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March 7, 2017

MEMORANDUM

TO: Council members

FROM: Ben Kujala, Power Division Director

SUBJECT: Northwest Regional Forecast Presentation by Pacific Northwest Utilities Conference Committee

BACKGROUND:

Presenter: PNUCC Staff

Summary: The Pacific Northwest Utilities Conference Committee (PNUCC) has released their annual update to the Northwest Regional Forecast (NRF). PNUCC will summarize the report and discuss the details of their findings.

The 2017 report will be discussed at the meeting. To review past reports visit them on the web here:

<http://www.pnucc.org/system-planning/northwest-regional-forecast>



Draft
Northwest Regional Forecast

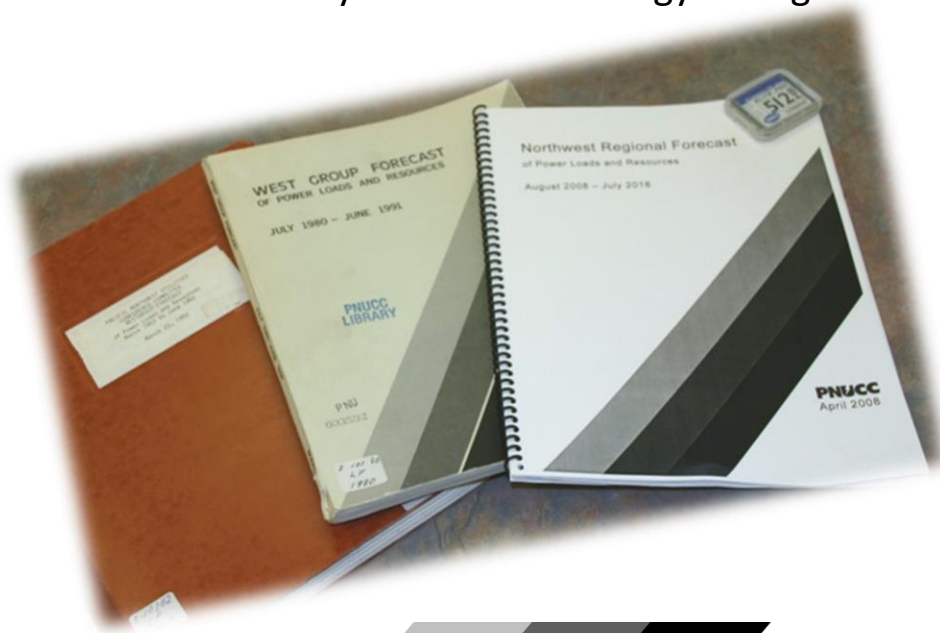
Northwest Power & Conservation Council Meeting

March 15, 2017

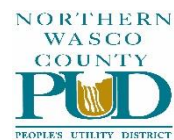
What is the *Forecast*?

65 years of consistent information

- Normal weather loads
- Low water conditions for hydropower
- Expected operations for generation
- Long-term contracts only
- Utility forecasts of energy savings



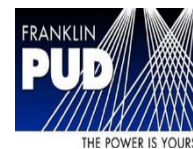
A regional adequacy barometer



Bonneville
POWER ADMINISTRATION



Clark
Public
Utilities



CHELAN COUNTY



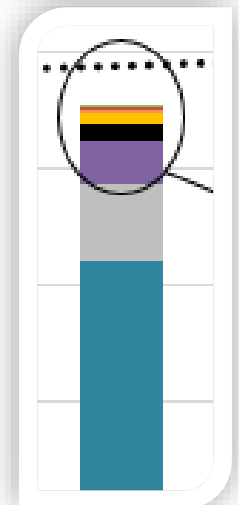
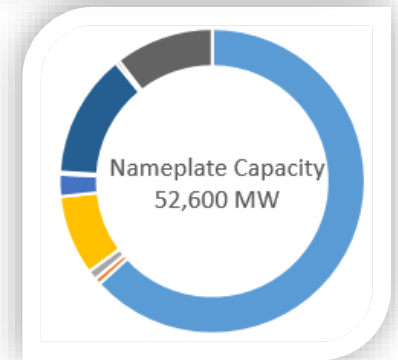
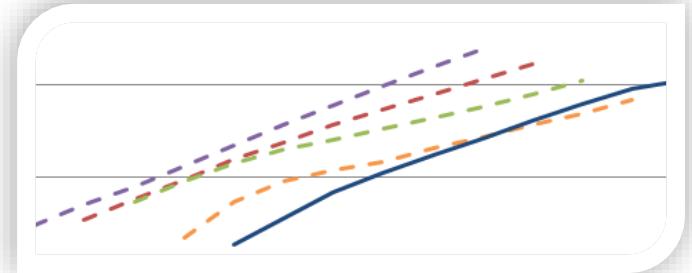
www.flatheadelectric.com



- ✓ Sum of utilities firm requirements and resources
 - ✓ Omits non-utility owned resources & spot imports
- ✓ Annual energy and 1-hour winter/summer peak
 - ✓ Normal weather loads; critical water; planning margin 12% & grows 1%/year

