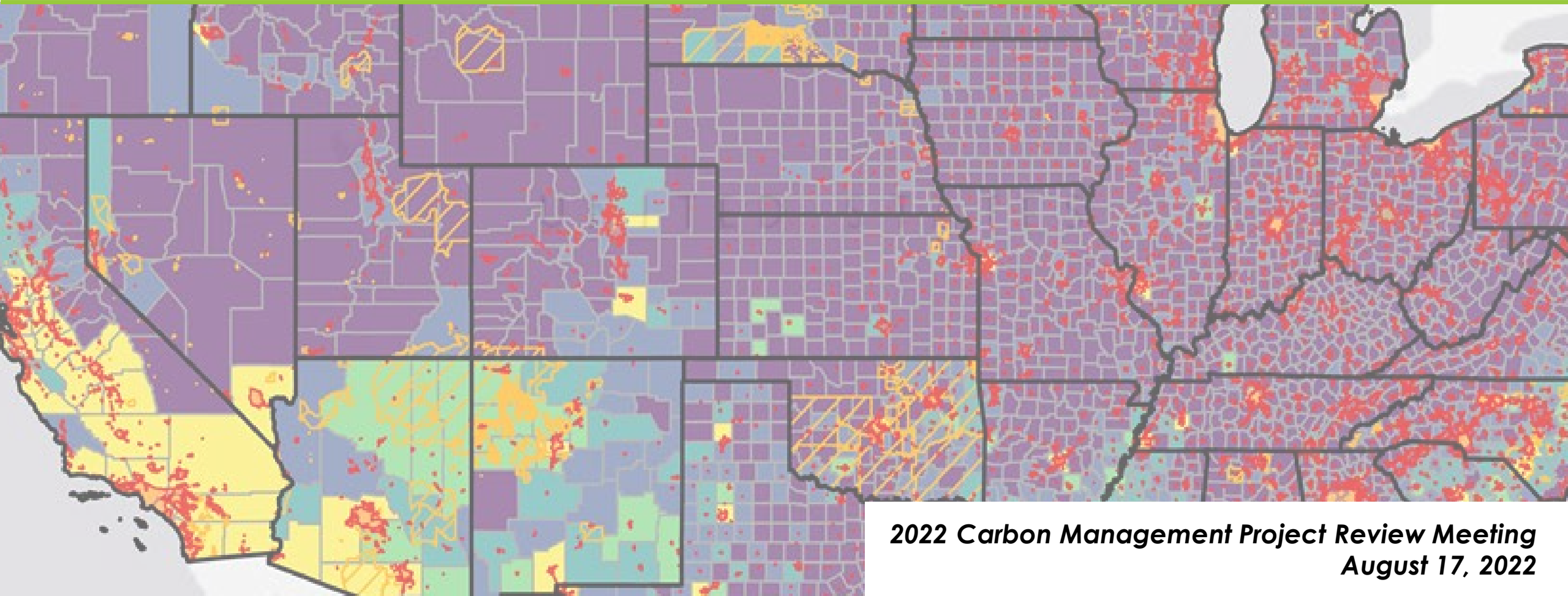


Insights into CCS EJ/SJ Opportunities to support Energy Community Transitions



Jennifer Bauer
Geo-Data Scientist

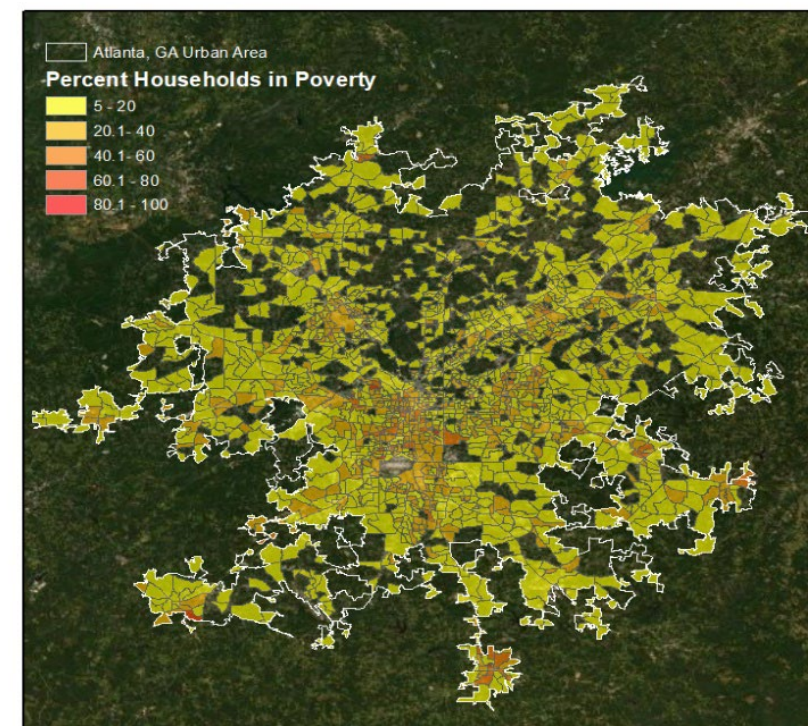


2022 Carbon Management Project Review Meeting
August 17, 2022

High Demand for EESJ Data & Information

