



U.S. DEPARTMENT *of* ENERGY

Grid Deployment Office

Speed to Power Initiative and Request for Information

Fall 2025

Agenda

- **Remarks from the Office of Indian Energy**
- **Remarks from the Grid Deployment Office**
- **Request for Information (RFI) Review**
- **RFI Q&A**
- **Accelerating Speed to Power Data Viewer Demonstration**
- **Accelerating Speed to Power Data Viewer Q&A**



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Request for Information Background

President Trump issued several executive orders related to energy dominance and AI:

EO 14154	EO 14179	EO 14262	EO 14302
<i>Unleashing American Energy</i> (Jan. 20, 2025)	<i>Removing Barriers to American Leadership in Artificial Intelligence</i> (Jan. 23, 2025)	<i>Strengthening the Reliability and Security of the United States Electric Grid</i> (April 8, 2025)	<i>Reinvigorating America’s Nuclear Industrial Base</i> (May 23, 2025)

DOE is considering actions to support these policies and ensure the electric grid can enable this growth.



Request for Information (RFI) Background

DOE administers funding programs and authorities to support grid infrastructure, power system investments, and expansion of generation, transmission, and distribution capacity to serve large electric loads, including:

- **Transmission Facilitation Program (TFP)**
- **Grid Resilience and Innovation Partnerships (GRIP) Program**
- **Loans and Loan Guarantees**
- **Technical Assistance**

Through this RFI, DOE seeks to develop and refine Federal funding and technical assistance programs.



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Request for Information (RFI) Review

DOE seeks to identify projects that can accelerate speed to power.

Specifically, DOE is seeking to identify multi-gigawatt projects that:

- Support up to 20 GW of incremental load.
- Include, but are not limited to:
 - New inter-regional transmission to support incremental load serving capability (at least 1,000 MVA);
 - Reconductoring of existing lines to support incremental load serving capability (at least 500 MVA);
 - Bringing retired thermal generation facilities back into service or using the existing interconnection capacity to provide reliable power generation; and
 - Construction of new generation or portfolios of new generation assets.



Request for Information (RFI) Review

Sections of RFI Questions:

1. Large-Scale Generation and Transmission Projects to Enable Load Growth
2. High-Priority Geographic Areas for Targeted DOE Investment
3. Use of DOE Funding, Financing, and Technical Assistance
4. Load Growth Trends
5. Grid Infrastructure Constraints
6. Additional Comments





Request for Information Deadline

Due Date: 5 PM Eastern on Friday, November 21

Responses submitted to
SpeedtoPowerRFI@hq.doe.gov with
“RFI Response – Accelerating Speed to Power”
in the subject line.



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National Renewable Energy Laboratory



Rachel Barton

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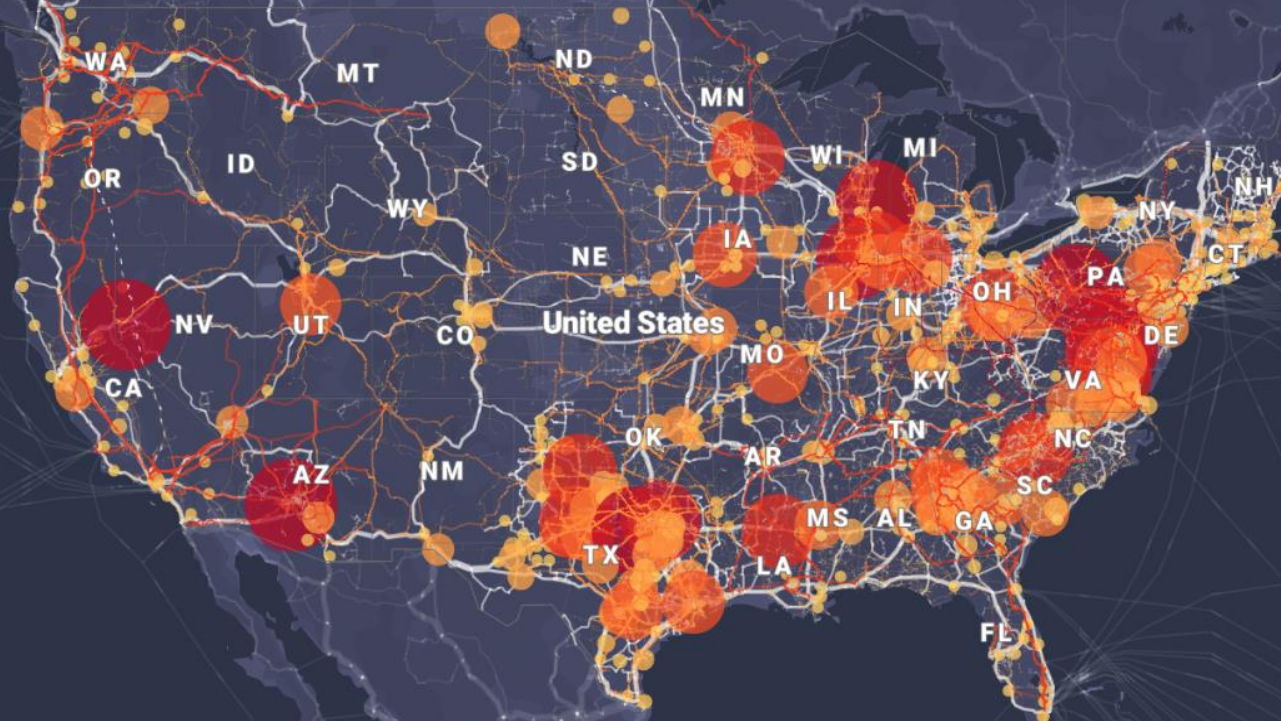
Speed to Power Data Viewer: Data Center Siting Through Geospatial Data