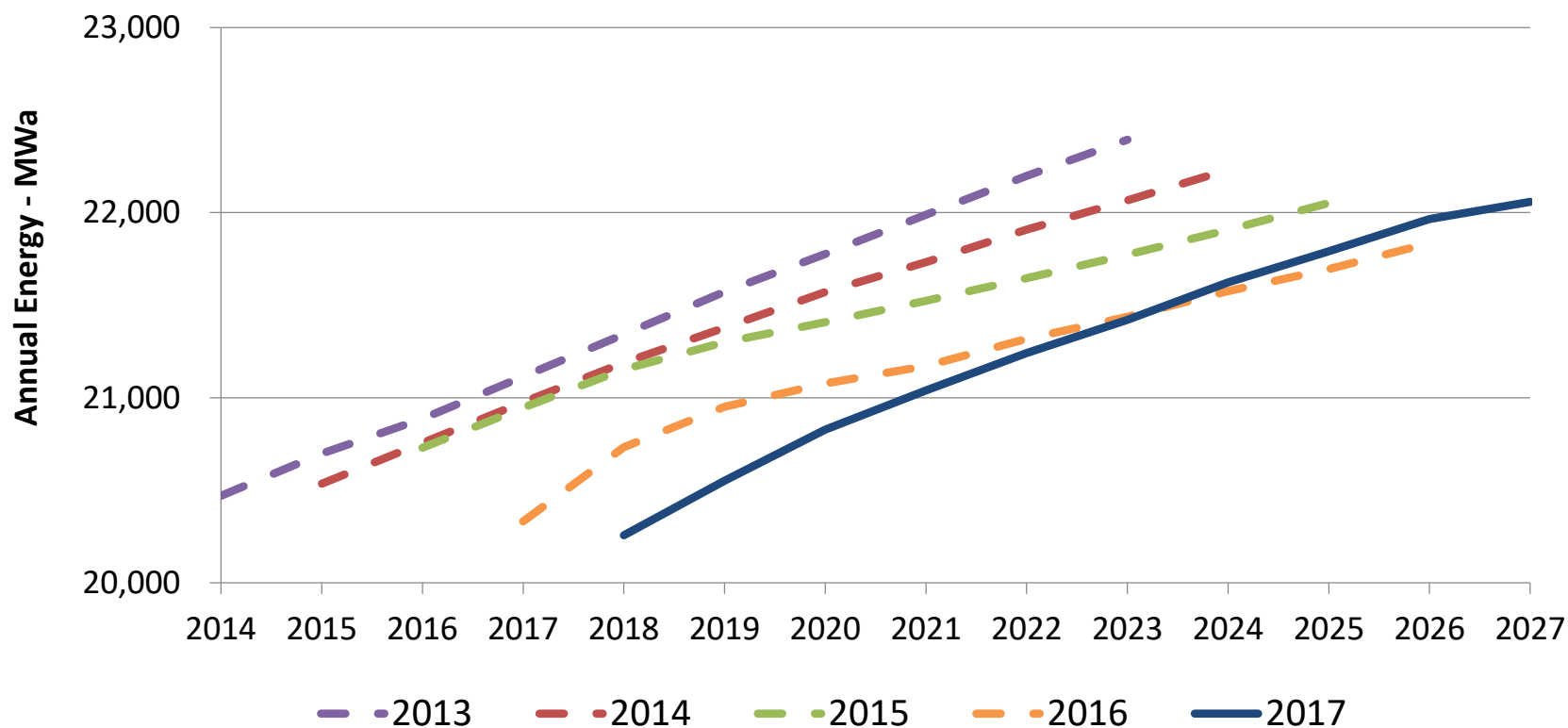
Main points

- Load expectations slip again
 - Varies *significantly* by utility
- Hydropower is a valuable resource
- Focus is winter need at 3,200 MW by 2021
- Energy efficiency acquisitions & demand response programs remain steady
- Planned resources surround coal retirements
 - Few firmly committed resources on the horizon, in part due to regulatory/energy climate uncertainty



