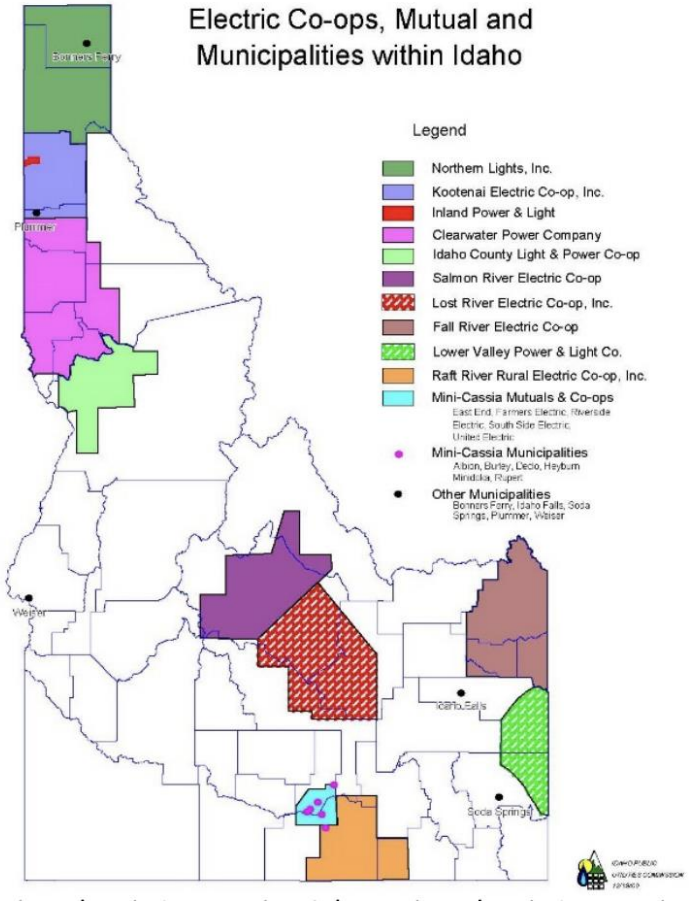
Resources and Research to Support Local Energy Planning Decisions in Idaho

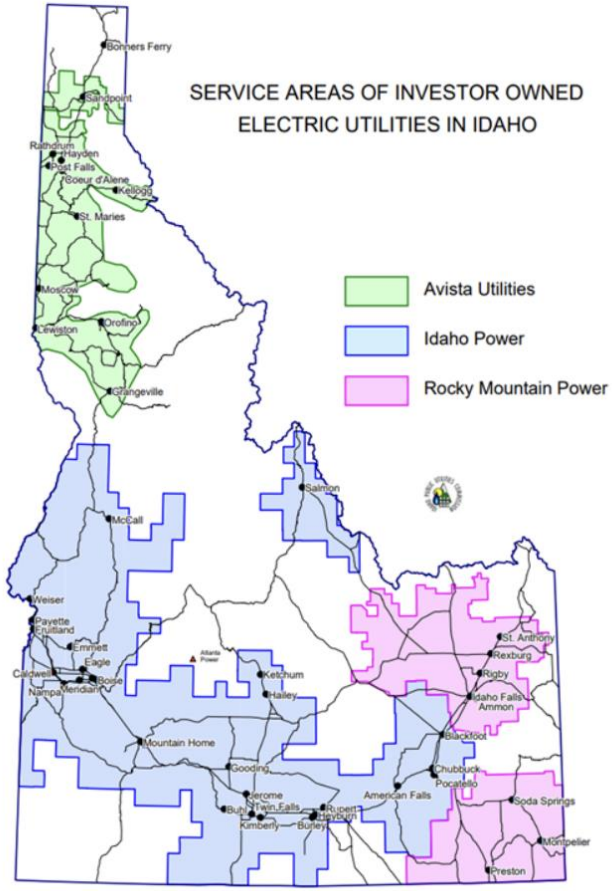
Stephanie Lenhart, Boise State University
2026 IACC Annual Conference, Nampa, Idaho
June 2, 2026