Rachel Barton & Martha Symko-Davies
Nov. 6, 2025



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What Is the Speed to Power Data Viewer?

Funded by the U.S. Department of Energy's Grid Deployment Office (GDO), NREL launched a **powerful interactive data center infrastructure map** to support GDO's Speed to Power initiative—a federal action to accelerate large-scale grid infrastructure projects and ensure the United States can meet the rising energy demands of the AI era.

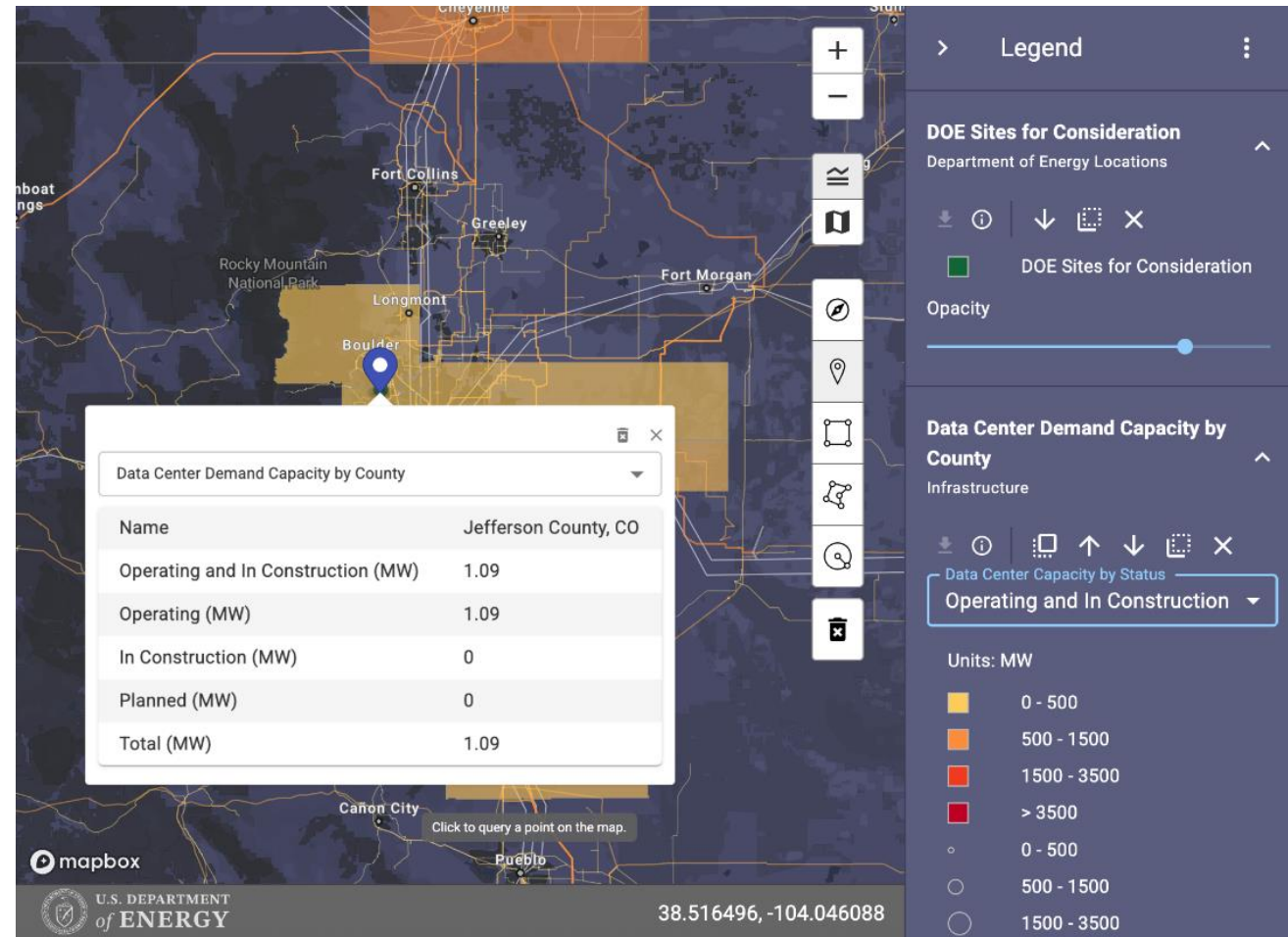
The state-of-the-art interactive tool integrates **decades of NREL's grid modeling and spatial analysis expertise**, offering a comprehensive, map-based platform for evaluating infrastructure interdependencies and siting opportunities at a large-scale.



