

PNNL-39650

Regional Energy Needs Planning Process (CRADA 670) Final Report

July 2026

Scott L Morris

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Prepared for the U.S. Department of Energy under Contract DE-AC05-76RL01830

Pacific Northwest National Laboratory
Richland, Washington 99354

Cooperative Research and Development Agreement (CRADA) Final Report

Report Date: July 2026

In accordance with Requirements set forth in the terms of the CRADA, this document is the CRADA Final Report, including a list of Subject Inventions, to be provided to PNNL Information Release who will forward to the DOE Office of Scientific and Technical Information as part of the commitment to the public to demonstrate results of federally funded research. **PNNL acknowledges that the CRADA parties have been involved in the preparation of the report or reviewed the report.**

Parties to the Agreement:

Pacific Northwest National Laboratory (PNNL), and the Washington State Department of Commerce.

CRADA number: 670

CRADA Title: Regional Energy Needs Planning Process

Responsible Technical Contact at DOE Lab (PNNL): Jason Eisdorfer

Name and Email Address of POC at Partner Company(ies): Glenn Blackmon
(glenn.blackmon@commerce.wa.gov)

Sponsoring DOE Program Office(s): [former] Grid Deployment Office

Joint Work Statement Funding Table showing DOE funding commitment:

	Funding Amounts			
CRADA Parties	DOE Funding	Funds-In	*In-kind	Total
Participant(s)	N/A	\$850k	\$66k	\$850k
DOE Funding to PNNL	\$1.5M	N/A	N/A	\$1.5M

Total of all Contributions	\$1.5M	\$850k	\$66k	\$2.35M
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Provide a list of publications, conference papers, or other public releases of results, developed under this CRADA:

This CRADA between the Washington State Department of Commerce (WA Commerce) and PNNL was terminated by mutual consent in September 2025, prior to all project objectives being completed. Deliverables provided, as agreed upon between WA Commerce and PNNL, include:

- *End of Calendar Year 2024 Project Update*
- *Compiled Streamflow Data for the Region*
- *Most Current Study Plan – The Outcome of Technical Committee Meetings*
- *Lower Snake River Dams Contribution to Grid Services Report*

Provide a detailed list of all subject inventions, to include patent applications, copyrights, and trademarks:

No subject inventions were generated under this CRADA.

Executive Summary of CRADA Work

The original intent of this research was to convene regulators, utility stakeholders, tribes, and the general public/consumer, in a regional analysis spanning Idaho, Montana, Oregon, and Washington. The project was designed to include input from a robust and representative collection of interested parties from across the region. Two committees were formed: Steering and Technical.

The Steering Committee was responsible for establishing a charter for the project. In practice, this never happened because of forced pauses to the project. The members of the Steering Committee included executive and upper-level management-type members. The charge of the Steering Committee was to give high-level direction to, and to approve, the specific inputs the Technical Committee proposed.

The Technical Committee was formed by invitation only and was not open to the public. It met from December 2024 through May 2025. The work of the committee leaned on subject matter experts from across the region and reflected a high degree of professionalism, technical collaboration, and consensus. PNNL staff displayed exemplary organizational and technical expertise in presenting materials, leading discussions, and responding to feedback. This project was terminated early, and the entire scope of the project (both for DOE and for WA Commerce) was therefore incomplete. Despite the early termination, the PNNL team developed capabilities, processes, and intra-Lab relationships that have been integrated into other modeling projects within the institution. This CRADA delivered value to WA Commerce while the CRADA was in place. PNNL has developed innovative modeling capabilities and processes that have improved its modeling work.

The outputs from this work include the four deliverables mentioned earlier:

- End of Calendar Year 2024 Project Update*
- Compiled Streamflow Data*
- Study Plan*
- Lower Snake River Dams Contribution to Grid Services Report*

Summary of Research Results

This section briefly describes the CRADA outcomes and benefits to both PNNL and WA Commerce.

Reasons for Cooperation:

The original intent of this project was the development of an analysis and stakeholder engagement-based planning process designed to advance the resource development and infrastructure investment that will be required to meet the economy-wide decarbonization and resource adequacy requirements and goals of the Pacific Northwest region and to identify within that analysis potential combinations of specific resources capable of replacing the energy services of the lower Snake River dams in the context of meeting the region's decarbonization goals, in the event that Congress authorizes power replacement and breach of dams. When the federal government withdrew from a settlement of issues related to the Lower Snake River dams, the Department of Energy was no longer obligated to study the energy services concerning dam replacement.

Benefit to PNNL/DOE:

DOE benefits because the analysis fulfills a commitment of the U.S. Government to conduct a Regional Energy Needs Planning Process. PNNL benefits because the project provides an opportunity to develop and apply advanced analytical tools and methods in the context of a regional energy analysis.

Benefit to CRADA Participant:

WA Commerce has an interest in advancing the analytical capabilities, data, and methods available for power planning in the state and region and in developing specific resource plans. This planning process is a key component to accelerating the regional infrastructure investment and buildout necessary both to meet regional goals.

As part of the CRADA termination process, WA Commerce and PNNL agreed upon the completion of the four deliverables noted in this document. As a result of terminating this CRADA, PNNL was unable to assemble and run data/inputs through the entire modeling toolchain, and accordingly, WA Commerce was unable to obtain an analysis looking specifically at the energy impacts of breaching the 4 lower Snake River dams. Although the full extent of the analysis (and therefore all of the initially-envisioned deliverables) was not completed, WA Commerce received the 4 deliverables noted in this document, and PNNL developed advanced modeling capabilities and a modeling toolchain that are helping in regional-level analyses going forward.

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