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July 5, 2023

MEMORANDUM

TO: Power Committee Members

FROM: Tina Jayaweera, John Ollis

SUBJECT: Considering Emerging Technologies in Power System Planning

BACKGROUND:

Presenters: John Ollis, Tina Jayaweera

Summary: To help sustain an efficient, economical, reliable, and adequate power system, emerging technologies will need to become available. Staff will explain what gaps are currently seen in conventional technologies and how emerging technologies are considered in the power plan development process.

Relevance: As part of preparing for the next plan, staff track potential new technologies that may fit into the future power system. This practice is also consistent with utility integrated resource planning practices throughout the region and within the language of the Northwest Power Act.

Workplan: Track emerging technologies, both supply and demand side, providing periodic updates to the Council.

Background: The resource strategy in the Council's power plan is to give priority to conservation and generation resources that are "cost-effective." To be "cost-effective" under the Northwest Power Act, a resource not only has to meet or reduce load at a cost less than other resources, it also has "to be reliable and available within the time it is needed." Section 3(4)(A)(i).

If a resource is not available but has promise or potential for becoming an available and cost-effective resource within the plan horizon or further in the future, there are a couple of provisions in the Act that make it useful to consider in our planning and to help that development along. One of the required elements of the plan is “recommendations for research and development.” Section 4(e)(3)(B). We typically use this section of the plan to identify and provide development assistance to promising but not yet available resources.

Over the past year, the Council has heard several presentations related to emerging technologies, including in energy efficiency and small modular reactors. In addition, a presentation on evolving trends in battery storage will occur during this month’s meeting.

More Info: In February, Mark Rehley of NEEA presented to the Power Committee on some emerging [energy efficiency options](#) that NEEA is tracking. In the fall of '22 and early winter of '23, the Council had three presentations on small modular reactors (a tour of NuScale facility in October, Grant PUD’s [plans](#) in November, PacifiCorp’s [plans](#) in February).