Siting Resource Center

Keith J. Benes
Co-Founder | Senior Advisor

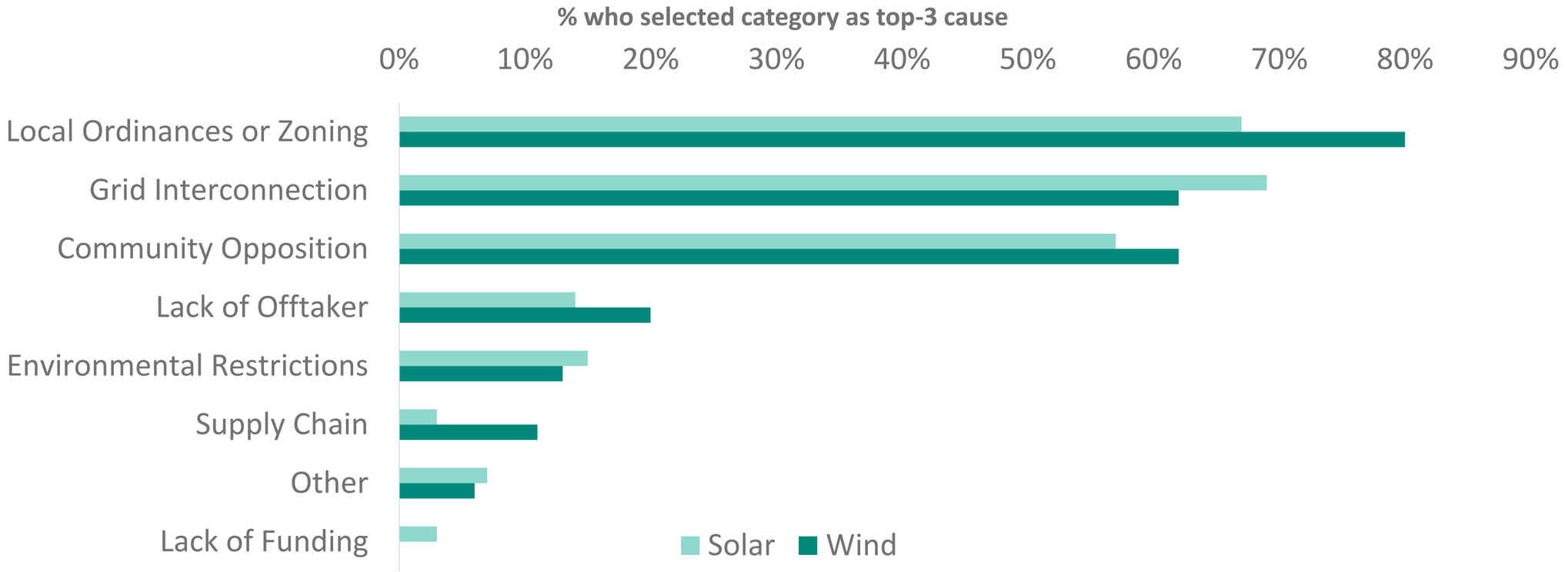
ESIG Summer Workshops: Geospatial Techniques in Grid Planning

Accessing, Interpreting, and Applying Credible and Reliable Information for Renewable Energy Siting

THE BARRIERS

Local ordinances and community opposition are the leading causes of delay and cancelation for wind and solar projects

Within the last five years, what have been the leading causes of project cancelation? (Respondents selected one to three.)



Source: Lawrence Berkeley National Laboratory survey of utility-scale wind & solar developers.