Boise State University

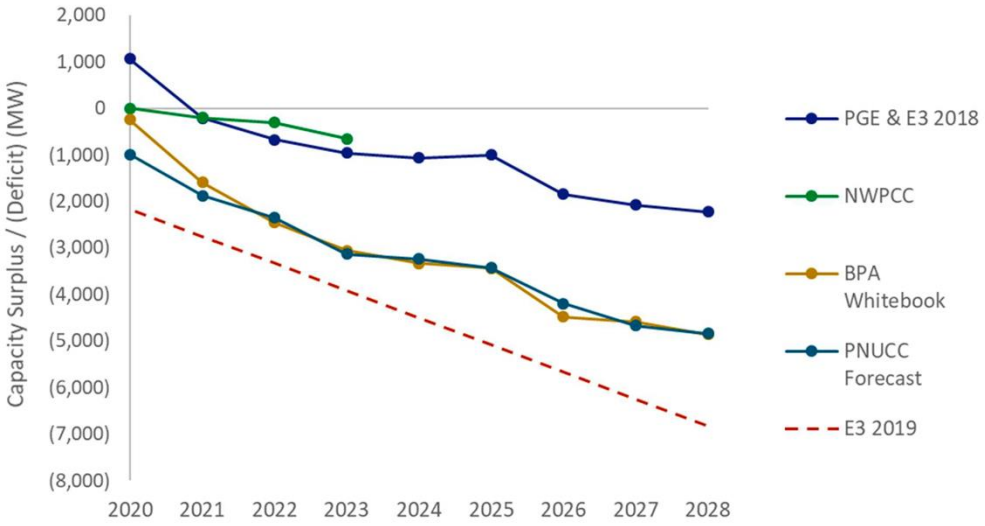
- School of Environment
- Energy Policy Institute
- Master of Environmental Management Program
- Zena Creek Ranch Field School
- Regional Transmission Organization Governance Research Network
- Energy, Land Use, and Education Network

Idaho Electricity System





Demand Growth in the Pacific Northwest



Resource Adequacy Challenge in 2019

Source: E3/NWPP, 2019

"The West's planned resource buildout will not keep up with anticipated load growth over the next decade, particularly in the Basin and Northwest subregions. **The West could see energy shortfalls as early as 2028**."

