

Institute for Northwest Energy Futures

Leading the Way to a Resilient & Reliable Energy Future

Noel Schulz

Inaugural Director, INEF

Bob Ferguson Endowed Professor

Washington State University Tri-Cities



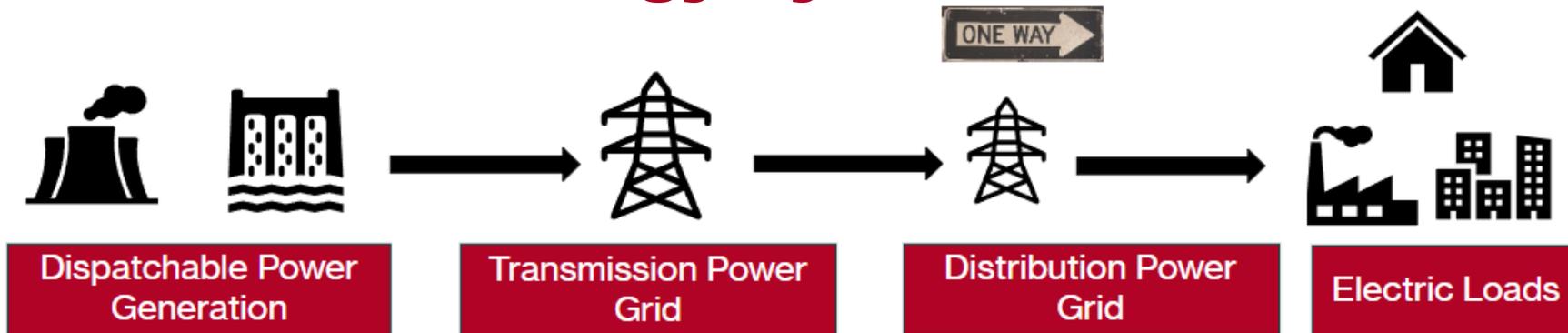
WSU TRI-CITIES

Institute for Northwest Energy Futures

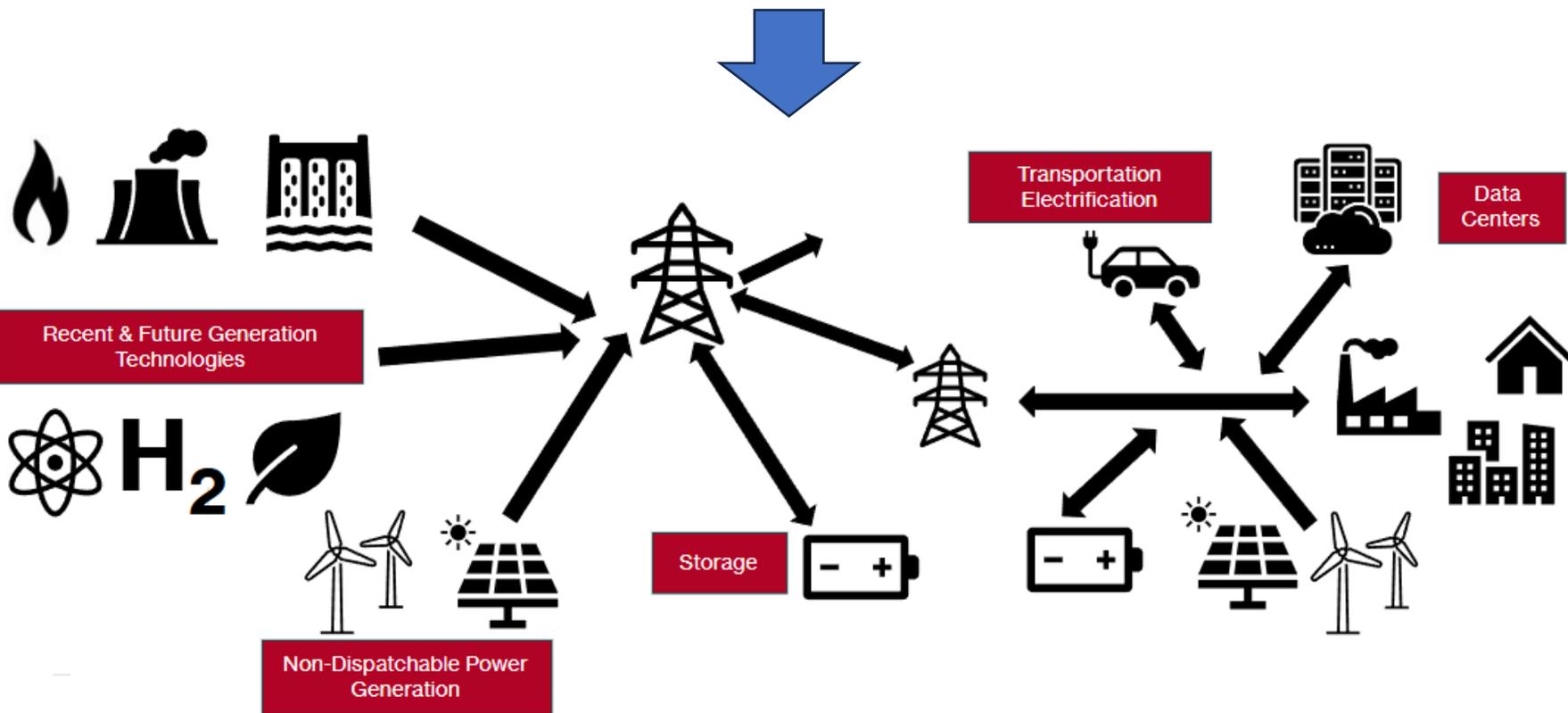