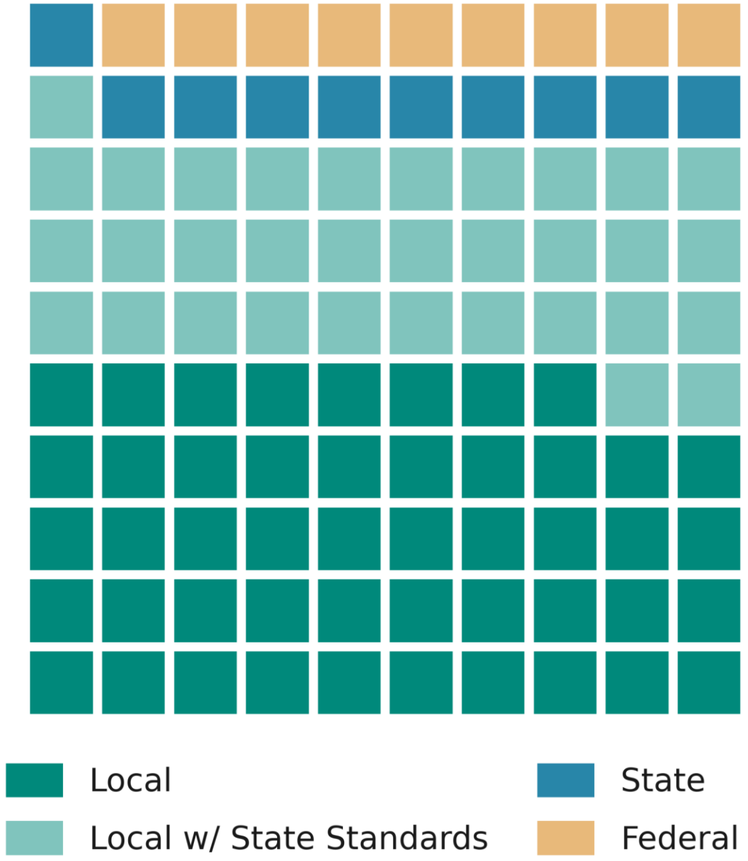
THE BARRIERS

Over 90% of solar and wind GW sited at the local or state level

Improving siting and permitting is a **local and decentralized challenge** — playing out county by county.

There are projects in the queues in over **1800 jurisdictions**.

Siting and permitting these projects means navigating **dozens of technical topics**, including: land use, zoning, tax policy, wildlife, decommissioning, community benefits and more.

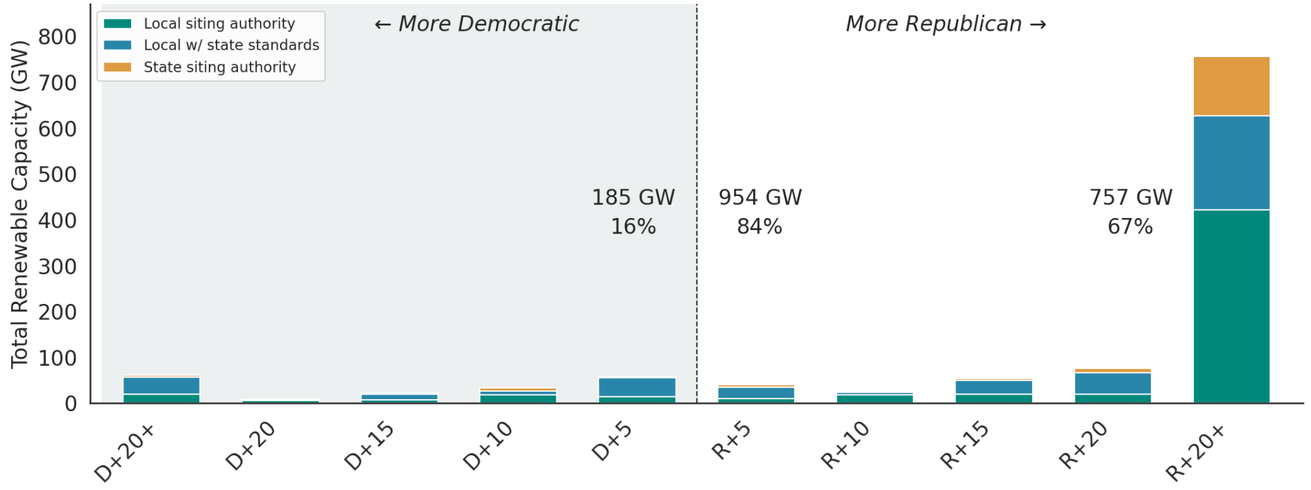


Sources: Berkeley Lab Queued Up 2025; Berkeley Lab Laws in Order 2024
Analysis: Euclid Strategies

THE OPENING

Crucial to understand local communities

Solar and wind capacity in queues by project county presidential vote margin and siting authority



Sources: MIT Election Data & Science Lab; Berkeley Lab Queued Up 2025; Berkeley Lab Laws in Order 2024
Note: Presidential vote margin is average between 2020-2024.