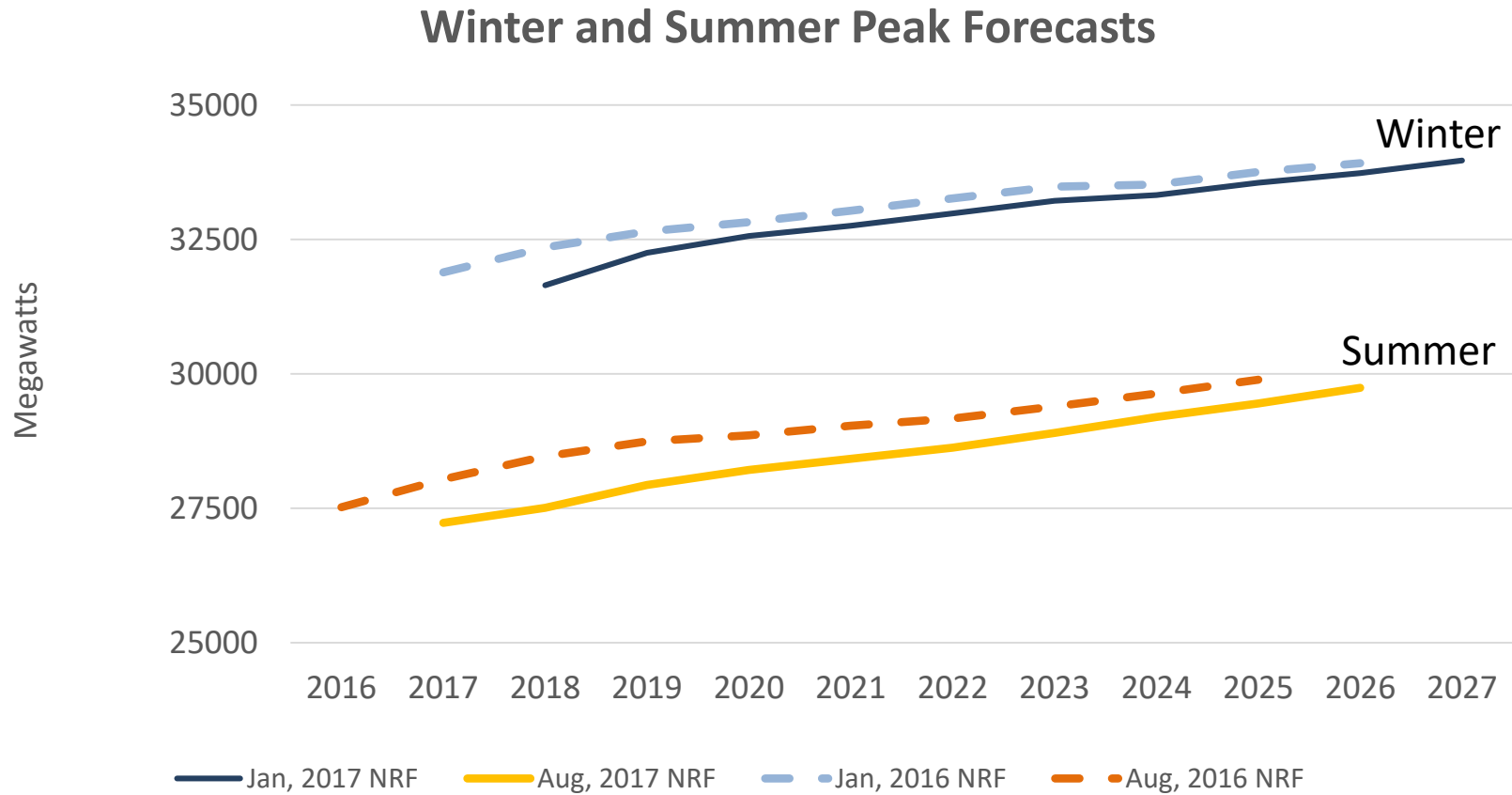
Load forecasts slip

**Regional Firm Energy Load
2013 - 2017 Forecasts**



Peak forecasts slip too

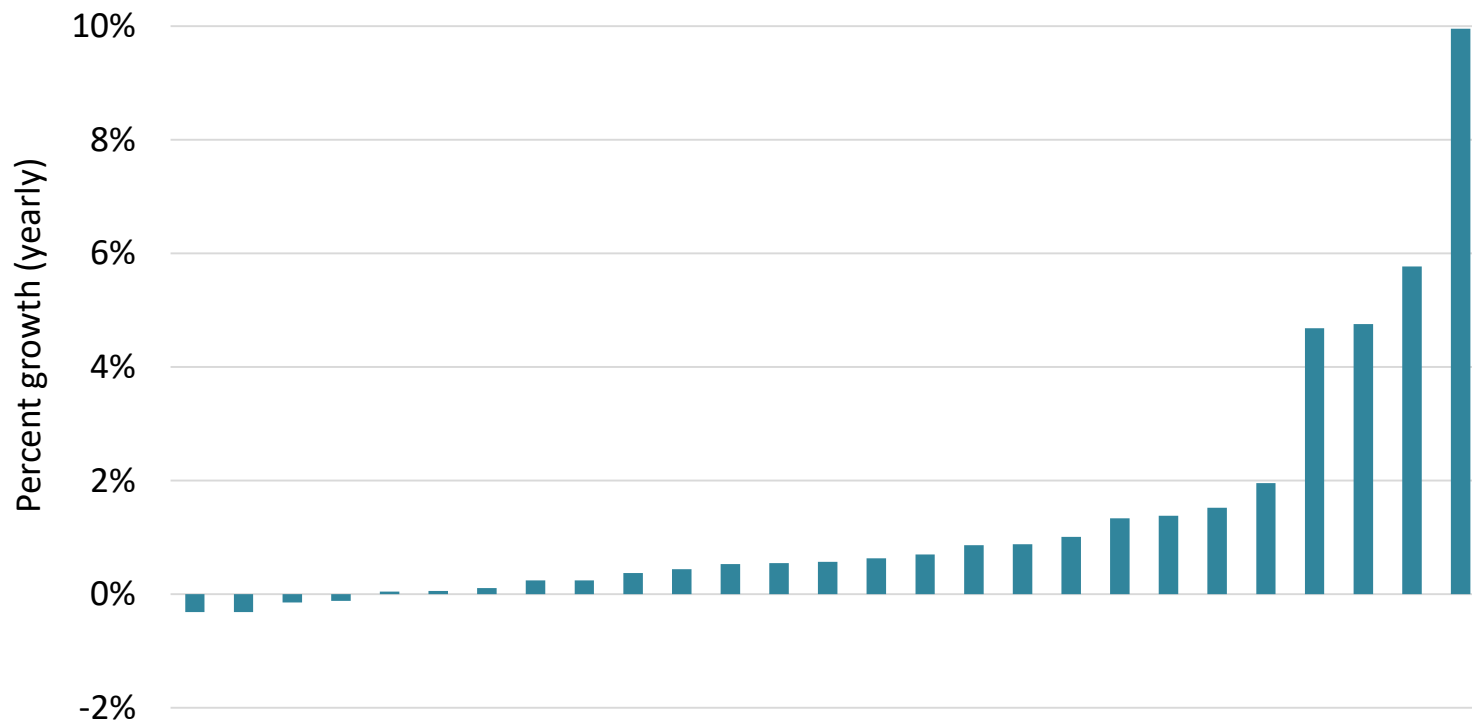
Mostly due to DSI load expectations, federal system coincident peak calculation



