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September 4, 2024

MEMORANDUM

TO: Council Members

FROM: Tomás Morrissey, Senior Power Analyst

SUBJECT: July Record Peak Load Event

BACKGROUND:

Presenters: Tomás Morrissey

Summary: In early July 2024 the Western US experienced a heat wave. While average regional temperatures did not reach the levels of the 2021 heat dome, the Northwest region set a new summer peak record. Some Northwest balancing areas, including the Bonneville Power Administration balancing area, set records as well. Tomás Morrissey, Senior Power Analyst, will share data and insights on temperatures, loads, resource performance, and power prices during the event.

Relevance: Hot weather in July 2024 stressed the Northwest power system. By studying the event we can learn how the power system performs under extreme conditions. This can help inform the Council's resource adequacy assessments and other planning work.

July 2024 Heatwave

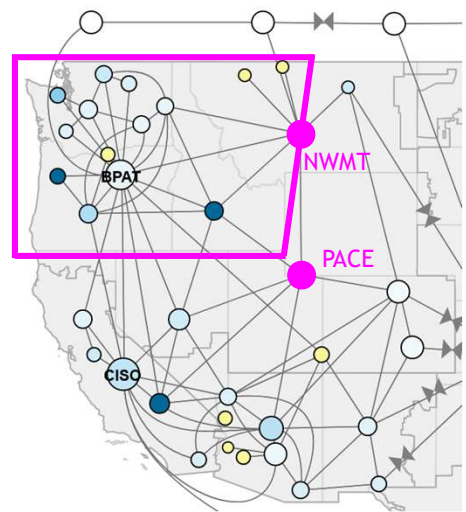
September 2024 Council Meeting
Astoria



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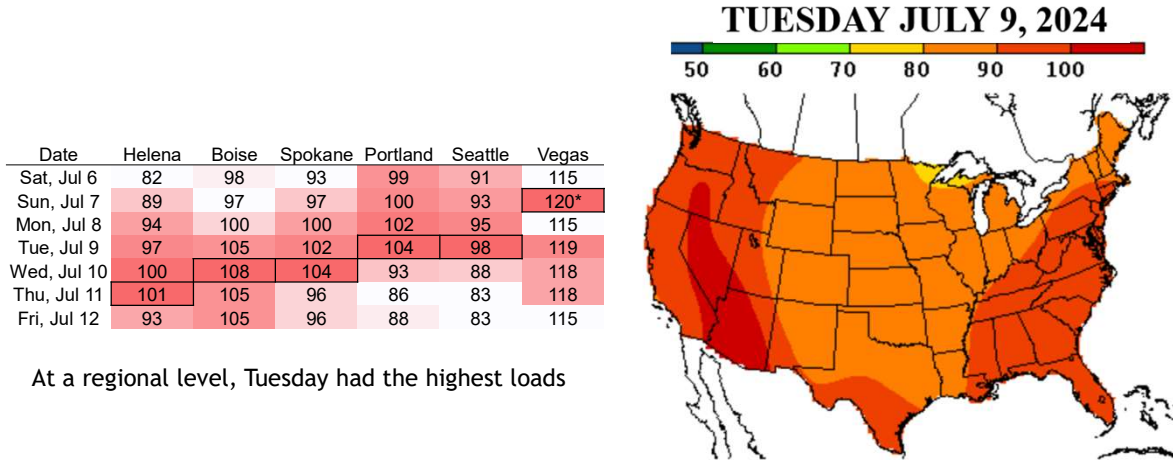
The Northwest footprint

- The Northwest, as defined by the Power Act, includes all of Idaho, Oregon, Washington, and Western Montana
 - This breaks up the Northwestern Energy and PacifiCorp East balancing areas. Some of the material today include those full areas for simplicity
 - Other groups may have different definitions of the Northwest
- The Northwest is part of the larger Western Interconnection