90%

of GW in counties with per-capita GDP below national average

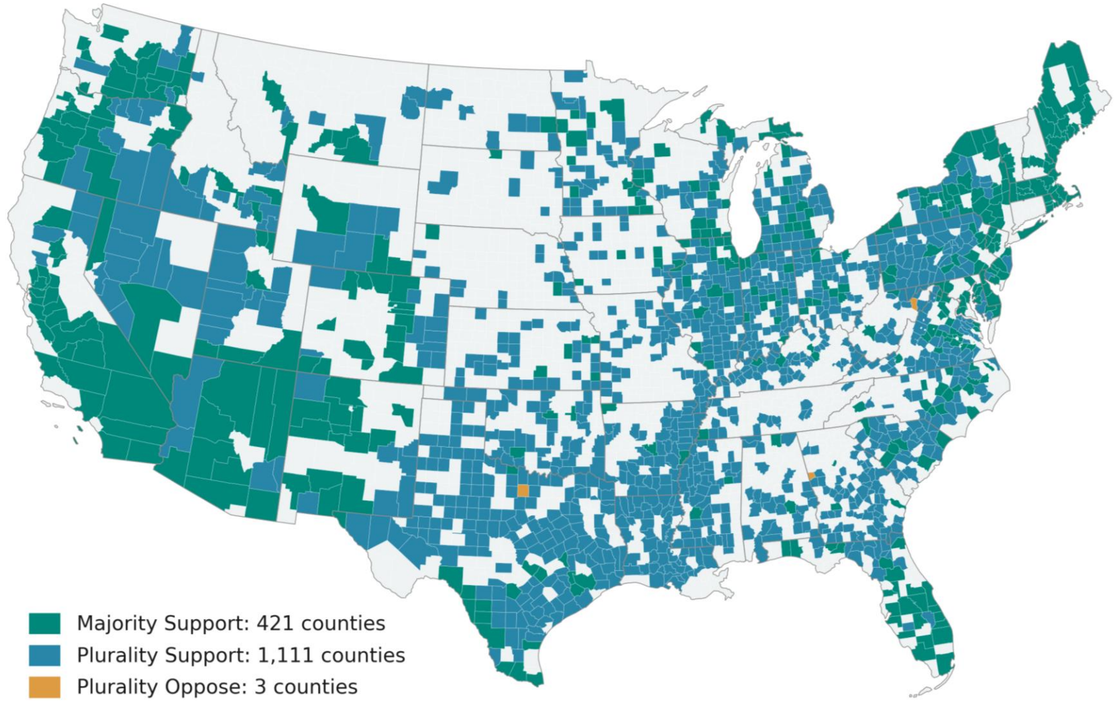
50%

of GW in counties with a population of **37,000** or less

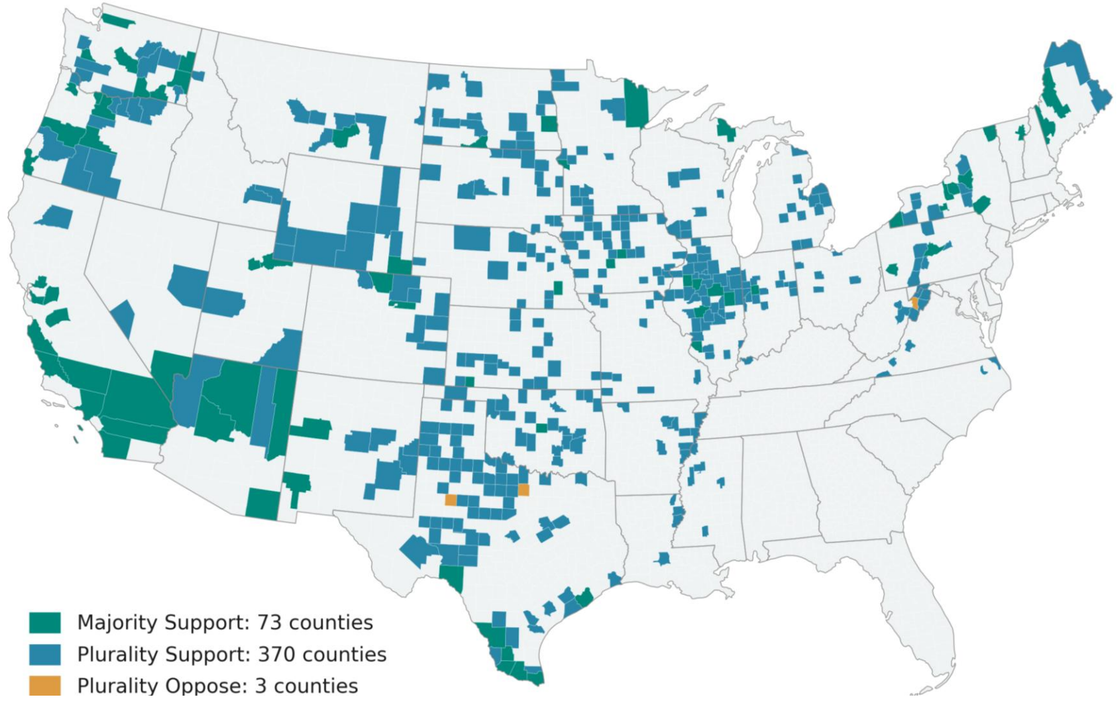
THE OPENING

Almost all projects are in counties with estimated net support for building renewables locally