Every utility is different

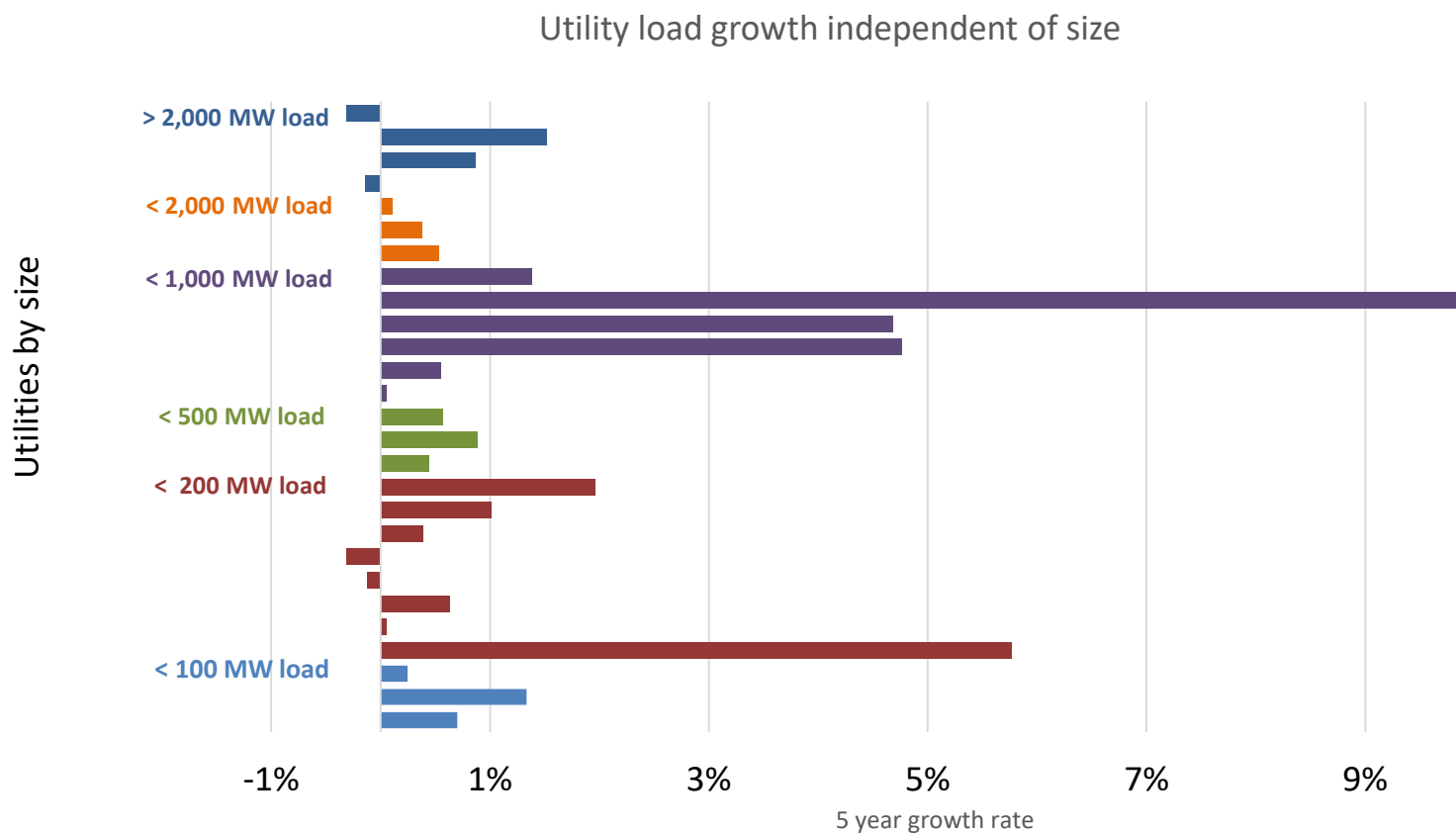
Expectation of new industrial load(s) driving high growth utilities