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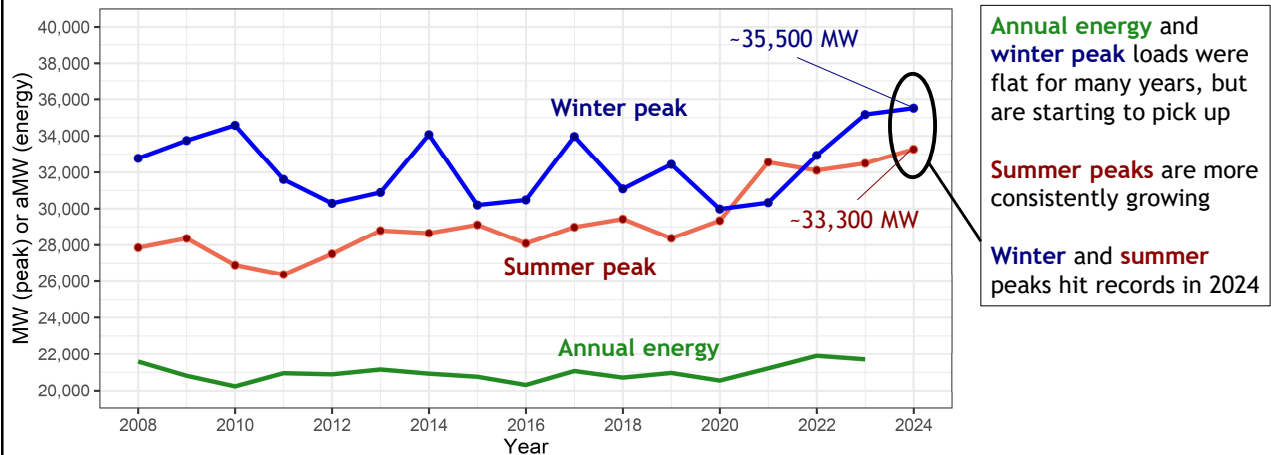
July 2024 Western US heatwave



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Record Northwest peaks in 2024

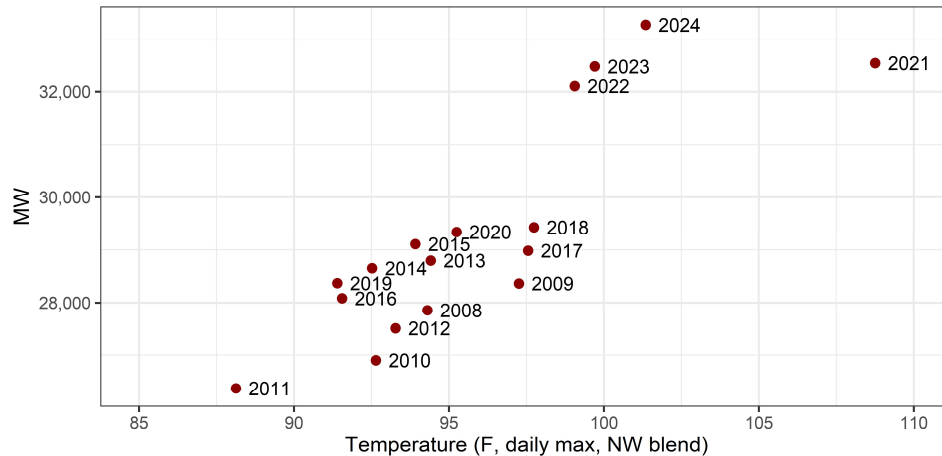
NWPCC region loads



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Historical summer peaks and temps

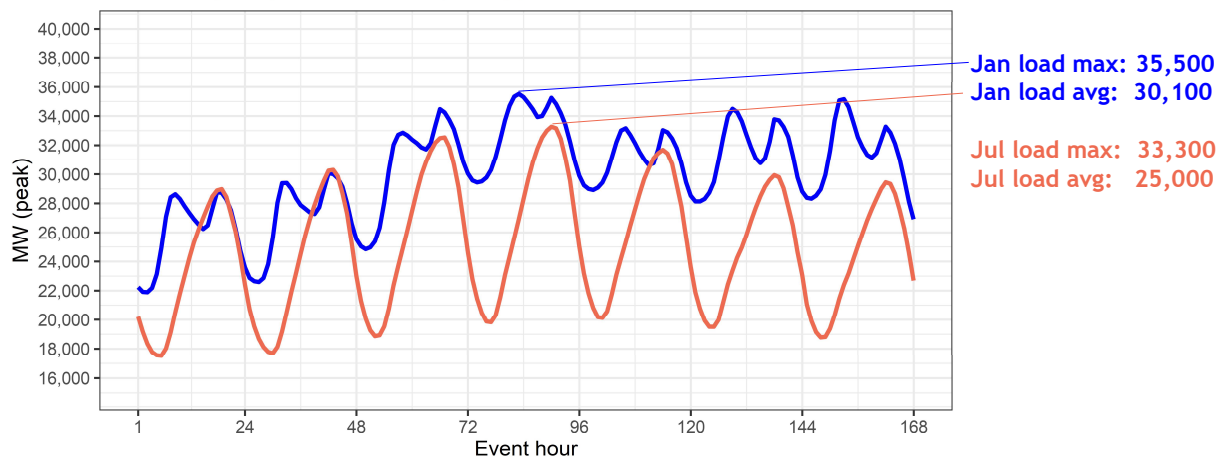
Summer peak loads and regional temperatures