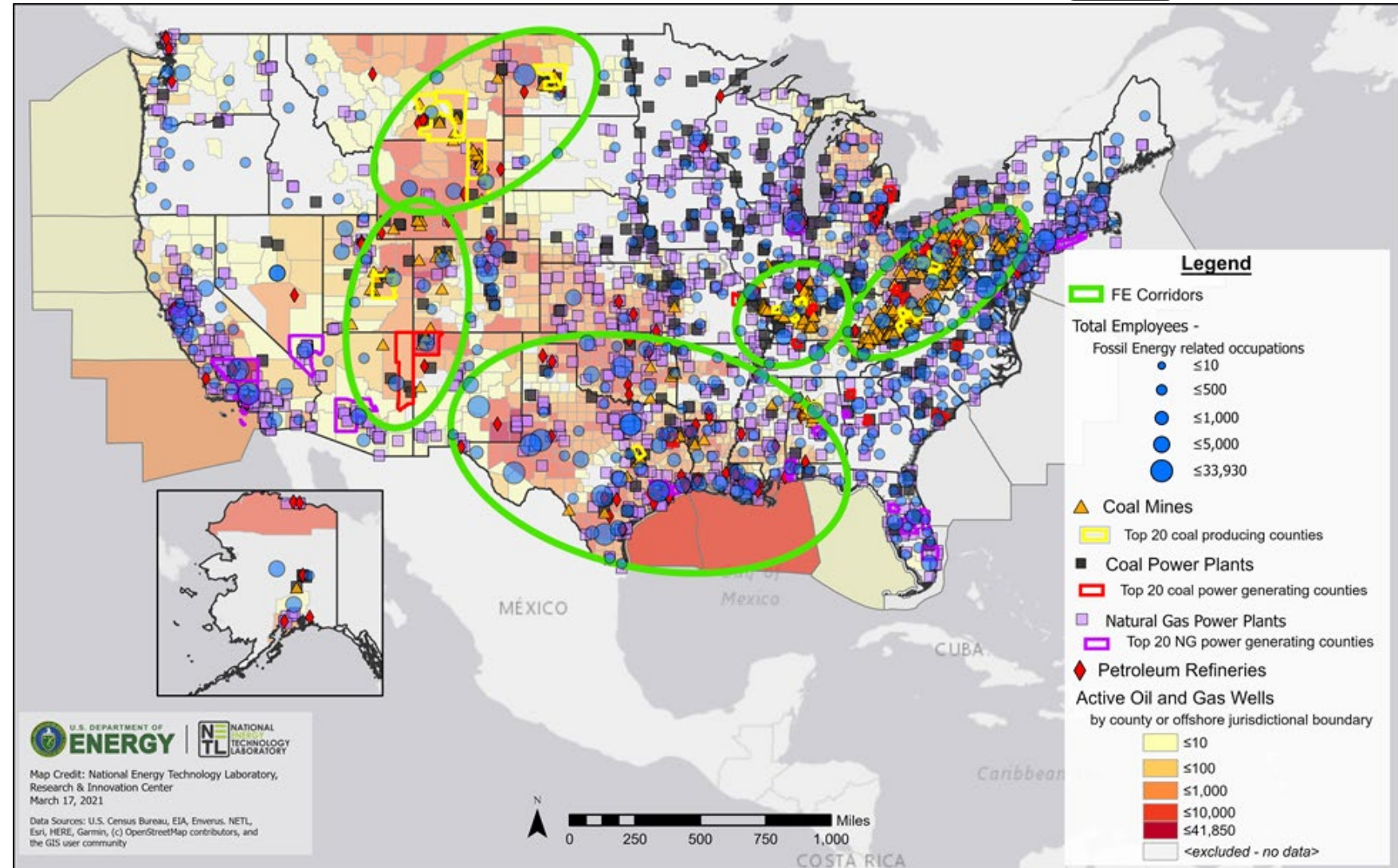
- Unprecedented opportunities for energy RDD&D
- However, this growth, coupled with initiatives like Justice40, all rely on common baseline information that can help stakeholders understand and assess key energy, environmental & social burdens in relation to their activities and broader needs.