Source: WECC, 2026

Local and Regional Challenges

Demand Growth

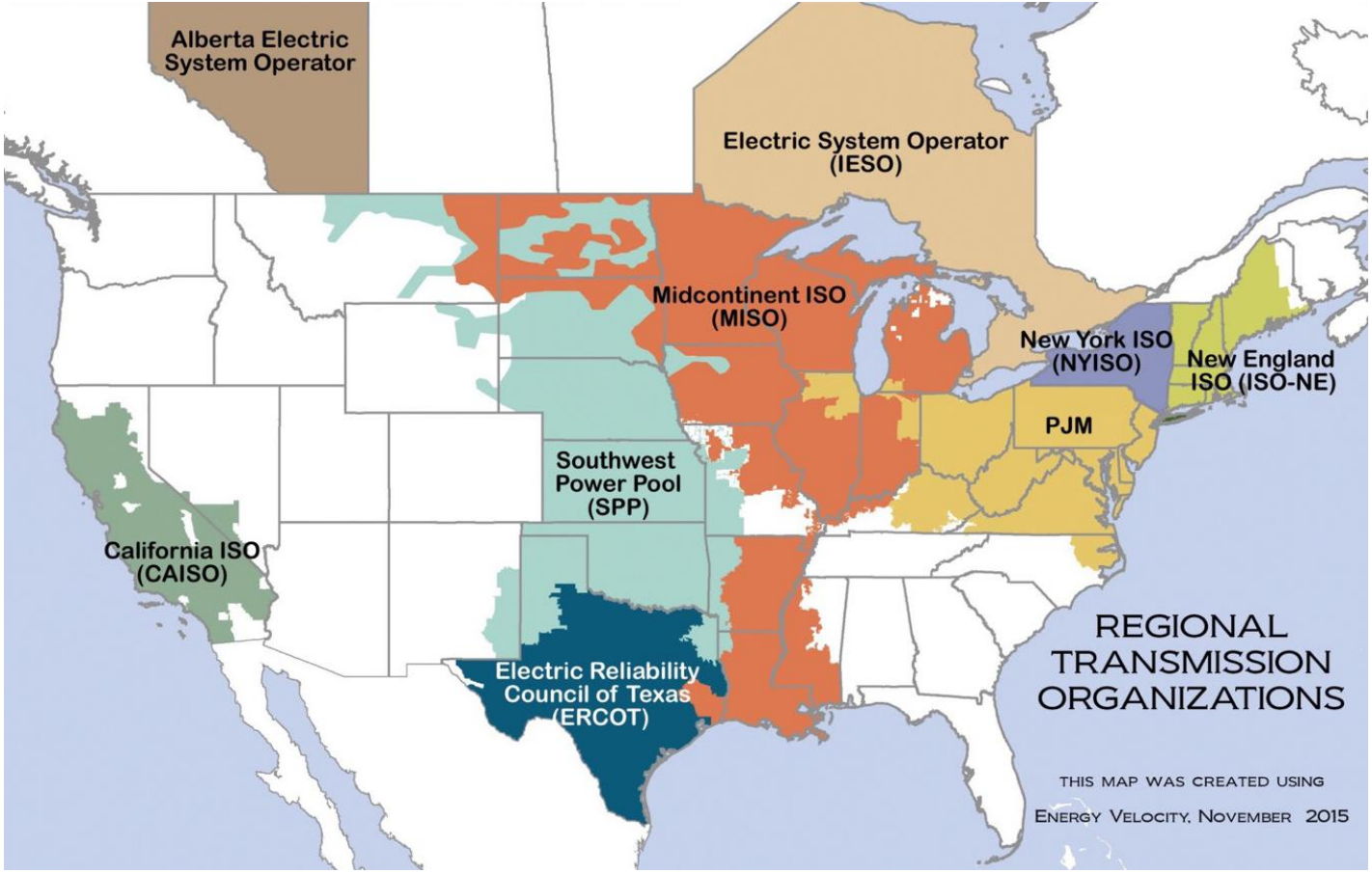
*Data Center load growth rivals the peak postwar electrification build*out (Keisling and Blumsack)