Supporting Evolution of our Energy System for the Future

Past



Present and Future –
Moving towards reliable
and resilient energy goals





How do we get out of our silos across the energy ecosystem and work towards coordinated system solutions?





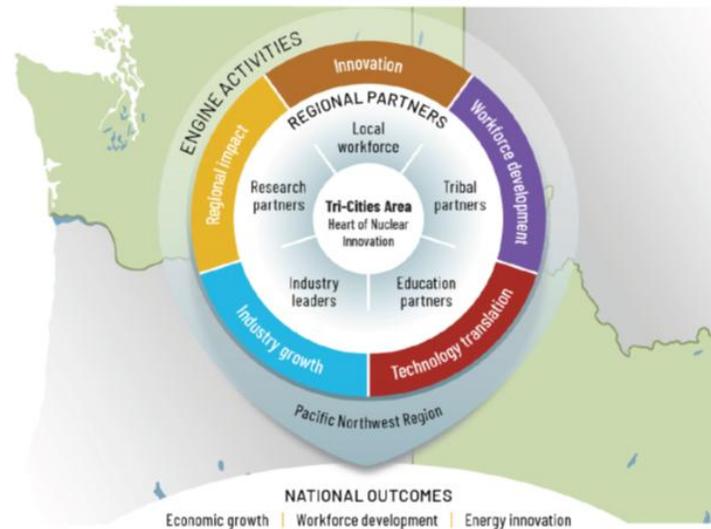
Engagement for Advanced Nuclear and Large Load Customers



