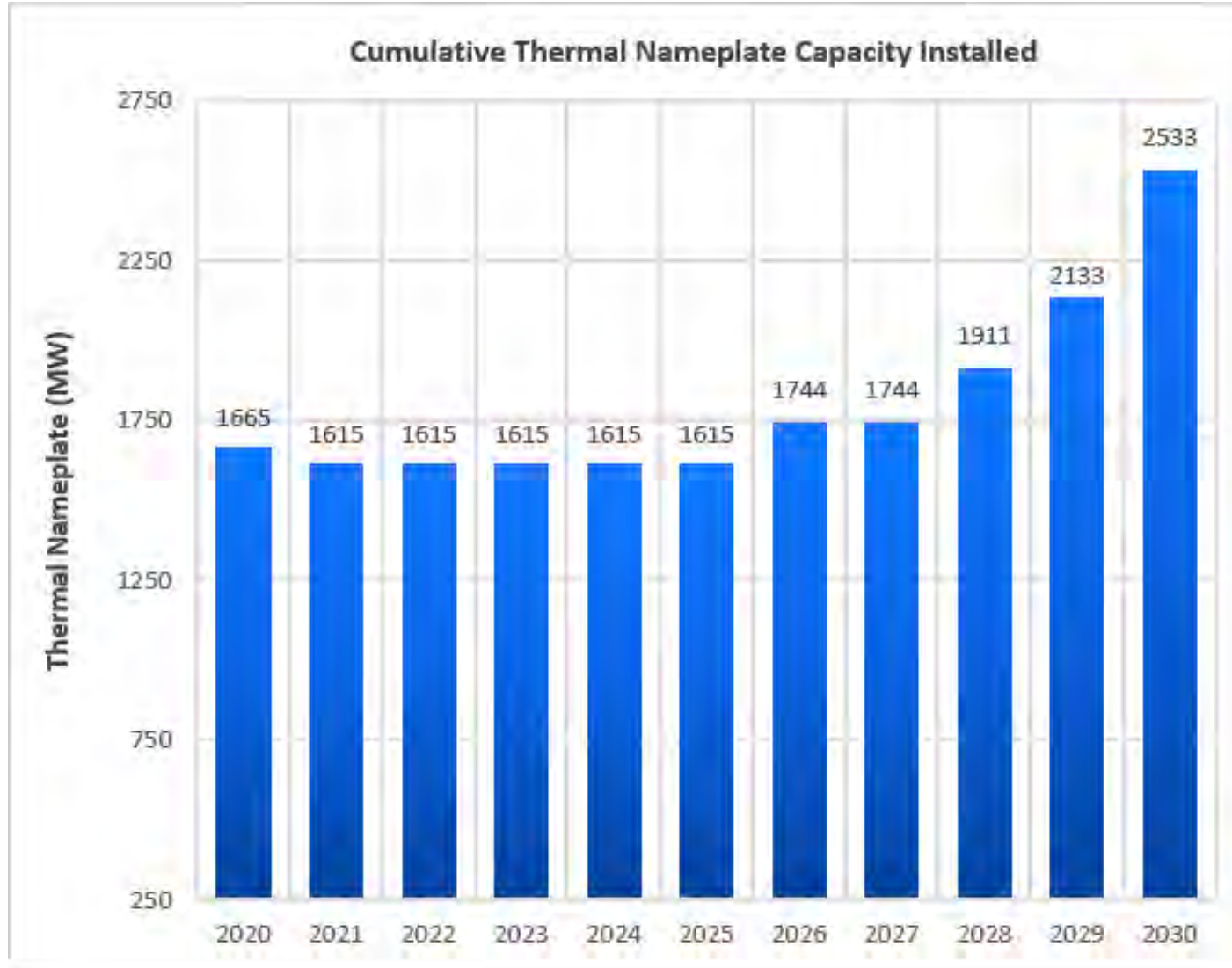
Important Operating Characteristics of Reciprocating Internal Combustion Engines:



- Fast start & stop capability, fast-ramping
- Low operating minimums & modular dispatchability
- Medium thermal efficiency, but consistent even at lower load levels
- Fun Fact: These reciprocating engines are essentially natural gas-fueled versions of the engines that power most cars, but they operate at 26,000 horsepower.