Resource Additions

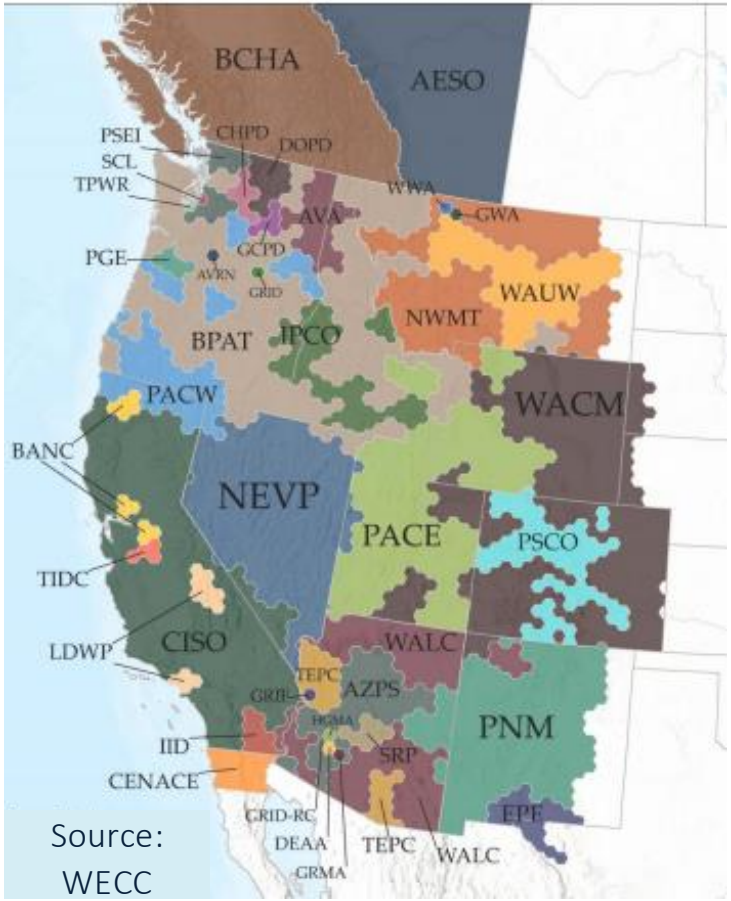
Power Transfers

Source: WestTec, 2026

Regional Governance for Planning, Reliability, and Markets



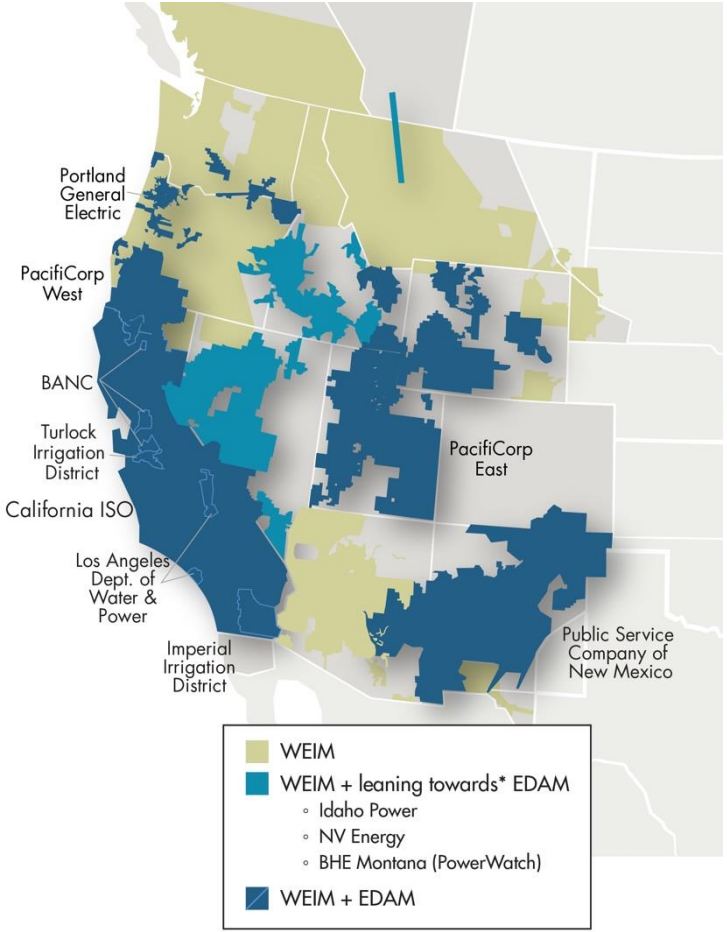
A Patchwork for Planning, Markets, and Permitting



Source: WECC

- All or part of 14 states
- Two provinces
- More than 200 relatively small utilities and power marketers
- 37 balancing authorities

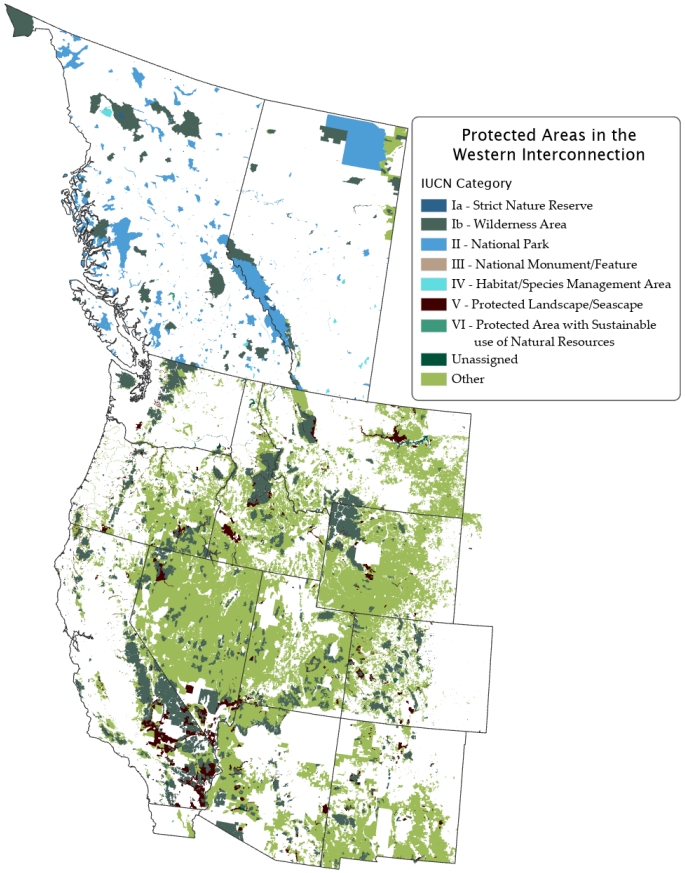
Efforts for Regional Markets and Interstate Transmission