SMR Simulator Teaching Lab
Industry Partnership with Energy Northwest



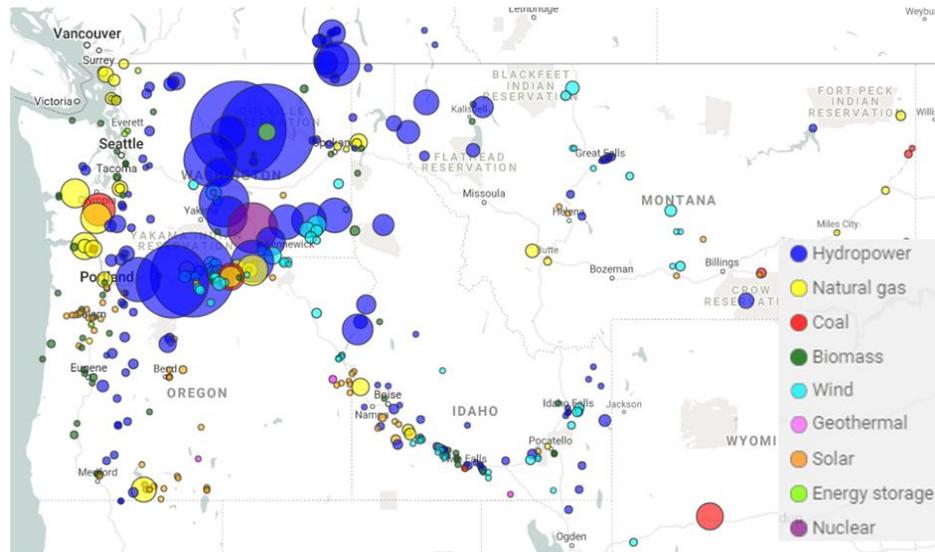
Small Modular Reactor Community Forum



Partnerships in Support of Large Proposals

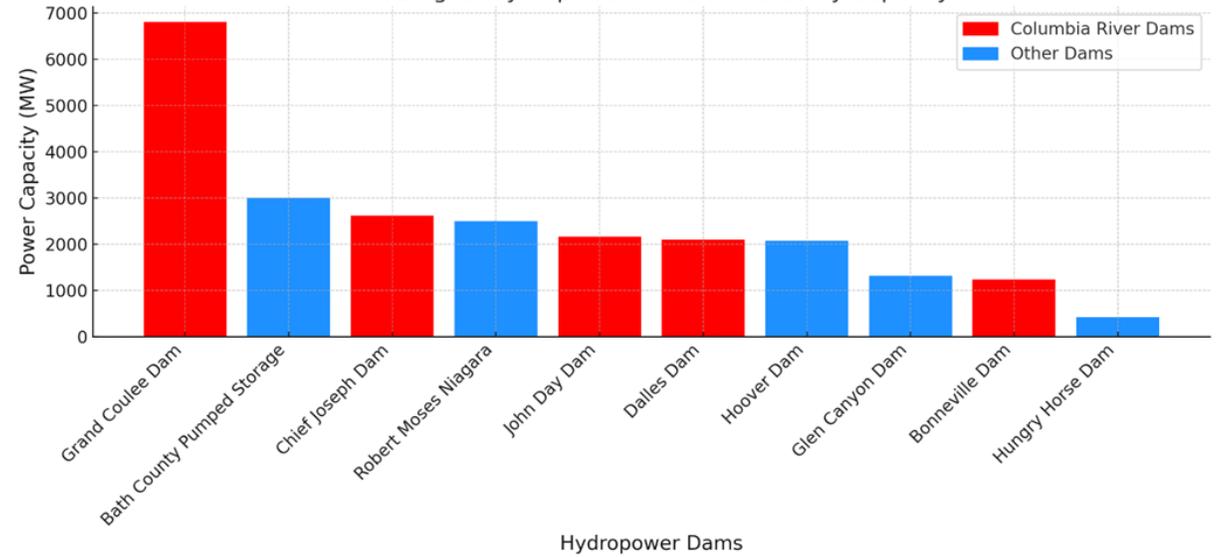


Systems Level Work: Food-Energy-Water Nexus (FEW)