40% of the overall benefits of certain Federal investments—including investments in **clean energy** and **energy efficiency**; clean transit; affordable and sustainable housing; training and workforce development; the remediation and reduction of legacy pollution; and the development of clean water infrastructure—must flow to disadvantaged communities. (Justice40 Initiative (EO 14008, Section 223))



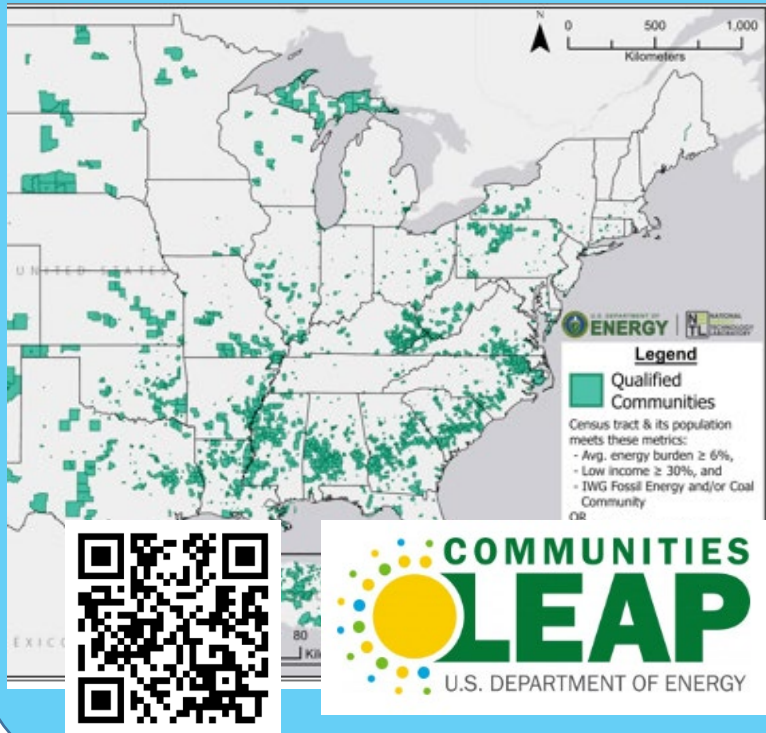
Value of Data to Support EESJ

- Requires a wide range of data & information, often at multiple spatial & temporal resolutions, to address needs (what do you want to explore, what questions you want to evaluate)
- Role & use of these data require authoritative resources, as well as targeted presentation/communication to ensure explainability & usability