Estimated support for local solar

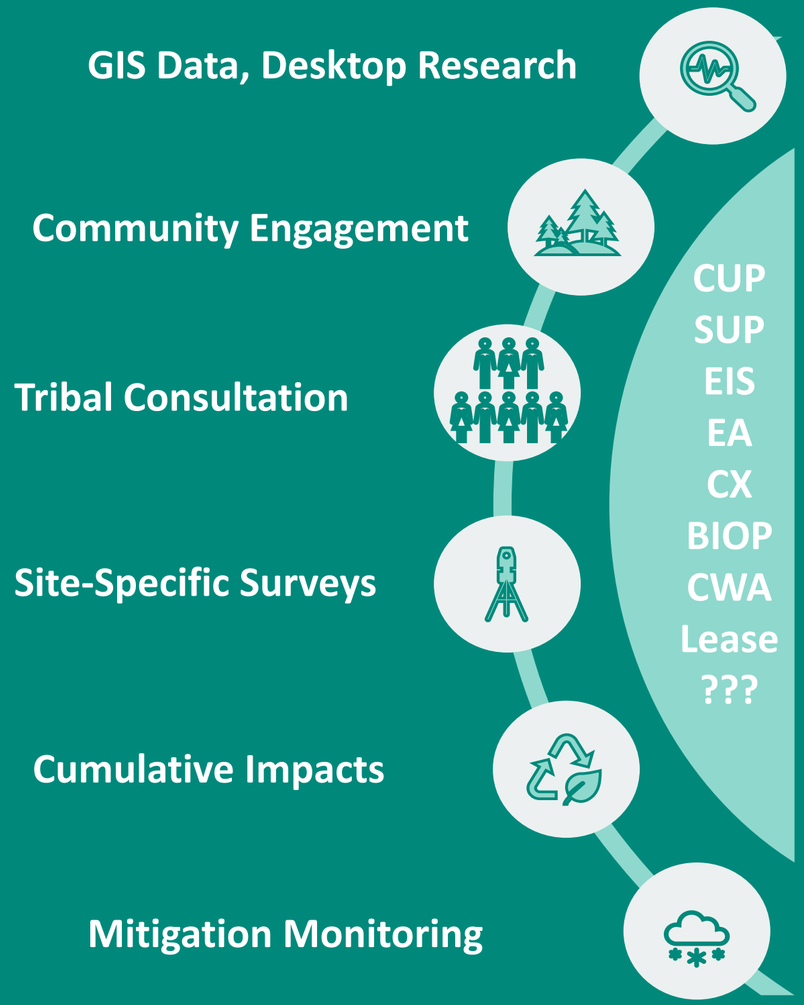


Estimated support for local wind



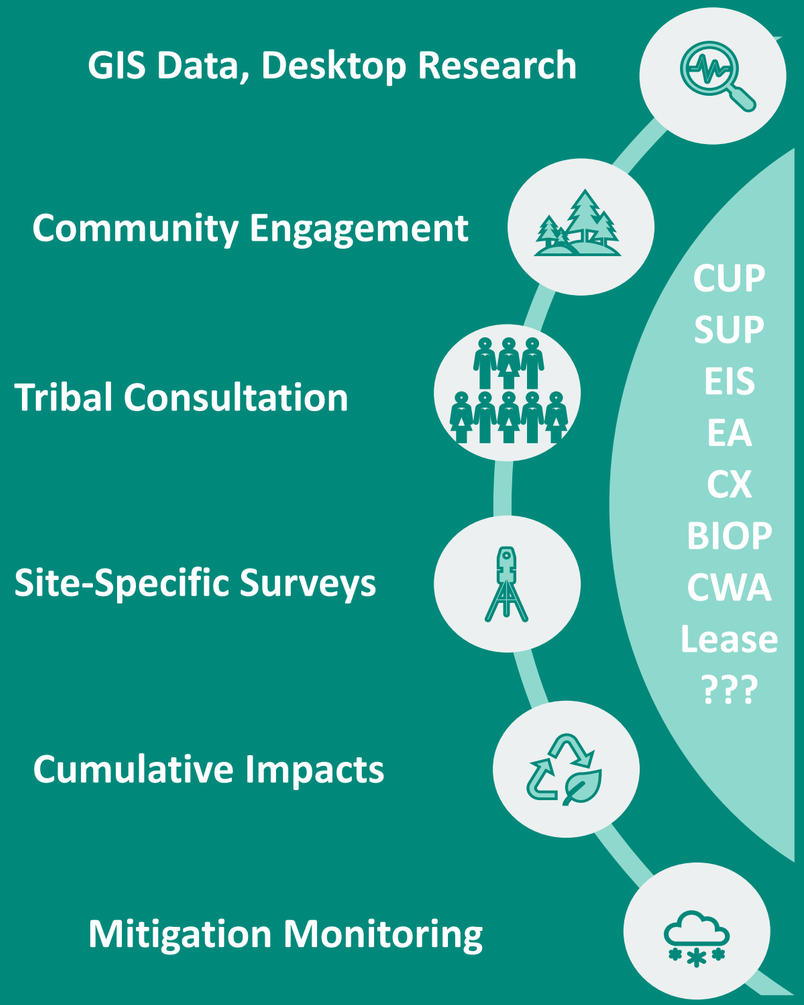
Sources: Yale Climate Opinion Maps 2025; Berkely Lab Queued Up 2025; visualization Euclid Strategies