Affordability
Reliability
Resilience
Sustainability

Source: CAISO, 2026; WECC, State of the Interconnection, 2025

Distinct Challenges in the West



- Diverse geography and climate
- Large share of public lands
- Large share of hydropower
- Large share of public power utilities
- Long-distance transmission (doughnut)
- Drought and conflicts over water rights
- Increasing intensity and frequency of wildfires
- Different governance for planning, markets, and permitting

“The magnitude of the resource shift overwhelms current processes”

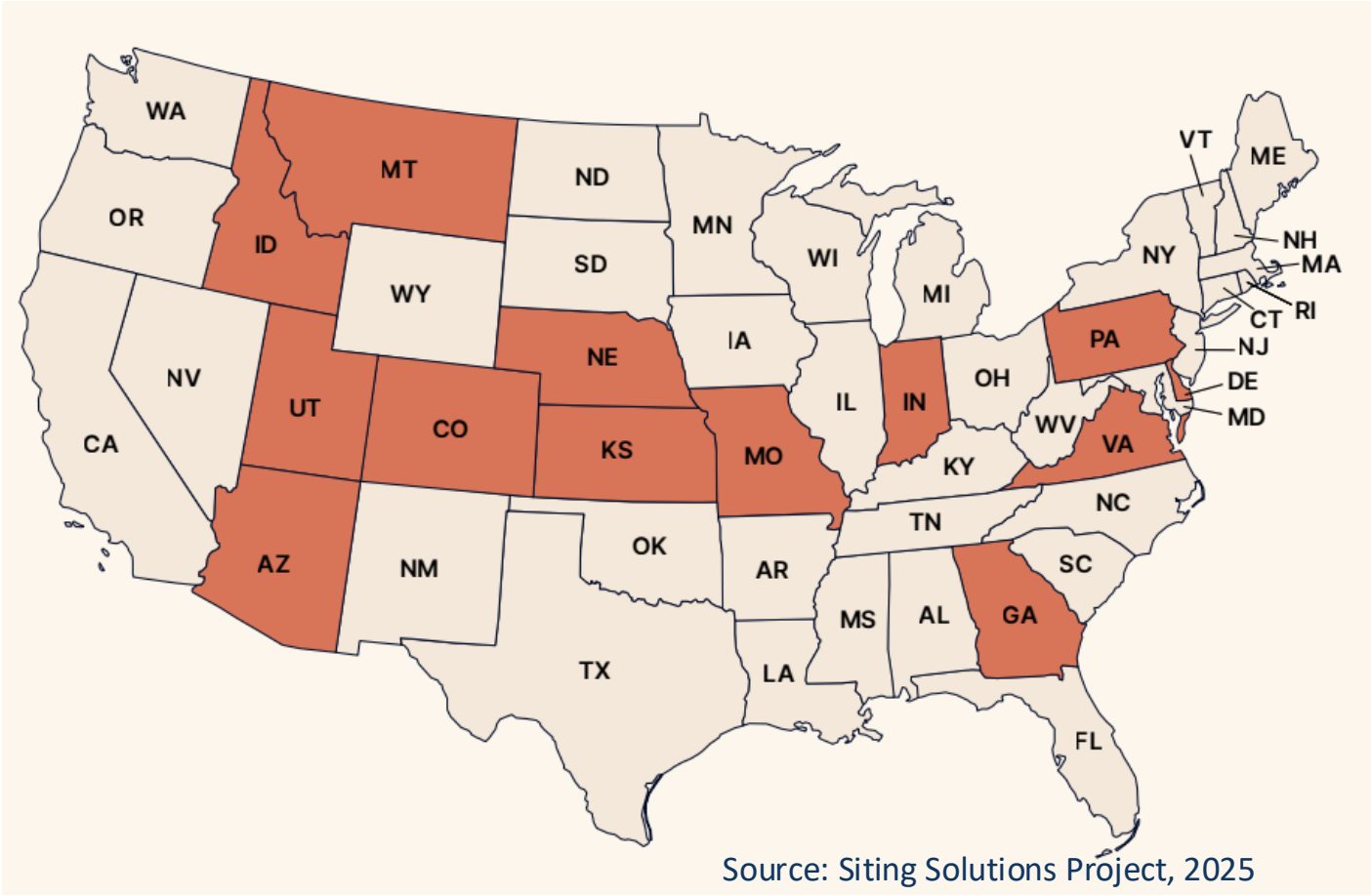
Grid Strategies, 2022;
Comments to the Federal Energy Regulatory Commission on the Advanced Notice of Proposed Rulemaking RM21-17-000
Building for the Future Through Electric Regional Transmission Planning and Cost Allocation and Generator Interconnection