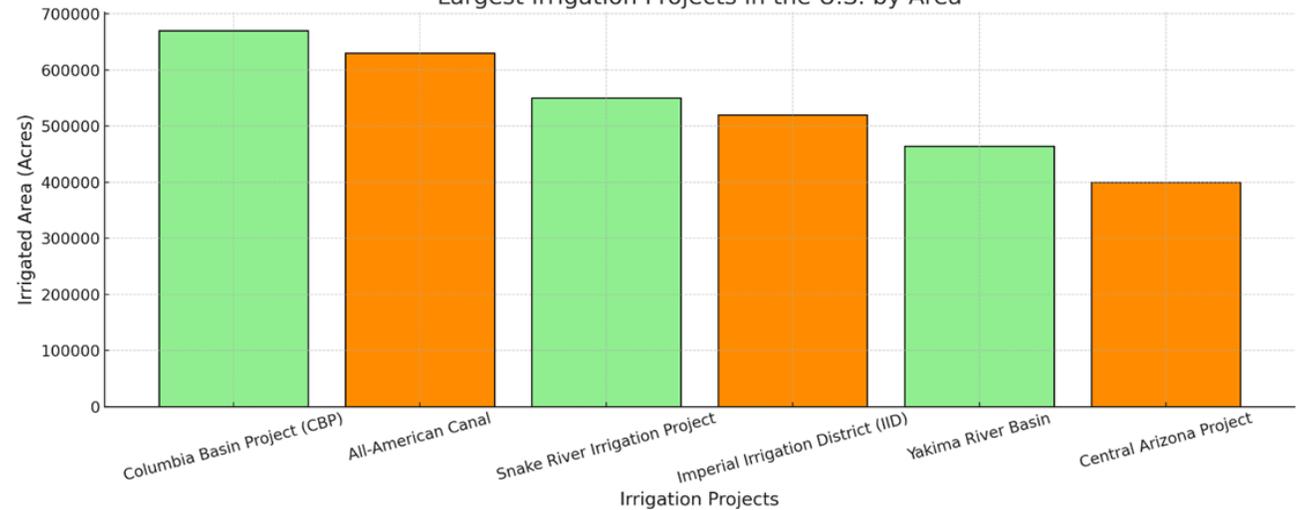


How the FEW profile changes with the changes in energy demand and supply, climate change, and expansion of renewable energy