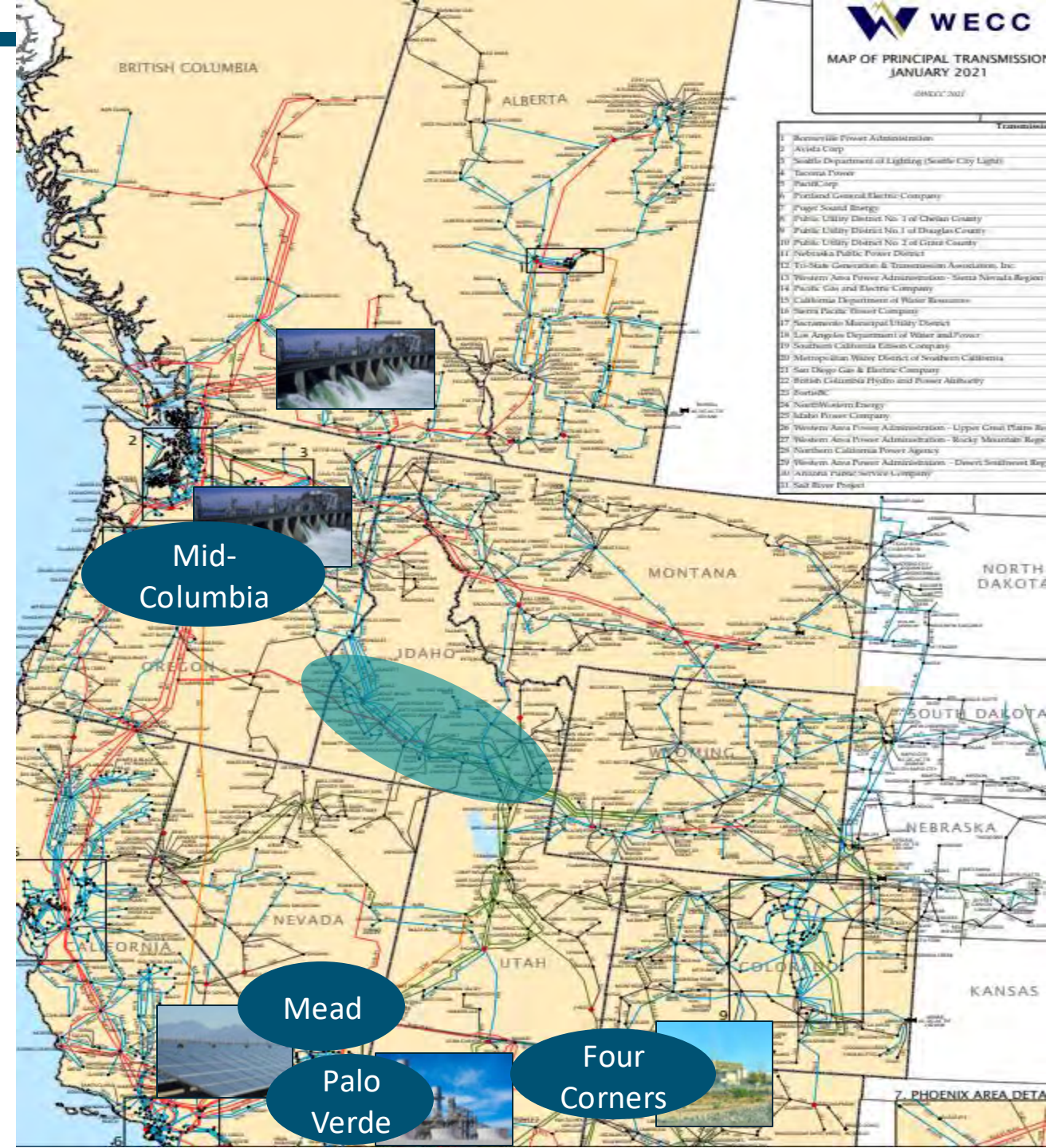
Thermal Generation Installed Capacity



Year	New Project	Nameplate
2028	Bennett Mountain 2	167 MW
2029	South Hills	222 MW
2030	Peregrine	430 MW