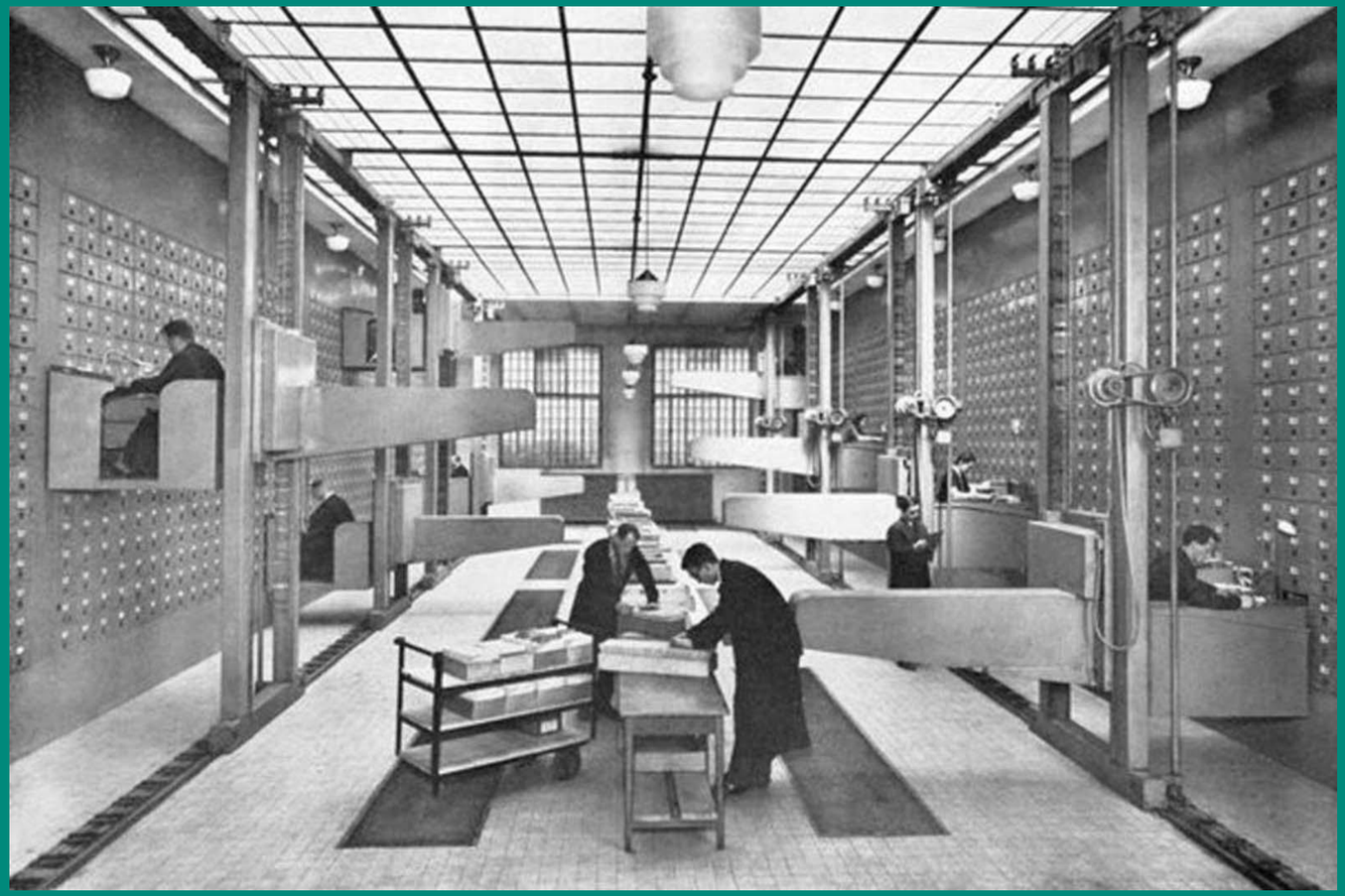
Typical Data Management from Historic Permitting Processes



Still from: Spielberg, Steven, director. Raiders of The Lost Ark. Paramount Pictures. 1981

Aspirational Data Management for Permitting Processes





Česká Správa Sociálního Zabezpečení, 1937

THE OPENING

The Siting & Permitting Topic Framework.