maps.nrel.gov/speed-to-power

Why Did We Build It?

- Data centers and other drivers are creating **unprecedented demand growth on the grid**, with tens to hundreds of gigawatts of new load expected in coming years.
- Strategic, informed siting considerations and decisions are critical to ensure new data centers connect **efficiently, reliably, securely and cost-effectively**.
- This tool equips stakeholders with the ability to evaluate **critical infrastructure interdependencies** between data center demand capacity, fiber optic cables, transmission lines and many more considerations.



<https://maps.nrel.gov/speed-to-power>

How Can It Help Guide Smarter Data Center Siting Decisions?

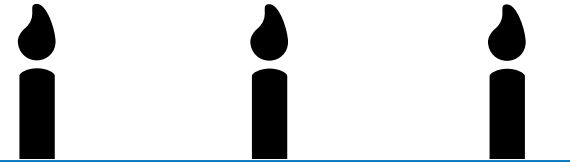
- **Data Center Developers and Hyperscalers:** can identify cost-effective and reliable siting opportunities.
- **Utilities:** can plan transmission and generation expansions that keep pace with rapid demand growth.
- **Federal, State, and Local Decisionmakers:** can coordinate policy, investment, and permitting for large-scale infrastructure projects.
- **Investors and Industry Partners:** can assess co-location potential, evaluate system trade-offs, and reduce risk in project development.

Why NREL?



- This tool builds on NREL's decades of expertise and leadership in **grid modeling integration and spatial analysis**.
- Showcases NREL's unique ability to provide decision support and illustrative options that pair complex infrastructure data into an **accessible, actionable format for stakeholders**.