Ten Largest Hydropower Dams in the US by Capacity

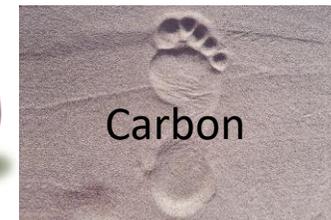


Largest Irrigation Projects in the U.S. by Area





Agrivoltaics Power the Orchard of the Future

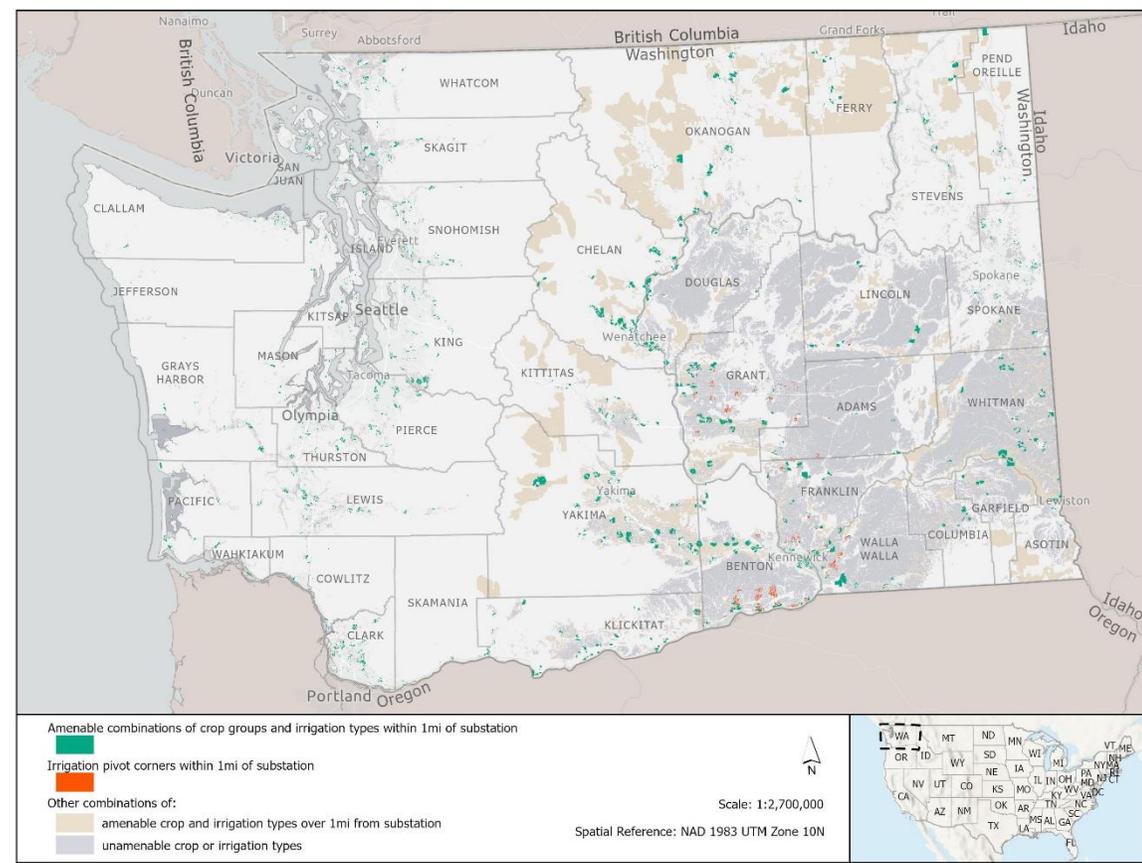
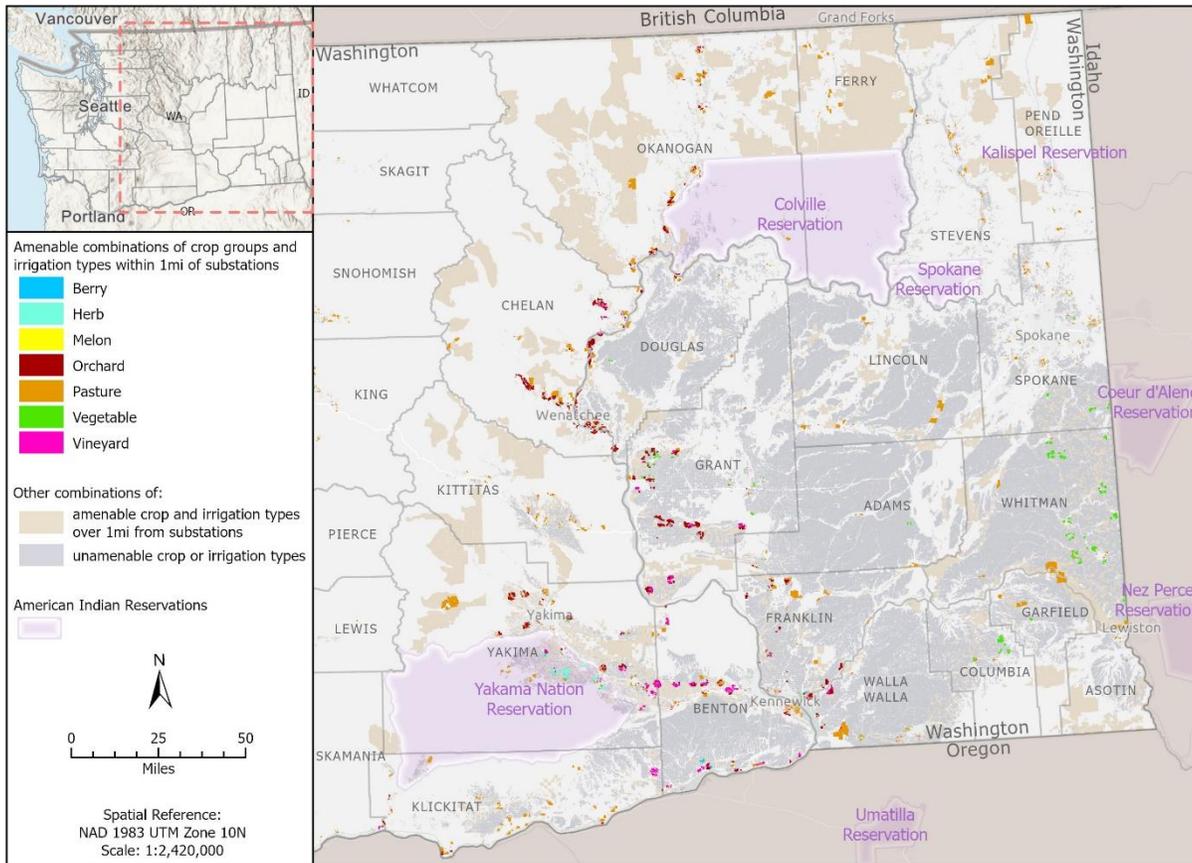