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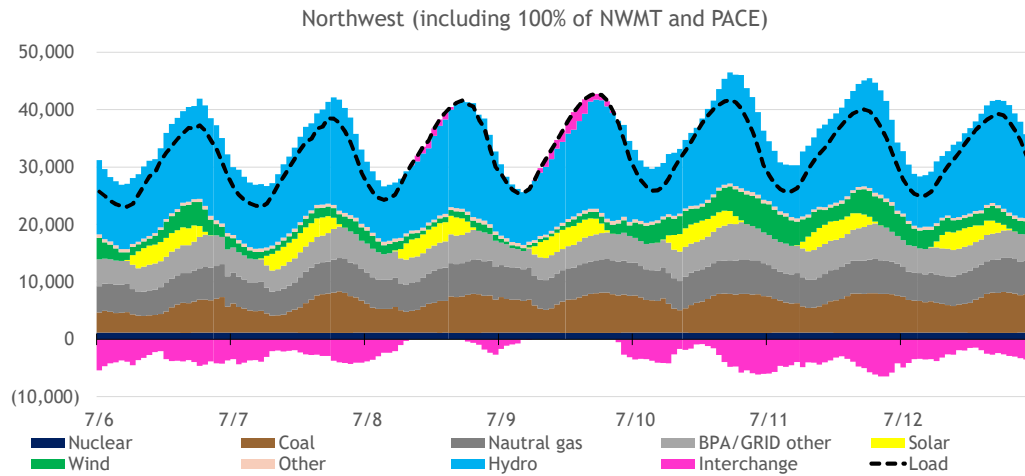
Comparing winter and summer peak loads

Jan 2024 (blue) and Jul 2024 (coral) peak loads



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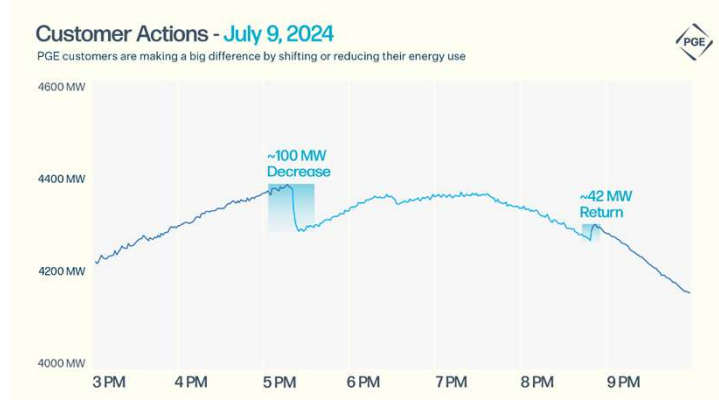
Northwest resource usage *(larger area than NWPCC)*



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Demand side resources during the event

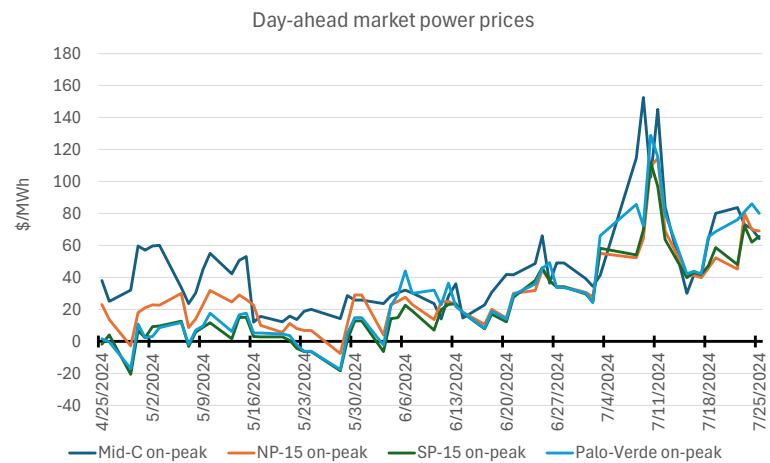
- Some Northwest utilities, like PGE, have demand response programs that help keep peak loads lower
- Additionally, energy efficiency measures over the years have reduced loads by thousands of MWs



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Power prices during the event

Prices were elevated during the event but stayed much lower than prices experienced in January 2024 (which exceeded \$1,000 per MWh).