Market Purchases + Transmission (aka Imports)





LEGEND

O	±500 kV DC
R	500 kV
G	345 kV – 360 kV
B	230 kV – 287 kV
	LOWER VOLTAGES
C	CONVERT EXISTING FACILITIES
	AC – DC – AC TIE REPRESENTATION
	PHASE SHIFTER

NOTE: DASHED LINES SHOWN ARE SCHEDULED FOR OPERATION IN 2014

Transmission System Overview

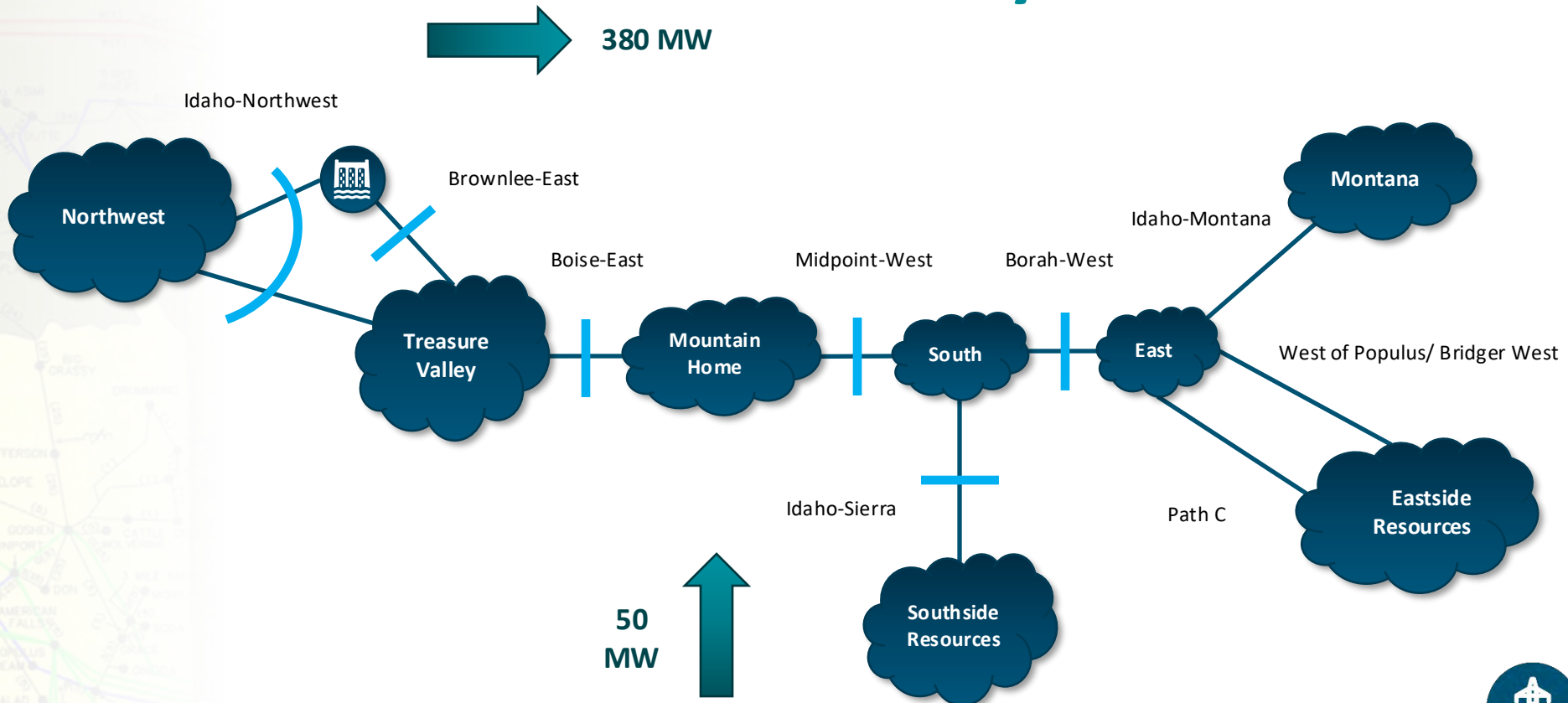
Upcoming 500 kV Transmission Projects

Boardman to Hemingway (B2H)
Southwest Intertie Project-North (SWIP-N)