Predominantly Local Siting

Idaho is one of **13 states** with primarily local authority over siting and permitting

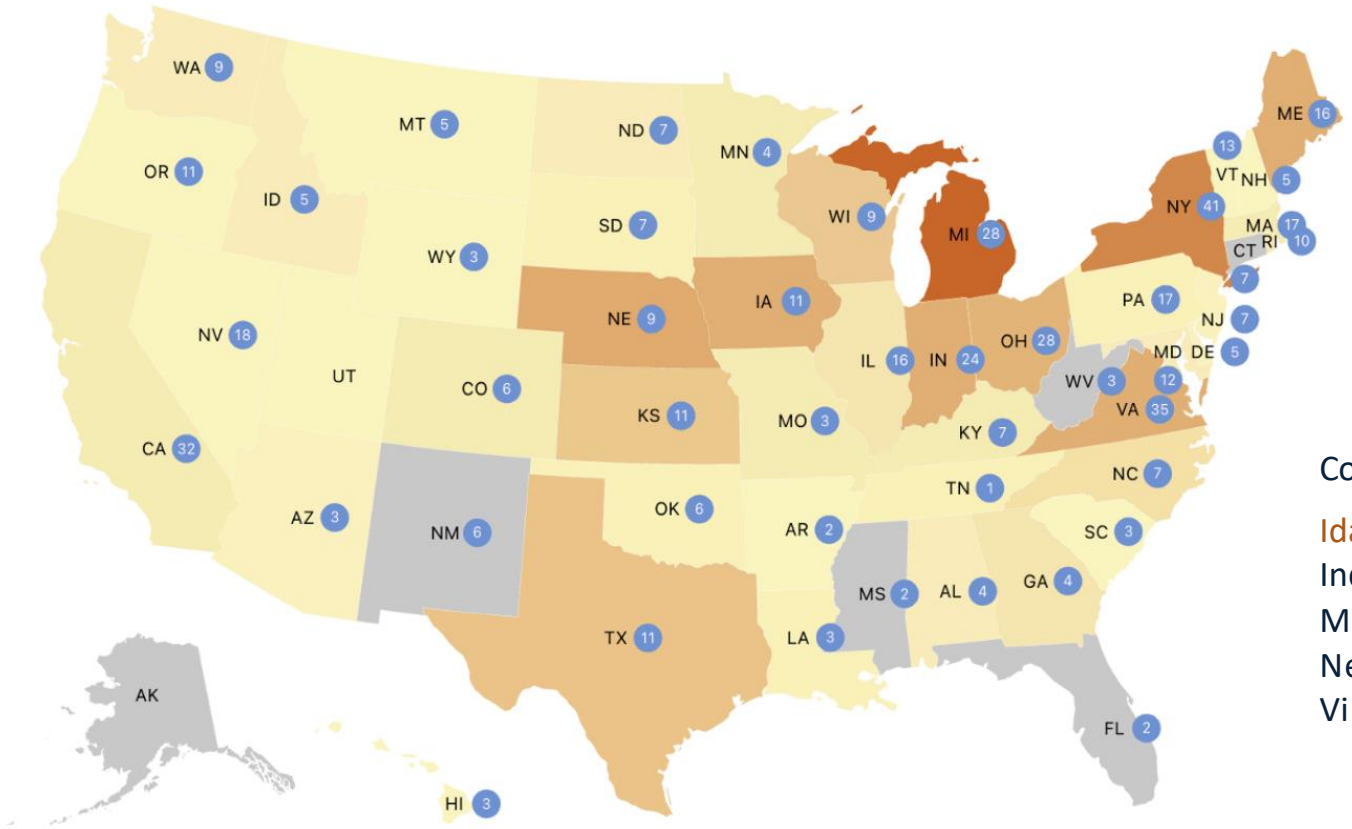
Most states use a combination of approaches