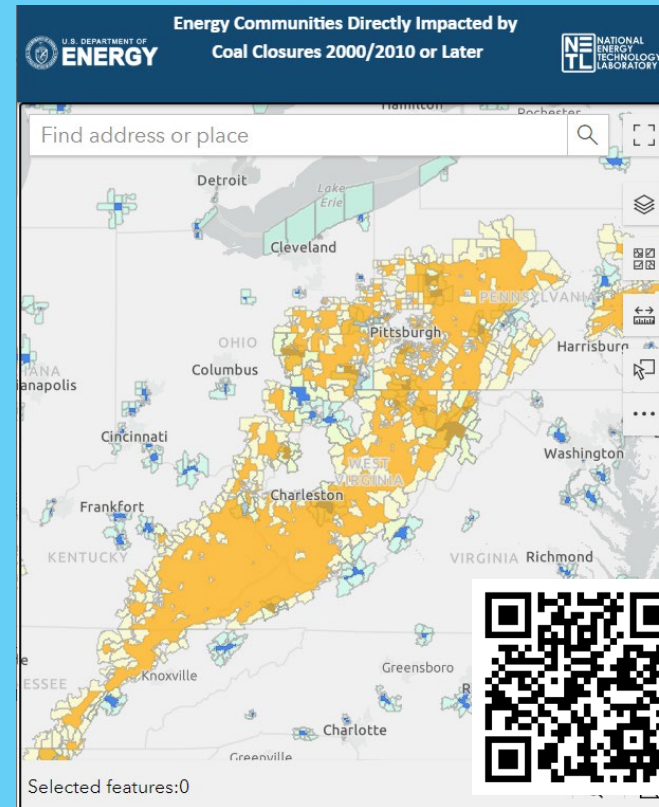


NETL's Supported, on-going EESJ Efforts

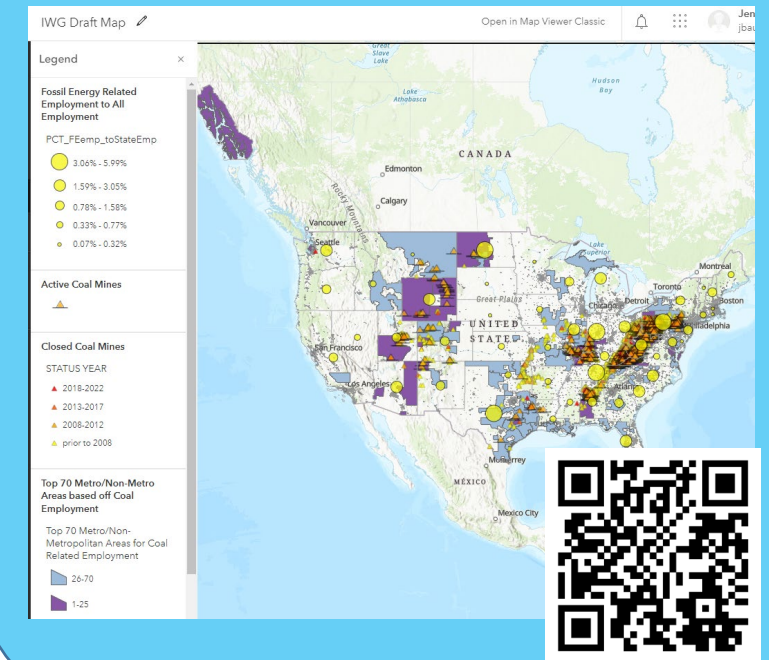
Justice40 Initiative & Communities LEAP Pilot



Energy Communities Directly Impacted by Coal Closures

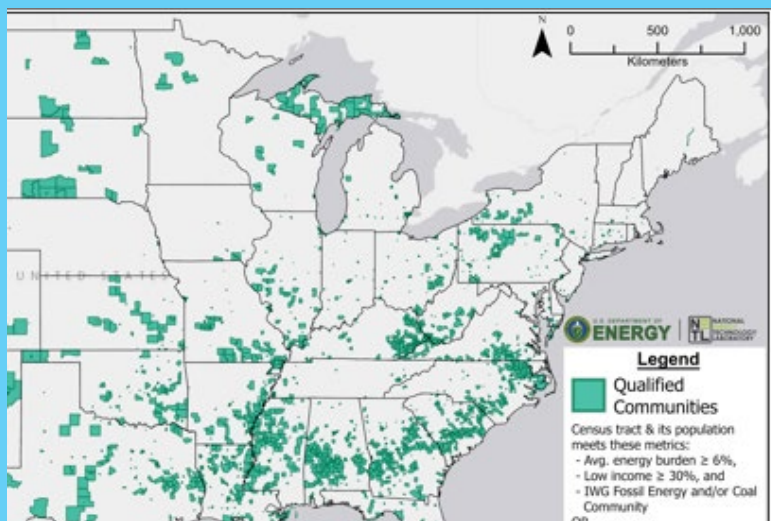


Interagency Working Group (IWG) on Coal & Power Plant Communities and Economic Revitalization