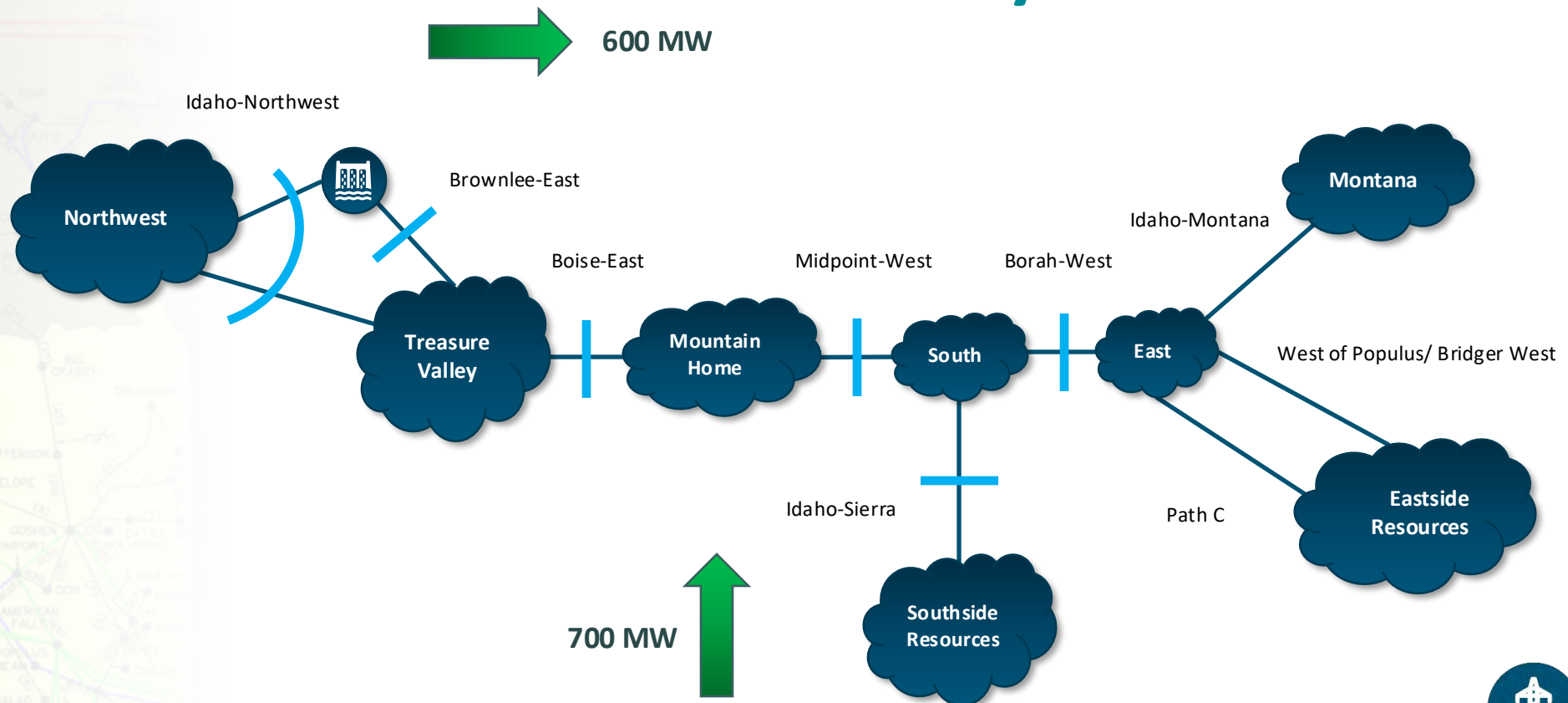
Pre-B2H & SWIP-N

Transmission System Overview



Post-B2H & SWIP-N

Transmission System Overview



Questions