Siting “Layer-Cake” Enables User Choice Additive to Current GDO-Funded Work



Cooling technologies

Natural gas network

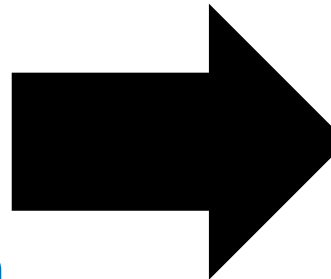
Fiber network

Electricity Rates

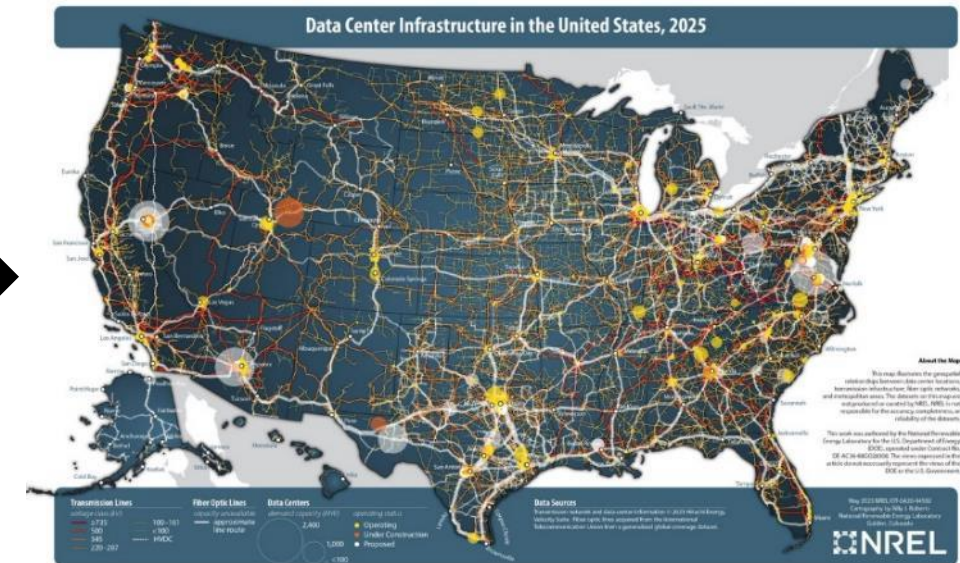
Electric grid infrastructure

Known land-use exclusions and setbacks

User choose which layers to visualize



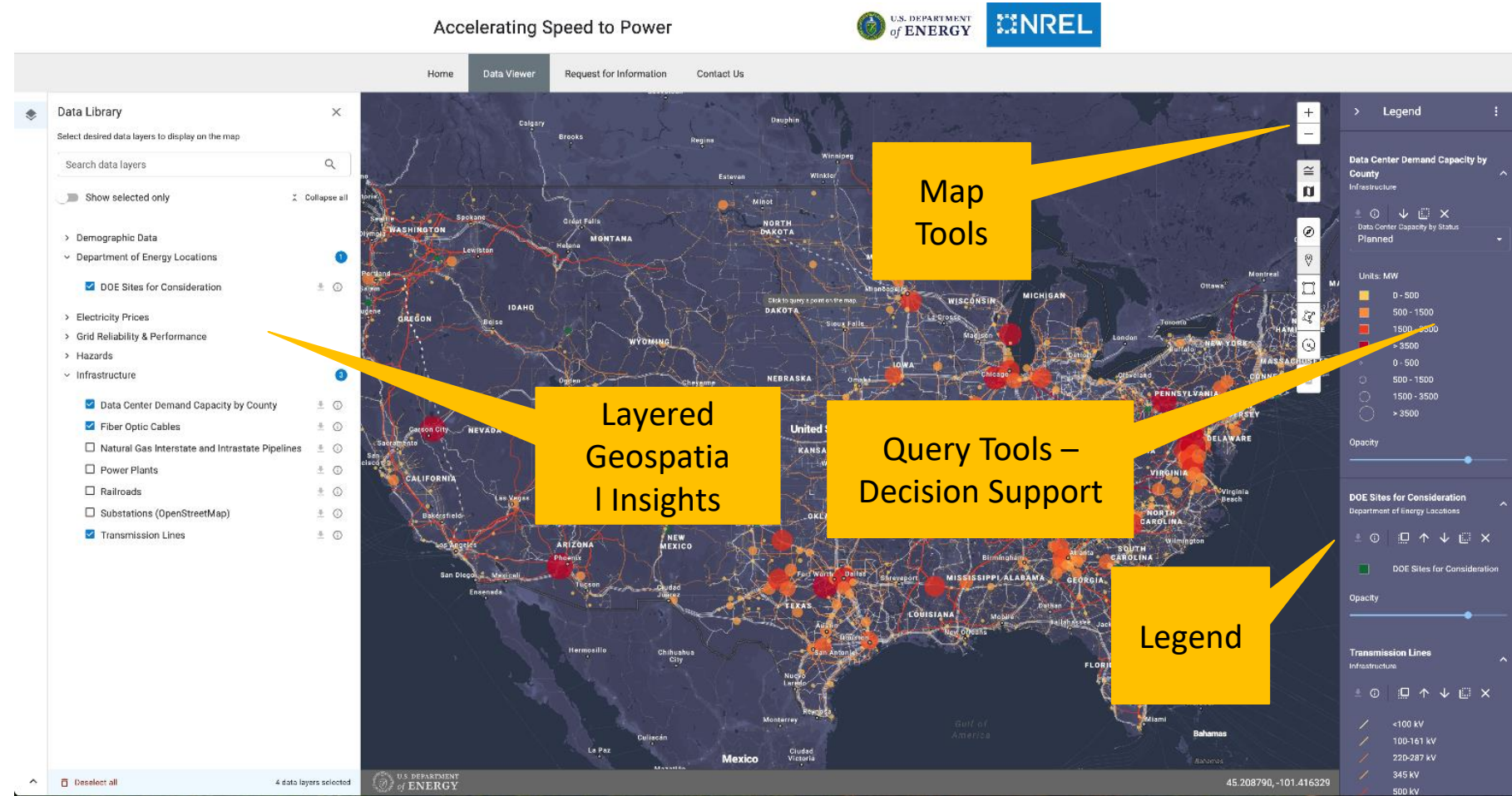
GDO Large Loads maps are static; this work adds more customization to respond to users



... but asks from hundreds of LinkedIn comments (zoom into my state/project?) suggest potential for customization.