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Farm and Energy Integration: Solar





Workforce with Systems Perspective -- INEF Energy Ambassador Network



The Energy Ambassador Network incorporates student research/innovation teams working with faculty and industry mentors to address local challenges and their impact on communities



Solutions involve teamwork and partnerships



WSU TRI-CITIES

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INEF Leadership and Faculty



Noel Schulz,
Director



Yonas Demissie, Assistant
Director, Engineering &
Environment



Chad Kruger, Assistant
Director, Agriculture,
Extension & Outreach



Jillian Cadwell, Assistant
Director, Program
Development & Student
Engagement



Georgine Yorgey, Assistant
Director, Energy Extension

Upcoming Staff:



Nuclear
Engineering



Life-Cycle
Analysis



Data Analytics/ AI
and Energy



Techno-Economic
Analysis



Energy Policy



Power Electronics



Critical Minerals

Seated in WSU Tri-Cities



Seated in WSU Pullman



WSU System Energy Related Activities For Research, Education and Outreach



WSU Extension

Institute for Northwest Energy Futures (INEF)



Laboratory for Atmospheric Research (LAR)

Northwest Virtual Institute for Cybersecurity Education and Research (CySER)

WSU Fusion Initiative

Water Research Center (WRC)

The Aviation Sustainability Center (ASCENT)

HYdrogen Properties for Energy Research Center (HYPER)

Joint Center for Deployment & Research in Earth Abundant Materials (JCDREAM)

Freight Policy Transportation Institute (FPTI)

Institute of Materials Research (IMR)

Nuclear Science Center (NSC)

Energy Systems Innovation Center (ESIC)

Pacific Northwest Hydrogen Hub (PNWH2)

Bioenergy & Bioproducts Engineering

Center for Sustaining Agriculture and Natural Resources (CSANR)

Bioproducts Science and Engineering Laboratory (BSEL)

PNNL/WSU Advanced Grid Institute (AGI)

PNNL/WSU Nuclear Science and Technology Institute (NSTI)

PNNL/WSU Bioproducts Institute (BioIn)

Integrated Design + Construction Laboratory (ID+CL)

Composite Materials and Engineering Center (CMEC)

The Consortium for Hydrogen and Renewably Generated E-Fuels (CHARGE)

Clean Energy Ambassadors Network (CEAN)

WA Oilseed Cropping Systems Project

Center for Environmental Research, Education and Outreach (CEREO)



WSU Energy Program

Established late 1990's



WASHINGTON STATE UNIVERSITY
Energy Program

Supporting partners throughout Washington, the Northwest, and beyond in improving energy efficiency and developing resilient and reliable energy sources to advance the region's economic and environmental wellbeing.

- Jim Colombo
- Matt Booth
- Erika Coveny
- Donna Cowsert
- Chelsea Edgecombe
- Allie Higginbotham, PhD
- Brad James
- Karen Janowitz
- Jim Jensen
- Jonathan Jones
- Phil Lou
- George Lynch, J.D.
- Morgan Nielsen, M.P.A.
- Gil McCoy, P.E.
- Gerry Rasmussen
- Matt Reznik
- Carolyn Roos, PhD
- Philip Saunders
- Lisa Terefenko
- Randy Thorn, P.E.
- Melinda Thiessen Spencer
- Georgine Yorgey