Five domains organize every topic a utility-scale solar, wind, or storage project raises.

Land Use & Environmental

Land Use Change
Wildlife Interactions
Natural Resources
Agrivoltaics
Ecovoltaics
Disturbed or Underutilized Lands
Landscape-Scale Effects
Land Requirements & Efficiency

Social, Community & Economic

Community Perceptions
Changes to Community Character
Property Prices
Community Engagement
Community Benefits
Economic & Market
Workforce
Cultural Resources

Regulatory, Policy & Market

Planning Frameworks
Zoning, Setbacks, Land Use
Local, State, Federal Permitting
Tax Policy
Case Law
Utility, PUC, ISO
Market Conditions
Grid Fundamentals

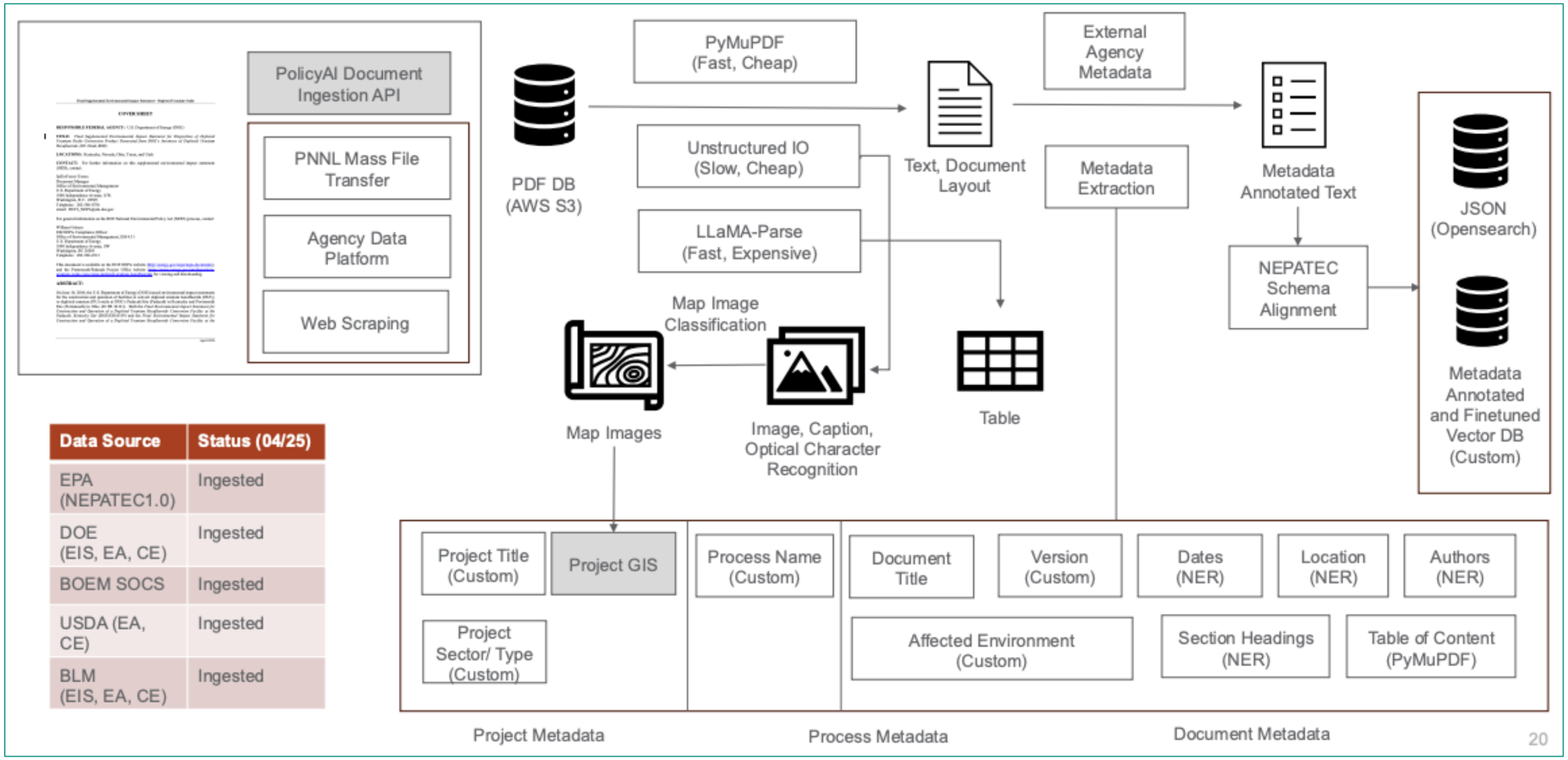
Health & Safety

Noise
Fire Safety, Building Codes
Glint / Glare
Radar
Shadow Flicker
Ice Throw, Blade Shedding
Contamination
Wildfire Risk
Aviation Obstruction
Seismic, Structural, Flood
Emission Reduction