Utility Load Growth Next 5 Years



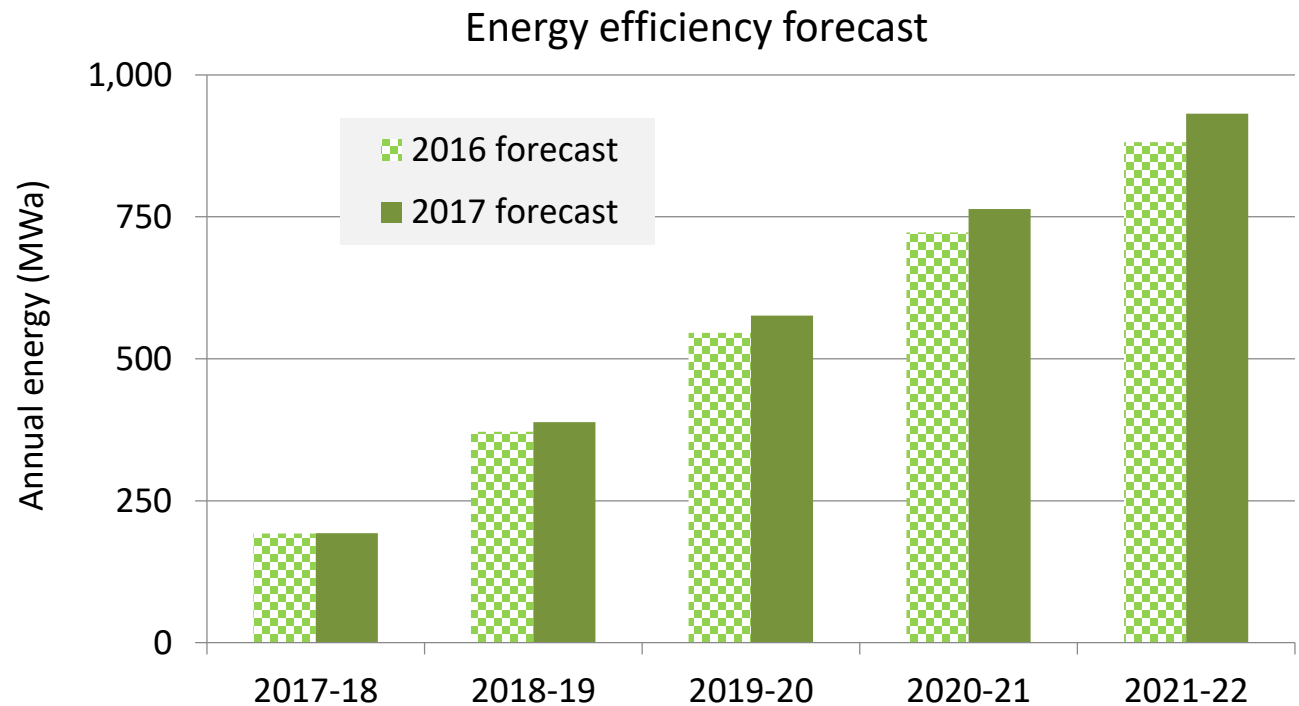
Every utility is different

Expectation of new industrial load(s) driving high growth utilities

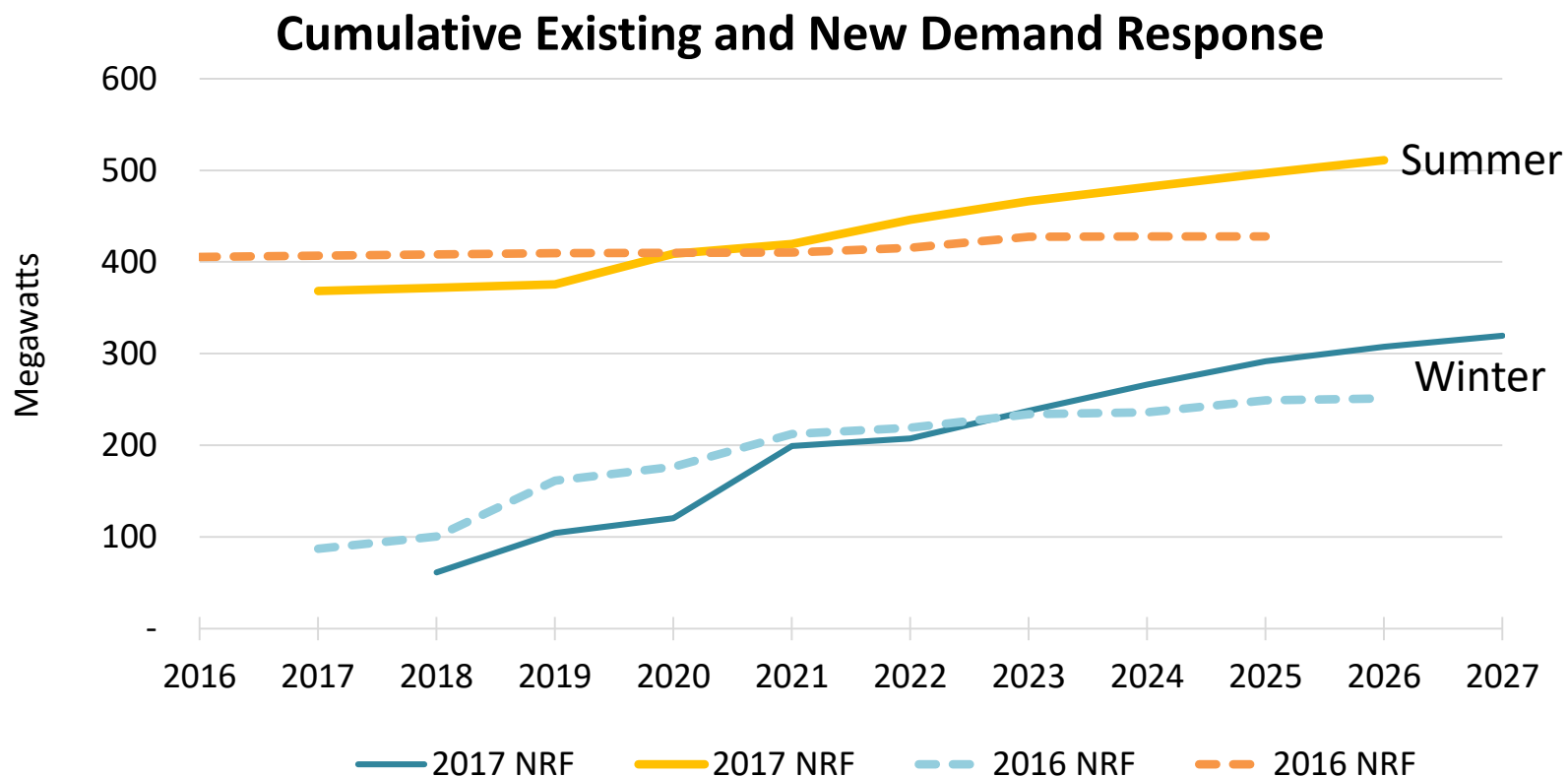


Energy efficiency adding up

Cumulative savings similar to last year

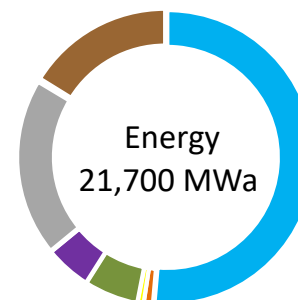
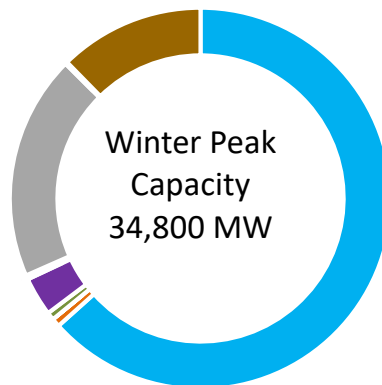
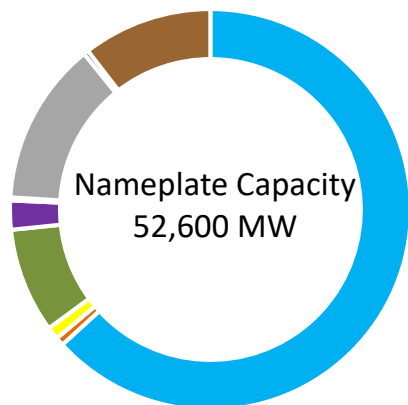