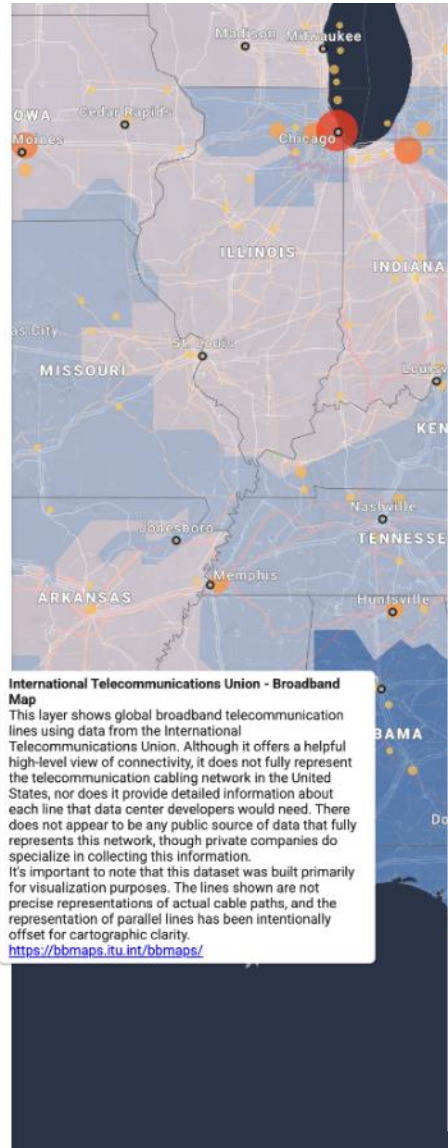
Data Viewer – Key Features

- **Layered Geospatial Insights:** Users can zoom in and explore data layers including power plants, transmission lines, fiber-optic cables, natural gas interstate and intrastate pipelines and more—all in one interactive map.
- **Decision Support:** Designed to support strategic and cost-effective siting decisions for data centers and other large loads.
- **Scenario Exploration:** Enables users to evaluate siting constraints, co-location opportunities, and energy system trade-offs.



Layer Insights and Capabilities

- Demographic Data
 - ☐ Population Count (day)
 - ☐ Population Count (night)
- Department of Energy Locations
 - ☒ DOE Sites for Consideration
- Electricity Prices
 - ☐ Electricity Prices (2023)
- Grid Reliability & Performance
 - ☒ NERC Reserve Margins
- Hazards
 - ☐ FEMA National Risk Index - Buildings
- Infrastructure
 - ☒ Data Center Demand Capacity by County
 - ☒ Fiber Optic Cables
 - ☐ Natural Gas Interstate and Intrastate Pipelines
 - ☐ Power Plants
 - ☐ Railroads
 - ☐ Substations (OpenStreetMap)
 - ☒ Transmission Lines