Facility Lifecycle & Operations

Site Selection
Landowner Relations
Interconnection
Project Economics
Construction Practices
Operations & Maintenance
Decommissioning
Repowering
Insurance
Bonding / Financial Assurances
Supply Chain, Manufacturing
RE Tech Fundamentals

Creating structured data from unstructured documents



Data Source	Status (04/25)
EPA (NEPATEC1.0)	Ingested
DOE (EIS, EA, CE)	Ingested
BOEM SOCS	Ingested
USDA (EA, CE)	Ingested
BLM (EIS, EA, CE)	Ingested

Source: Pacific Northwest National Lab, PermitAI NAEP Workshop 2025

THE SOLUTION

Reimagining workflows

NEPATEC2.0 is recreating geospatial data that was lost from past processes.

Transformative gains can be unlocked by not just by recapturing lost structured data, but by thinking new about the amount of structured data from text or multimodal files.

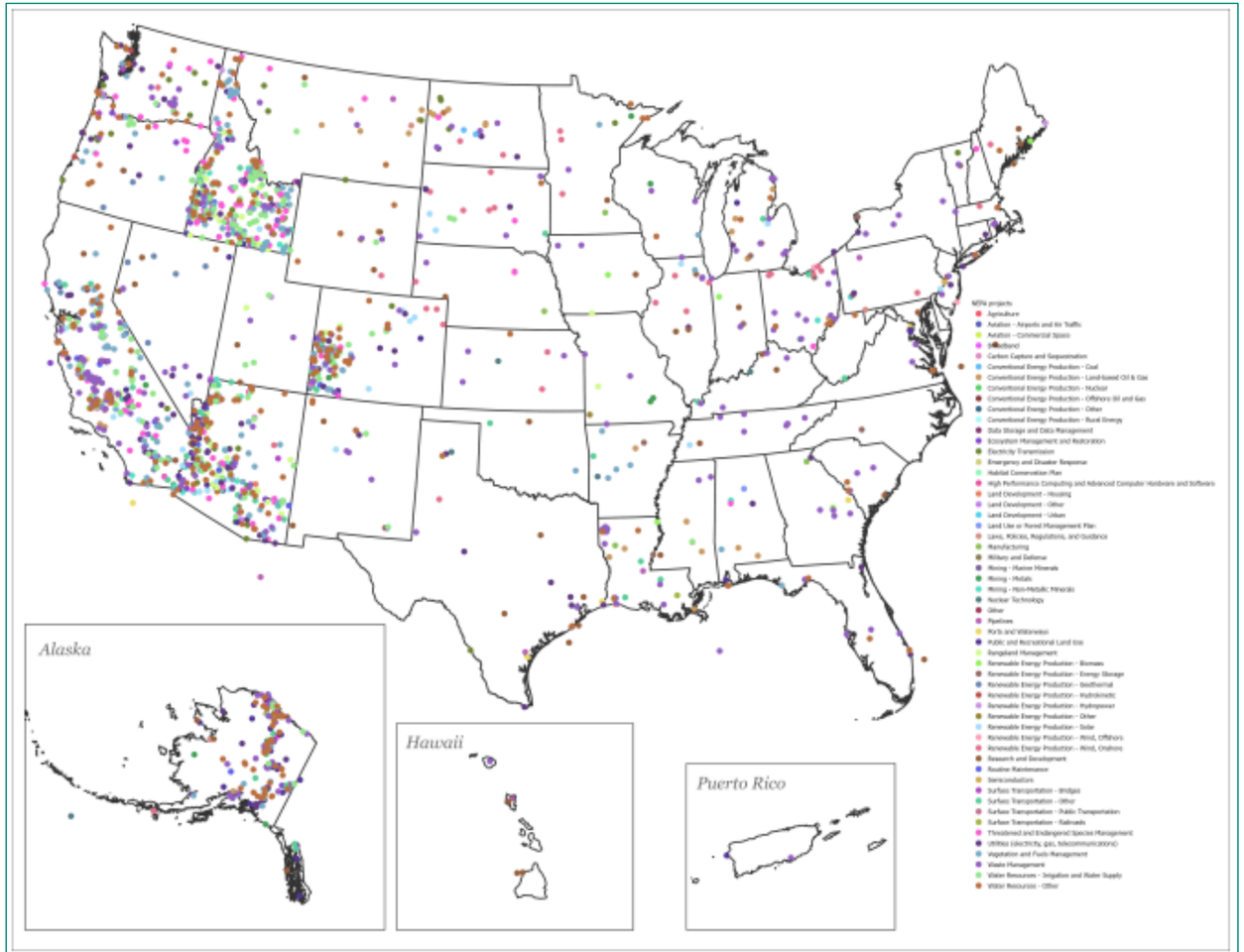
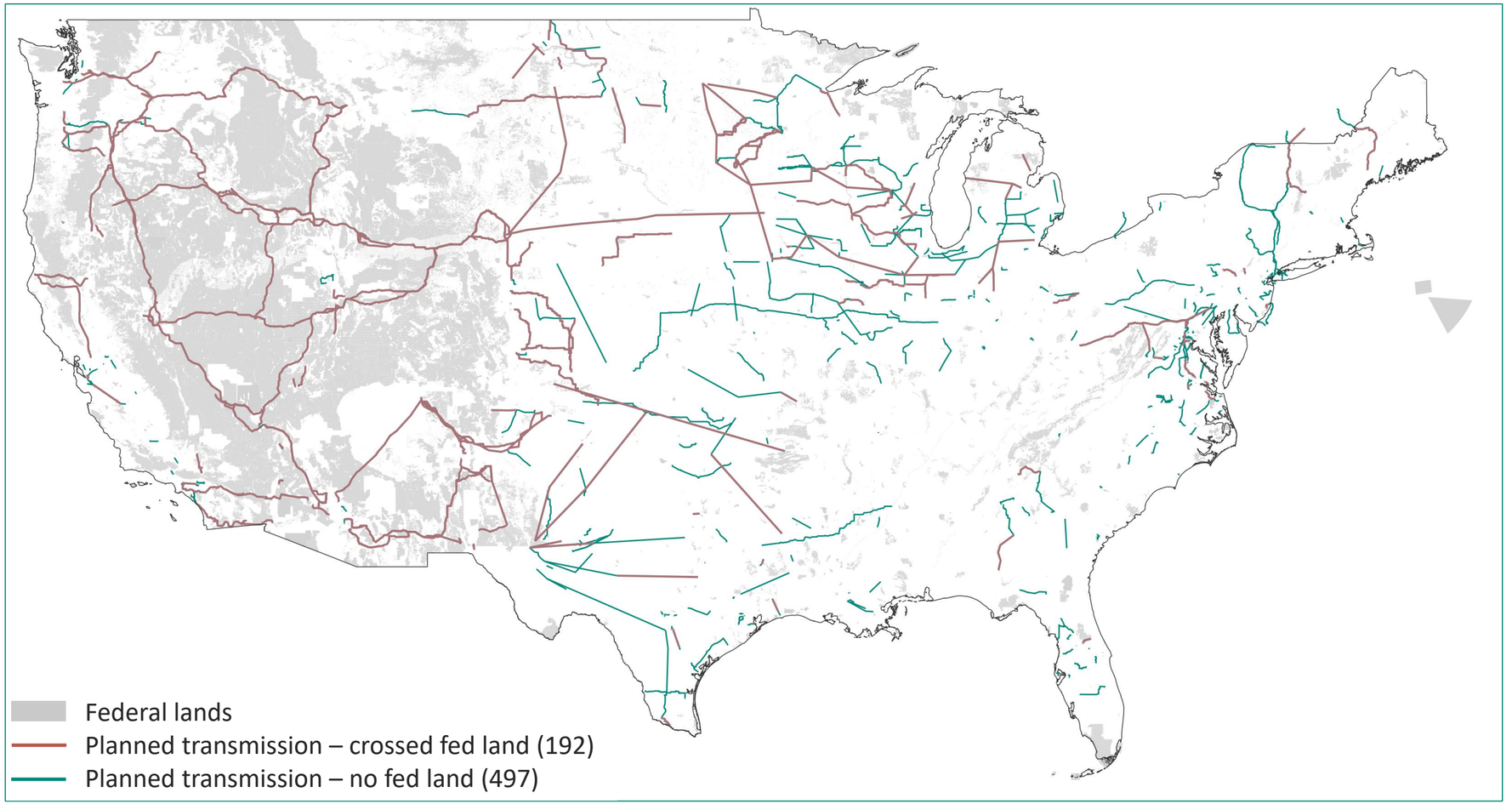


Figure 12. Geographic distributions of NEPATEC2.0 project locations across the United States from the EA documents. Marker points show exact project centroids by the county level when supported. Marker colors show the project types.

Source: Pacific Northwest National Lab, NEPATEC2.0 Technical Report, 2025

THE SOLUTION

Planned high-voltage transmission lines



Source: Our Grid Future / Horizon Climate Group, 2026

Thank You. Questions?