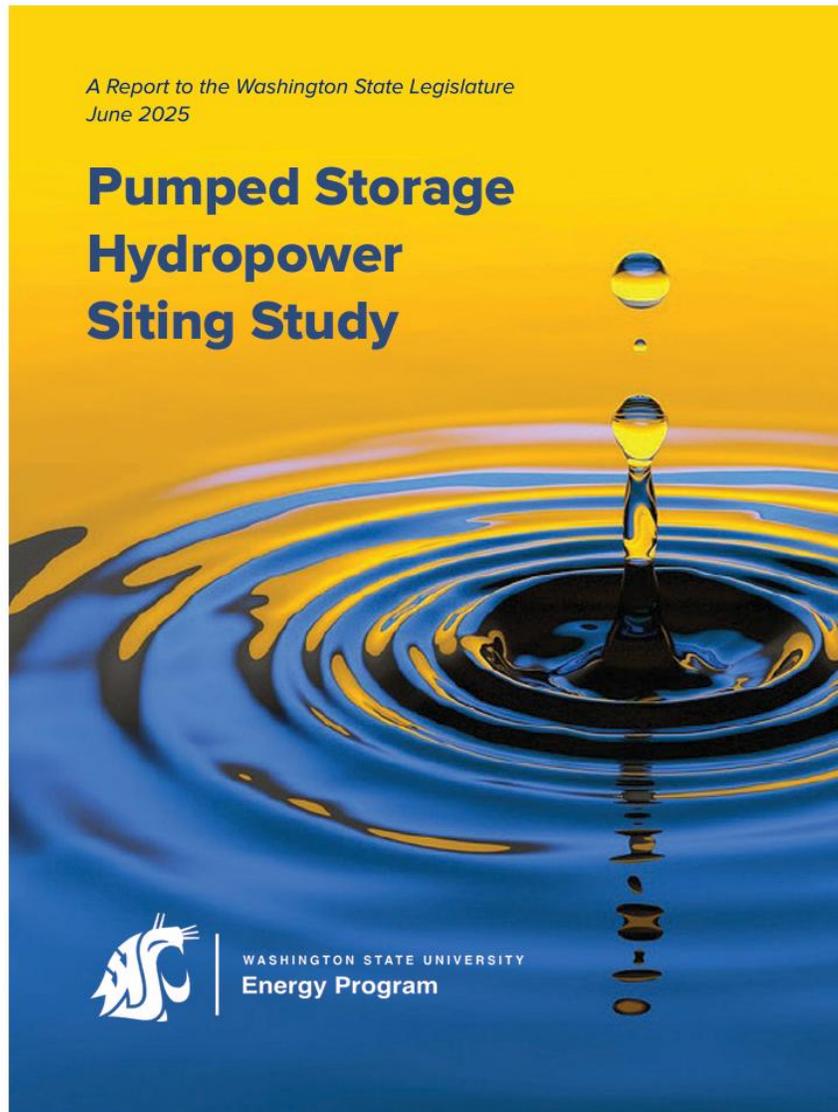
Energy Innovation: Schools and Energy

- Work from prior years has supported energy efficiency planning and implementation in low-resource schools.
- As part of our longstanding work with public fleets in WA, support schools across the state with technical assistance relating to adoption of Electric School Buses.
- We administer the state's Community Solar Expansion Program and just worked with a set of partners to pre-certify 15 rural schools in 7 school districts.

Major Funders & Partners: State of WA, BPA, WSDOT, Breaking Barriers Collaborative, Zero Emissions NW, Partners for Rural WA, School District Partners



Siting of New Energy Resources



Major Funders & Partners: WA Legislature, Conservation Biology Institute, WSU Office of Tribal Relations, Ross Strategic, Meridian Environmental



State and Regional Transmission Policy

- Developing transmission policy and legislation for Washington Department of Commerce to increase transmission development.
- Providing transmission policy input to State energy planning.
- Representing the State in regional transmission planning and cost allocation activities.

Major Funders & Partners: WA Dept of Commerce



Opportunities for Engagement

- Reach out to learn more about INEF's research, education and outreach activities
- Participate in our INEF Working Groups developing assessment reports on different aspects of food-energy-water nexus
- Provide speakers for our Community event panels
- Help connect us with those interested in "Food-Energy-Water Nexus".
- Partner with INEF on proposals and activities.
- Ask us about opportunities to participate in or sponsor educational activities.



INEF LinkedIn

**Many thanks to AGI Co-Directors for
opportunity to share about INEF**



<https://tricitie.wsu.edu/inef/>



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