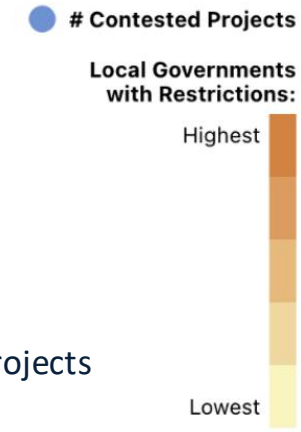
Siting policies are highly varied and specific to the place



Source: Siting Solutions Project, 2025

Opposition and Uncertainty



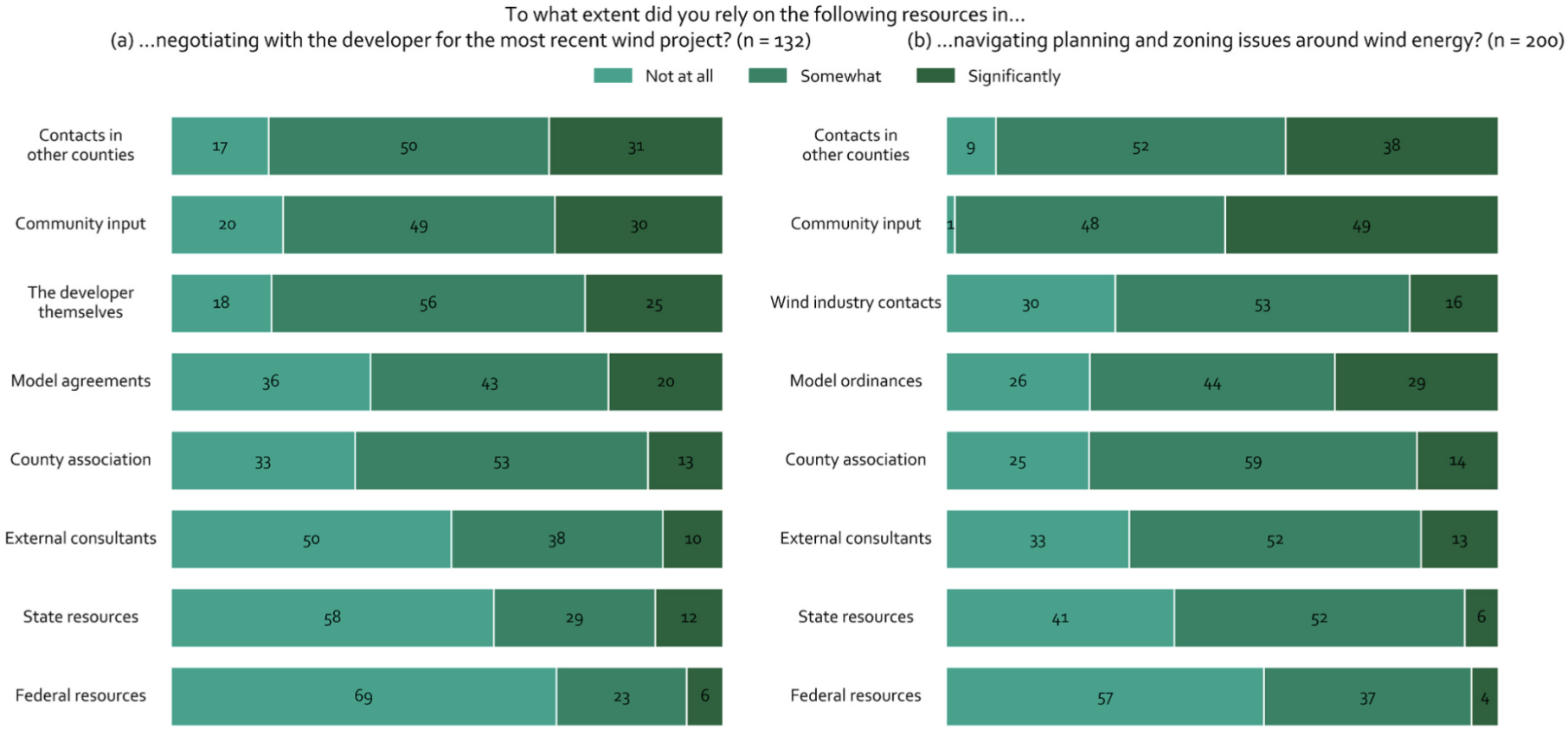


Contested Projects

Idaho = 5
Indiana = 24
Michigan = 28
New York = 41
Virginia = 35

Source: Eisenson et al. 2025

Growing Body of Research and Resources



Source: Ellmallah et al. 2025)

Growing Body of Research and Resources

Under-capacitated and over-powered?

- Results challenge a growing conventional claim for the necessity of centralized permitting at the state level – *"all siting is somehow local: regardless of siting authority, local officials must do the hard and sometimes costly work of responding to and negotiating with residents or developers."*

- Counties are on the front lines of sorting through and responding to (mis) information.

- Effective public participation is structurally compromised in many counties... and likely not achievable without rural investment.

Source: Ellmallah et al. 2025)

Growing Body of Research and Resources

Planning and Zoning for Battery Energy Storage Systems

University of Michigan

The recommendations and insights presented in this document are **based on peer-reviewed research** whenever available and conclusive. It is important to note that the zoning and regulatory frameworks discussed **may not be applicable in other states** and are primarily tailored for lithium-ion batteries, which currently dominate the market. Given the rapid pace of innovation in energy storage technology, the authors acknowledge the guide's **need for periodic updates** as technology evolves and learnings are gleaned from BESS deployment.