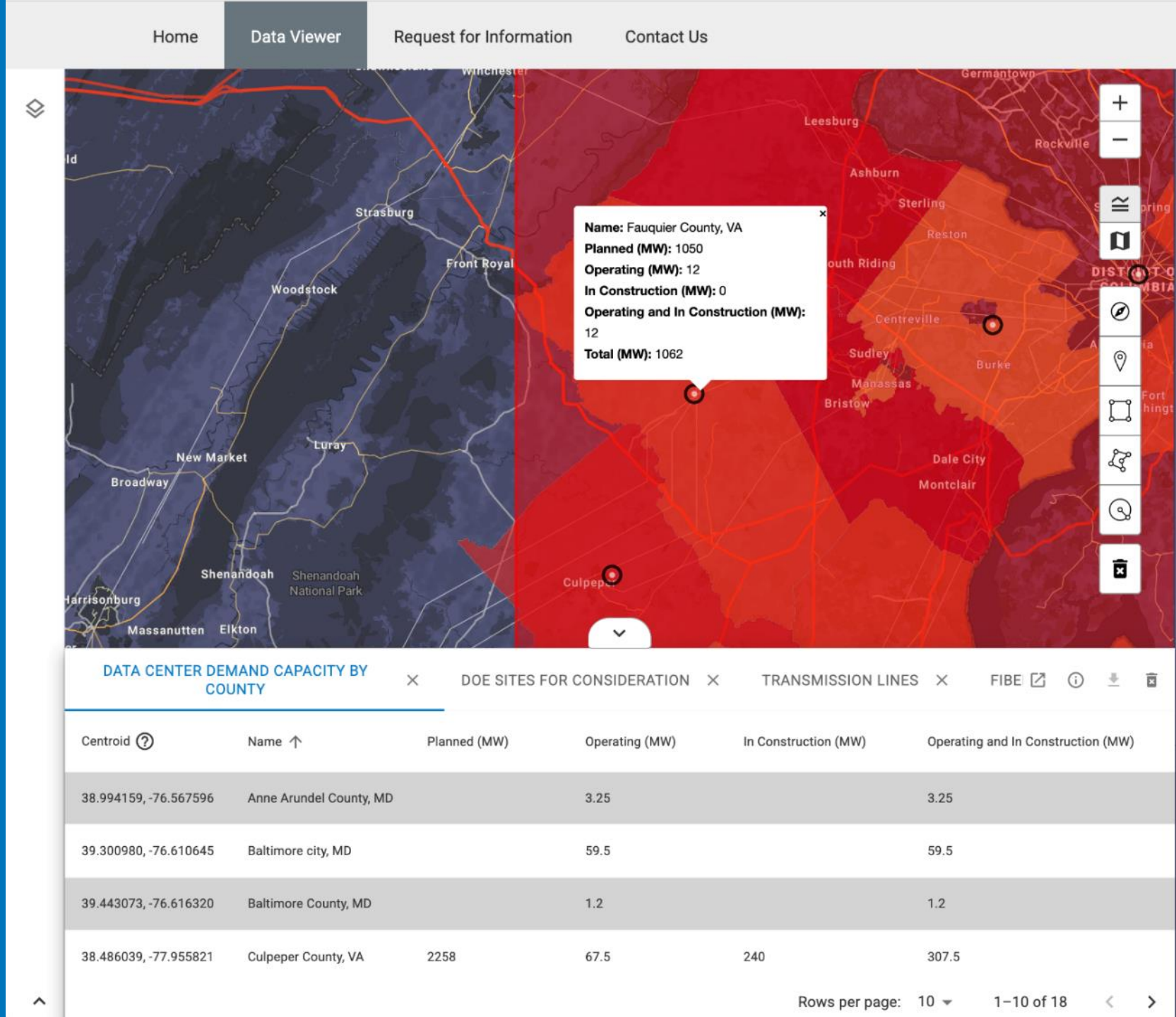


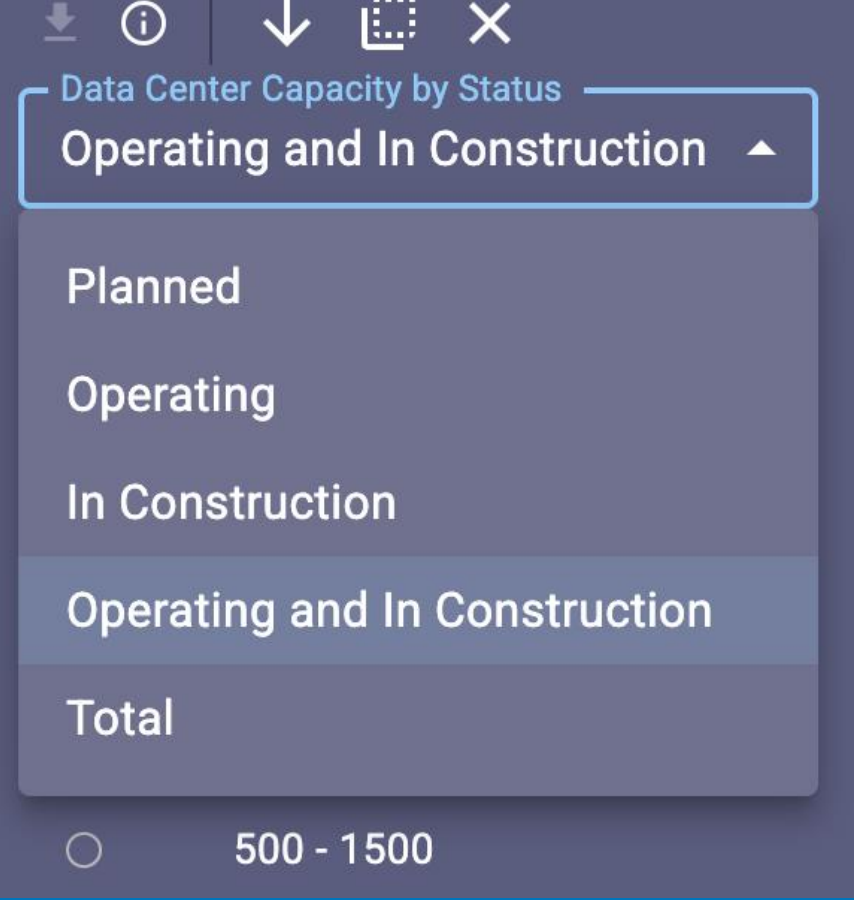
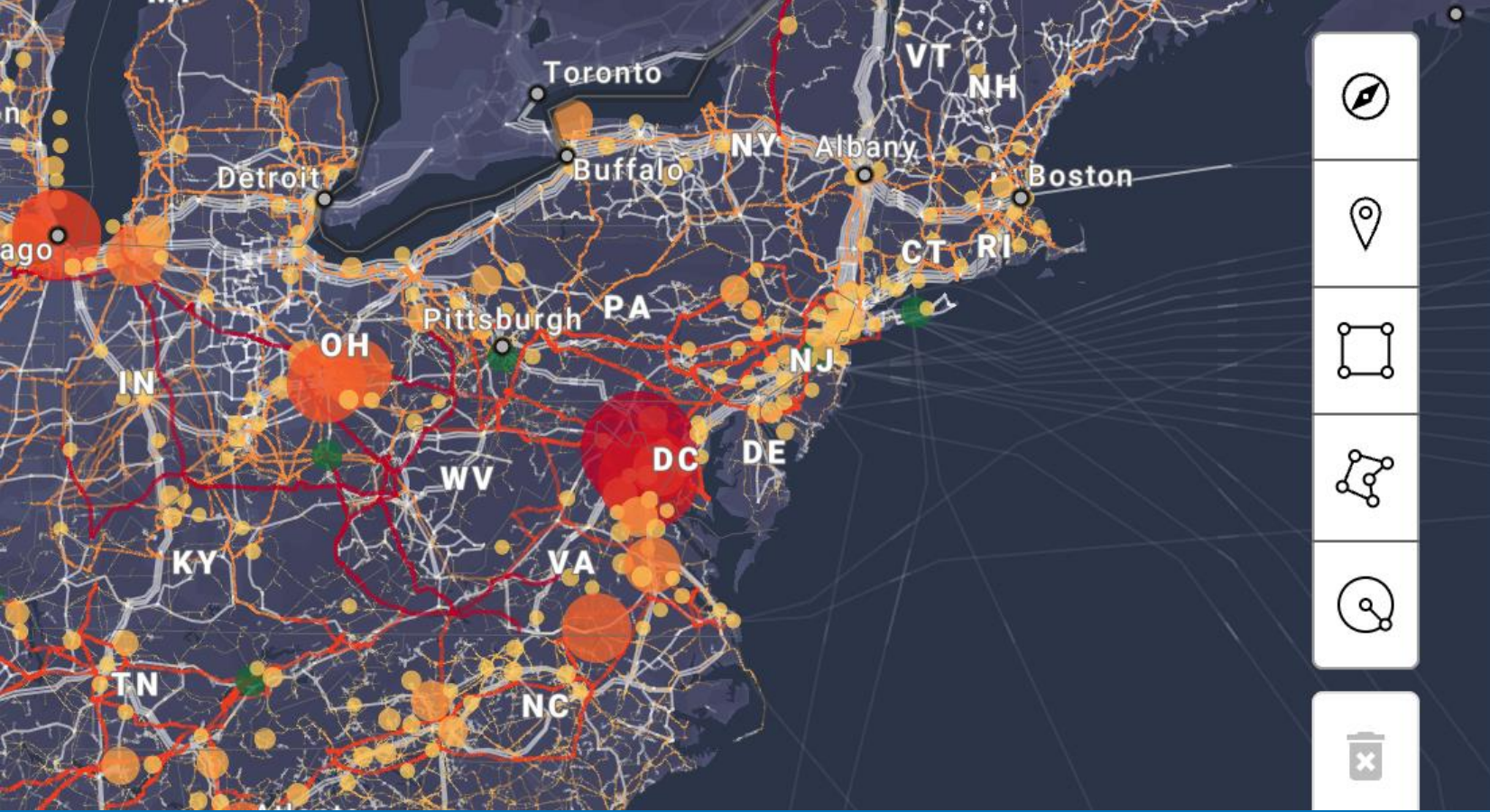
Users customize the geographic visualization to identify critical infrastructure and planning data

- **5 Categories**
 - Demographics, DOE sites, Electricity Prices, Grid Reliability, Hazards, Infrastructure
- Publicly available data
- Metadata available for all layers, including data source and ability to dive deeper using info button

Querying Capabilities

Select an area within the map to **view additional information about the data in table format**, including location (e.g. coordinate locations for DOE Sites), location names (e.g. Data Center Demand County), capacities (e.g. Power Plants), etc.





Legend Selection

Users can refine the view for some layers by filtering data to current or future states to understand current and future demand, risks, or needs.