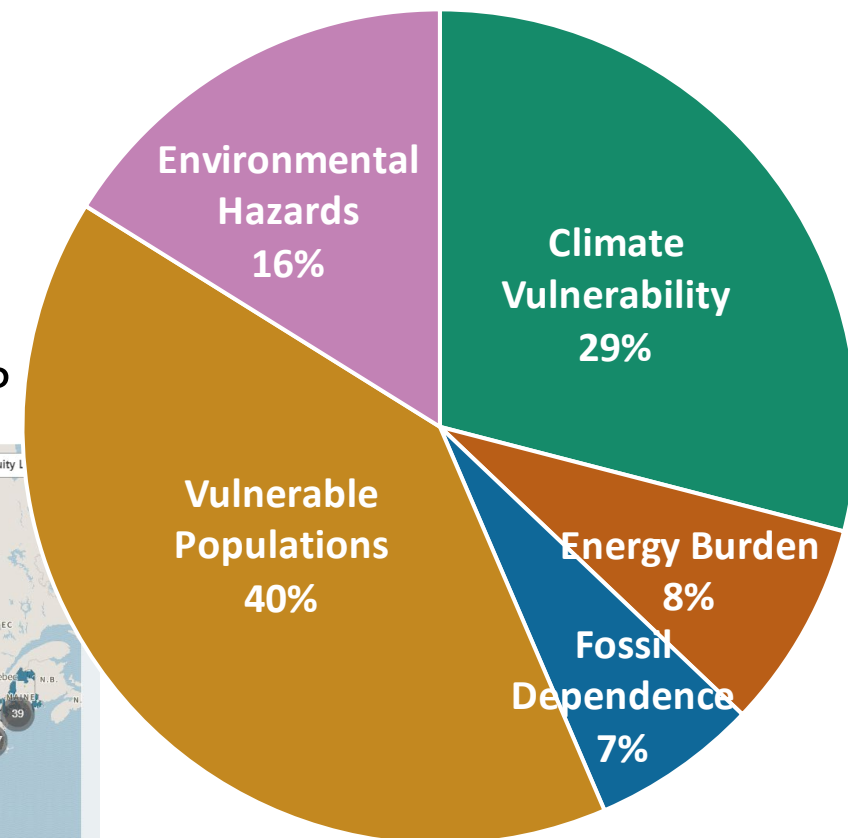
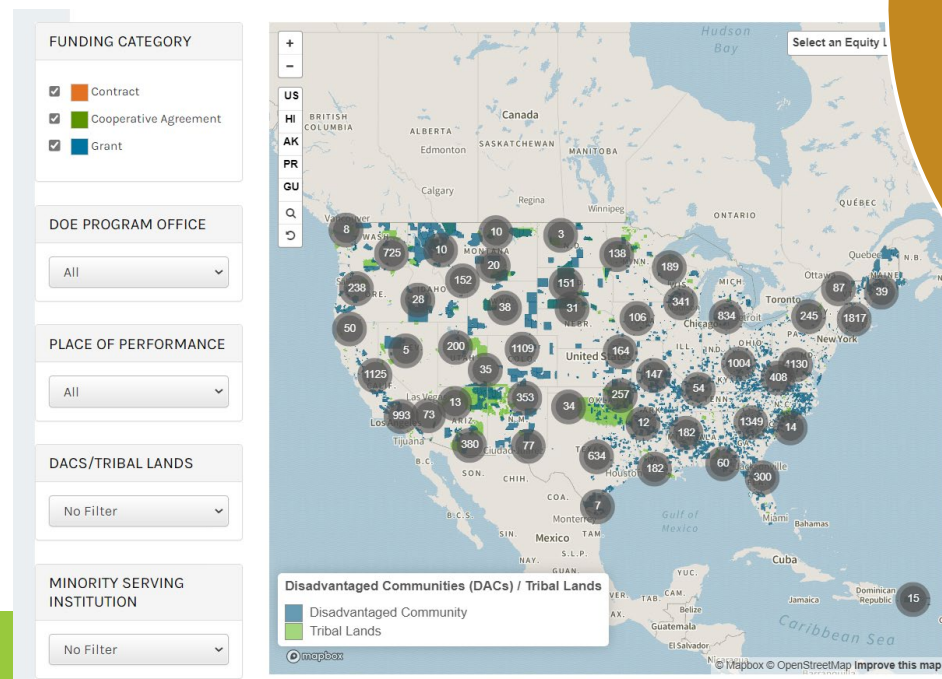