Demand Response – little change



Hydro – NW power industry workhorse

Existing Generating Resources



■ Hydro

■ Wind

■ Natural Gas

■ Renewables-Other

■ Nuclear

■ Cogeneration

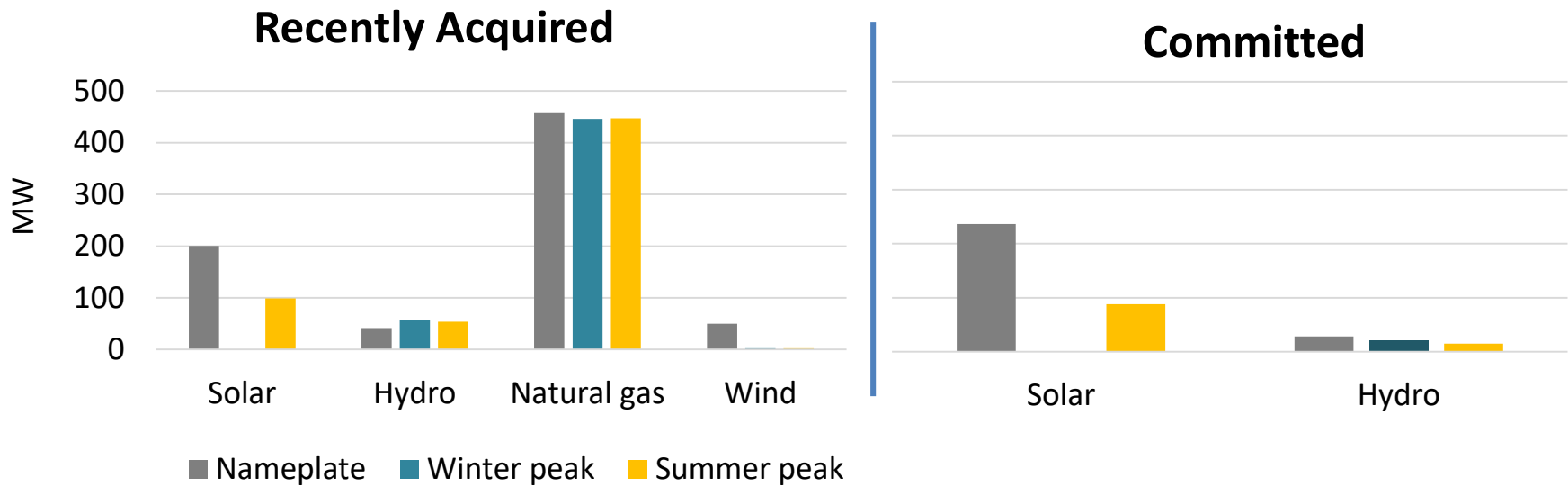