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GRAHAM SUSTAINABILITY INSTITUTE
CENTER FOR EMPOWERING COMMUNITIES
UNIVERSITY OF MICHIGAN

Resources and Research Network

Energy, Land Use, and Education Network (ELEN) Emerging national network of researchers and practitioners who support local decision-makers with tools, resources, and connections to make informed decisions about energy infrastructure

Individuals who spend time directly engaging with local government officials across multiple jurisdictions to provide evidence-based research

Supported by the Heising-Simons Foundation

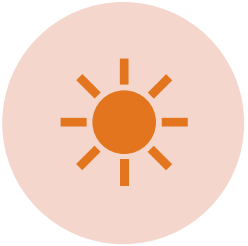
Resources and Research Network

Idaho Water Resources Research Institute and Lincoln Land Institute: working on a set of questions for local planners to ask about the water impacts of data centers

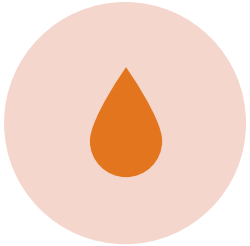
Siting Resource Center. Synthesizing peer-reviewed research on a wide range of topics.

National Association of Counties Rural Energy Academy. In 2026, will focus on helping county leaders navigate wind, solar, battery storage, and data centers.

Current Research Projects in Idaho



Idaho Energy Planning and Permitting



Governance at the Energy-Water Nexus (*data centers and storage*)

Coupled Water and Energy Consequences of Agricultural-to-Urban Transitions

Prescribed Fire and Grid Resilience to Multi-Hazards

Research funded by the National Science Foundation, NASA, and The Nature Conservancy

Questions

What resources, tools, or research would help you in evaluating energy infrastructure?

What questions do you have about the water and energy impacts of data centers?

What does energy resilience look like in Idaho?

Thank you

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