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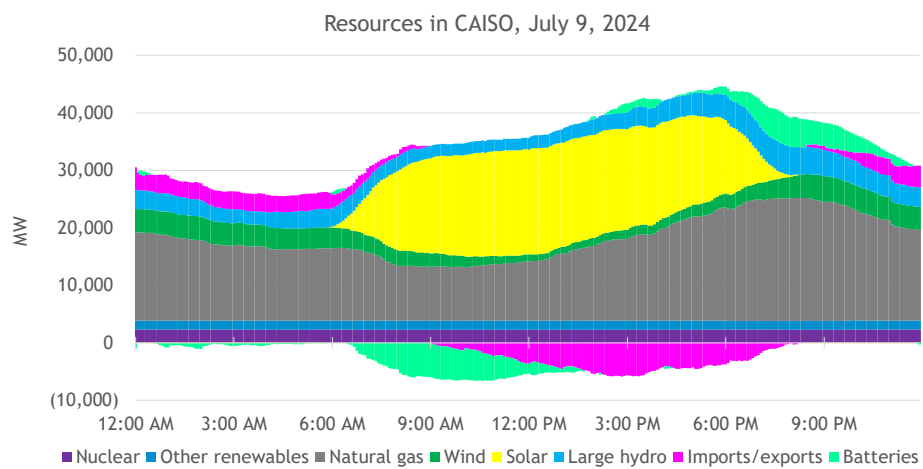
Questions?

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Extra slides

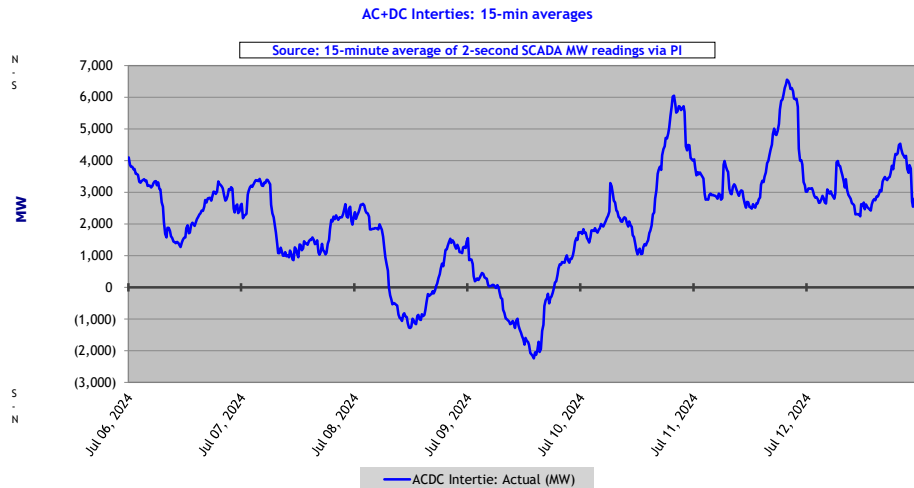
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Resources in CAISO



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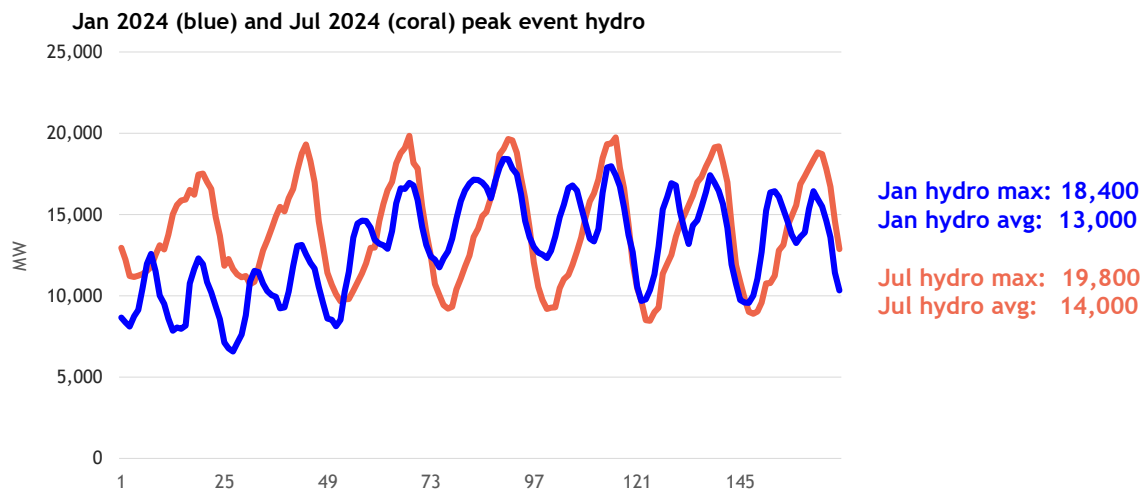
AC+DC intertie during the event



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Comparing winter and summer event hydro



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