■ Solar

■ Small Thermal & Miscellaneous

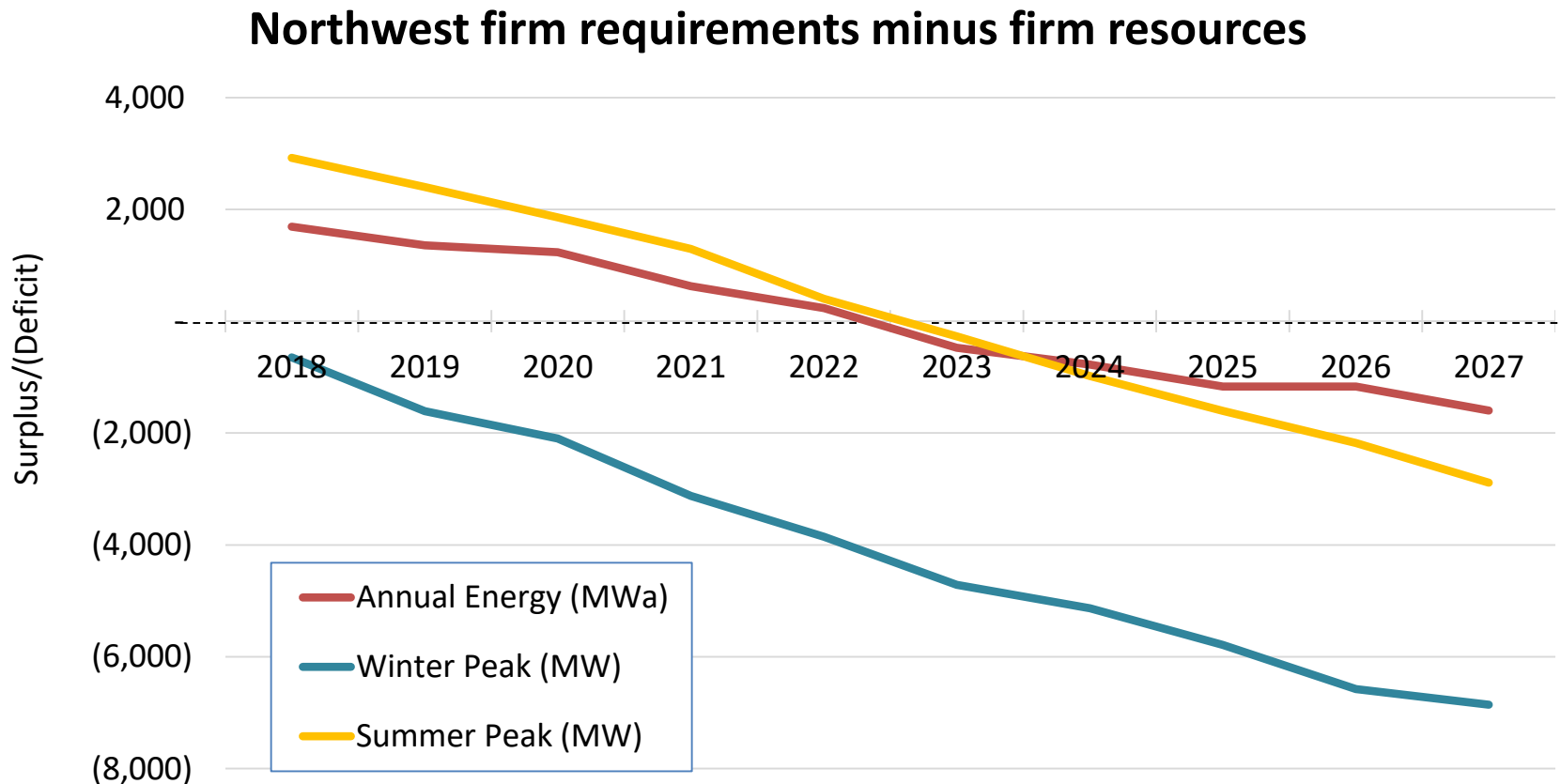
■ Coal

Resource development changing

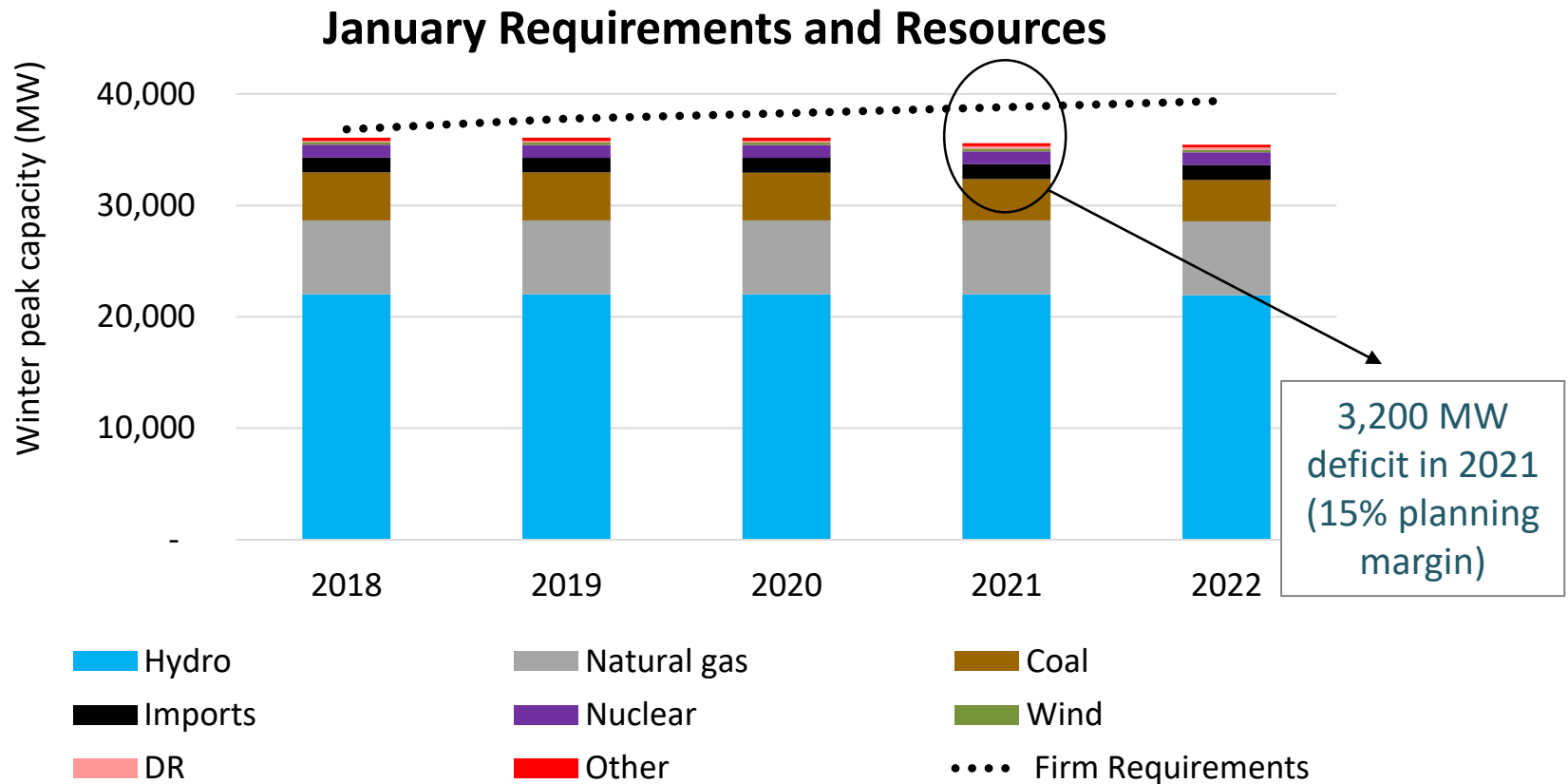
Upcoming resources mostly PURPA, not much else in the pipe