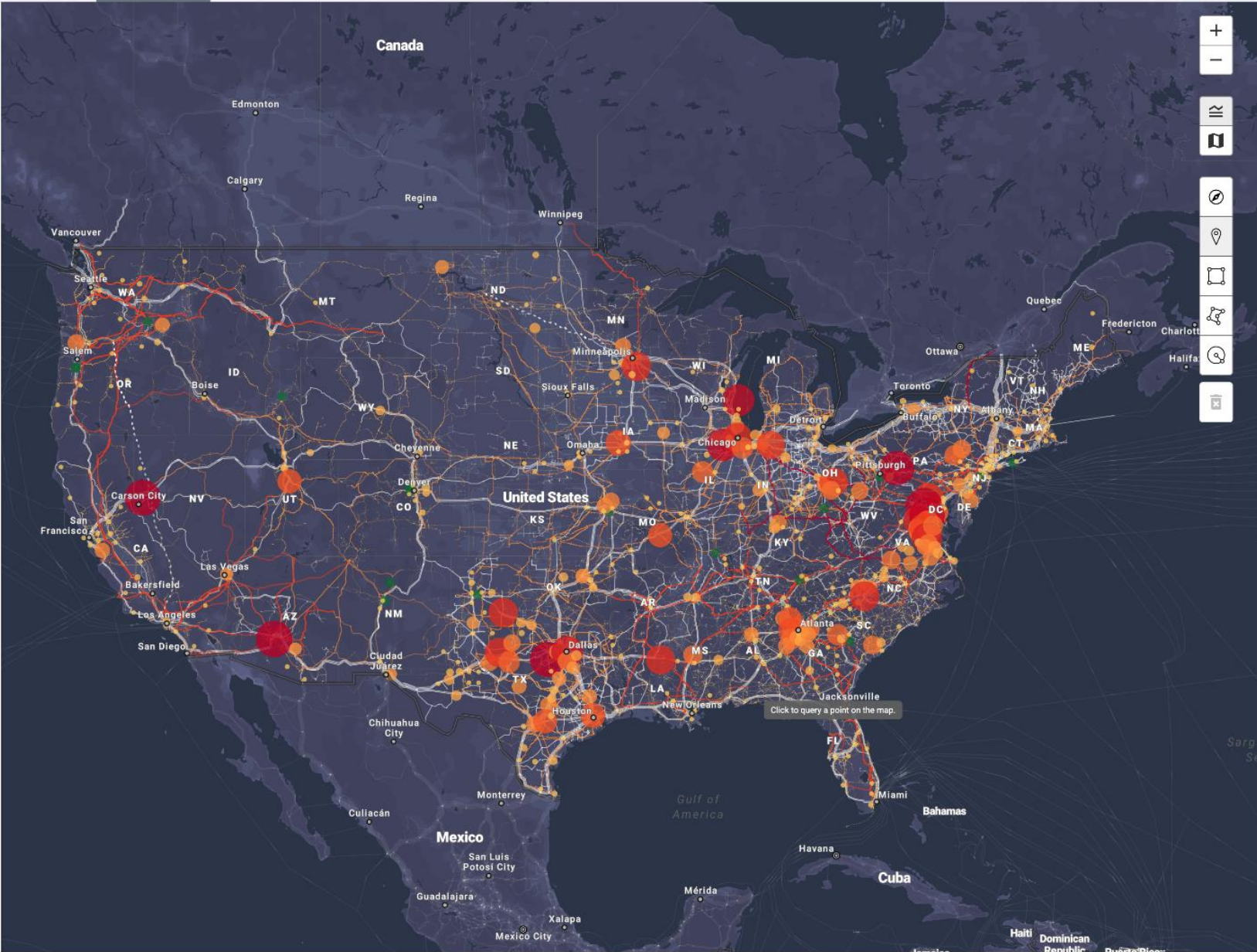
Data Library

Select desired data layers to display on the map

Search data layers

Show selected only Collapse all

- > Demographic Data
- > Department of Energy Locations
 - ☒ DOE Sites for Consideration
- > Electricity Prices
- > Grid Reliability & Performance
- > Hazards
- > Infrastructure
 - ☒ Data Center Demand Capacity by County
 - ☒ Fiber Optic Cables
 - ☐ Natural Gas Interstate and Intrastate Pipelines
 - ☐ Power Plants
 - ☐ Railroads
 - ☐ Substations (OpenStreetMap)
 - ☒ Transmission Lines



Legend

Data Center Demand Capacity by County

Infrastructure

Data Center Capacity by Status
Planned

- Units: MW
- 0 - 500
 - 500 - 1500
 - 1500 - 3500
 - > 3500
- Opacity

DOE Sites for Consideration

Department of Energy Locations

- ☒ DOE Sites for Consideration
- Opacity

Transmission Lines

Infrastructure

- <100 kV
- 100-161 kV
- 220-287 kV
- 345 kV
- 500 kV

Q&A and Thank You!

www.nrel.gov



Important Information

Due Date: 5 PM Eastern on Friday, November 21

Responses submitted to SpeedtoPowerRFI@hq.doe.gov with
“RFI Response – Accelerating Speed to Power” in the subject line.

- If you are interested in a direct meeting with the Speed to Power team in addition to or in lieu of this webinar to discuss or ask questions about the RFI, please feel free to email SpeedToPowerRFI@hq.doe.gov.
- **Note:** email submissions will be considered to be the formal responses to the RFI.
- **Input received verbally will be considered informally.**



Thank You!