Winter need is the focus

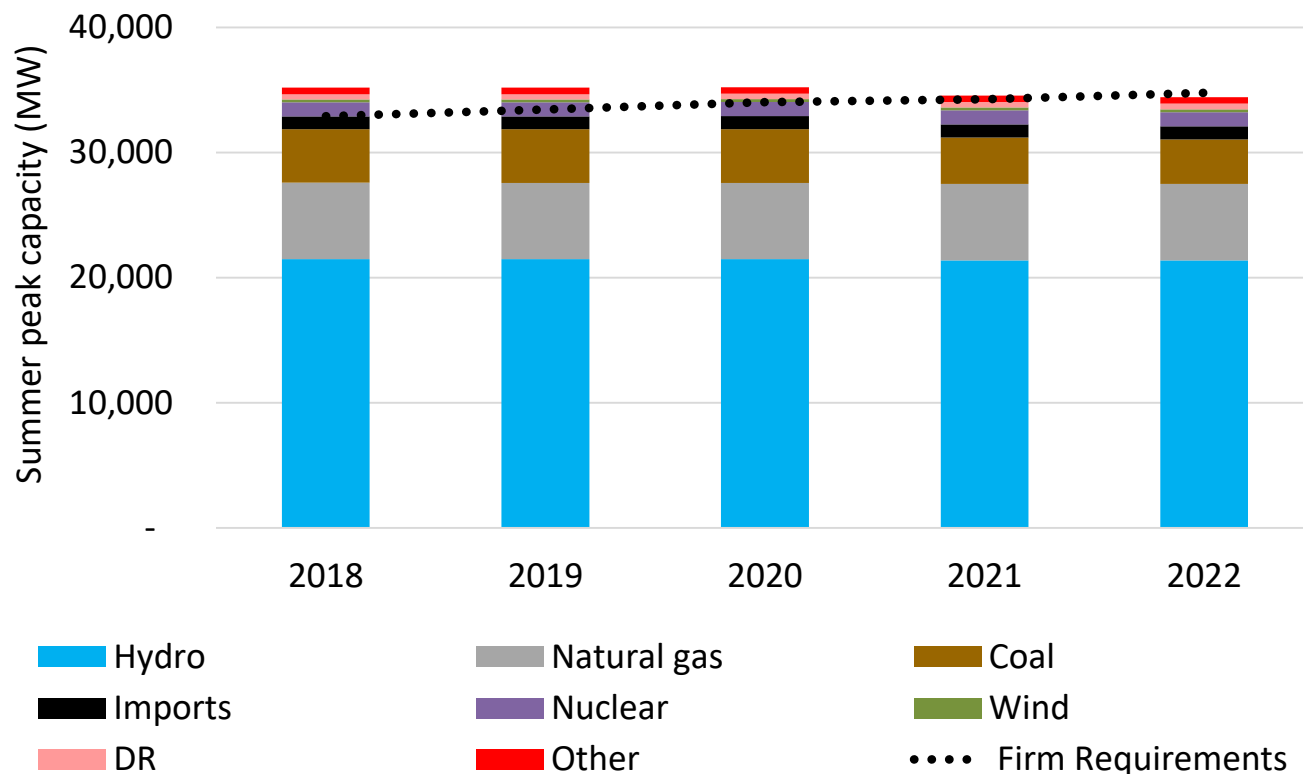


Winter peak resource stack falls short



Summer peak picture more comfortable...

August Requirements and Resources



Likely less market resources available in summer, could create challenges for some utilities.

Foggy road ahead

Regulatory uncertainty adds to the fog



LNG_exports
Trump
SCOTUS
FERC
Codes & Standards
111(d)
new_loads
Perry
EPA
RPS
carbon_tax
state_policies
flat_growth

Future resources picture will get clearer

Planned resources generic/fill in around coal retirements

Cumulative nameplate MW	2017	2018	2019	2020	2021	2022
Solar		3	3	3	3	3
Hydro		9	18	26	26	26
Natural gas				96	373	373
Wind		515	515	515	515	515
Landfill gas				9	9	9
Capacity resource		290	318	318	461	461
Dispatchable resource					389	389

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