Leveraging Common Data for Diverse Applications

Justice40 Initiative & Communities LEAP Pilot



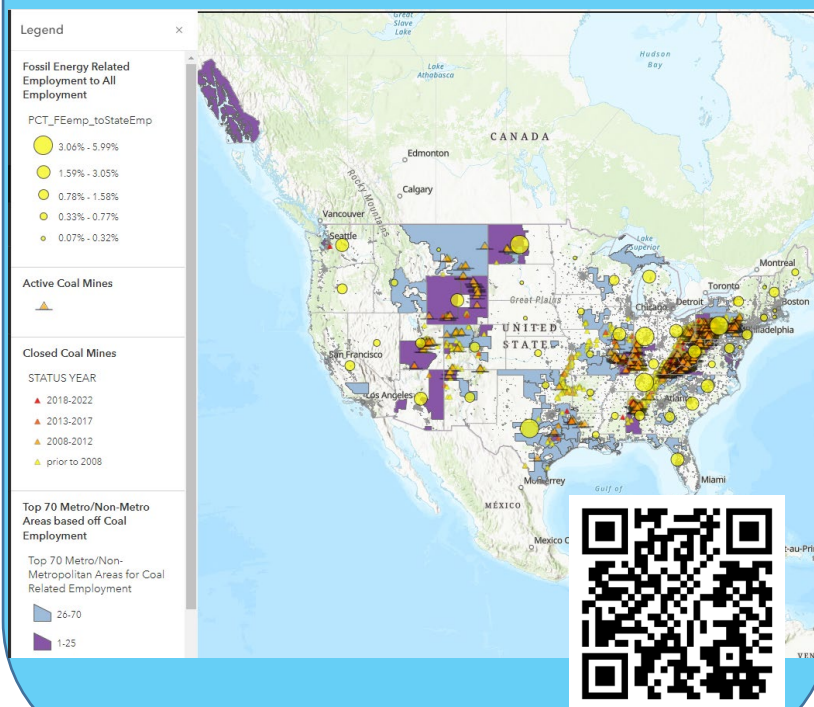
- Develop criteria for determining disadvantaged communities (DACs), for DOE's purposes
- Support Justice40 Initiative, as well as provide data that can be used to help communities identify alignments with new funding opportunities, like Communities LEAP



[Energy Justice Dashboard \(BETA\) | Department of Energy](#)

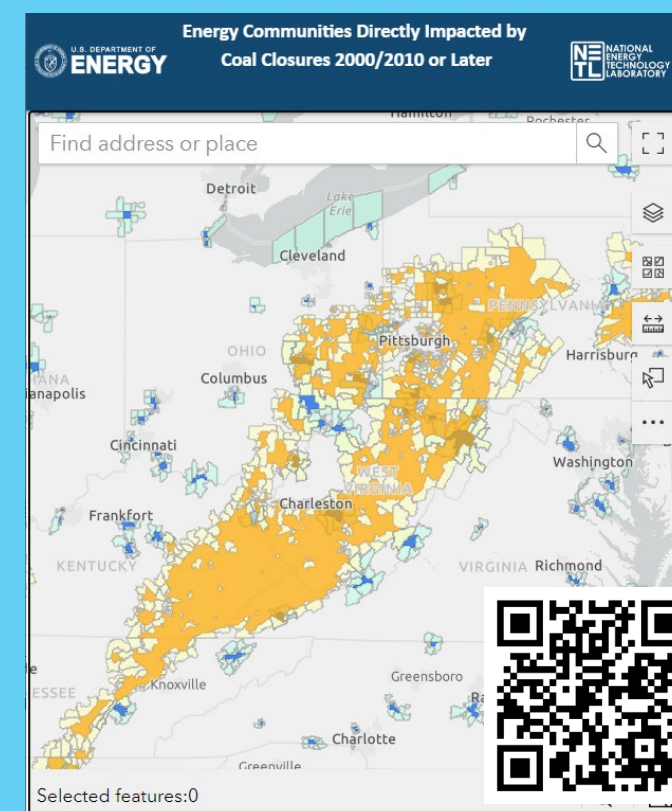
Leveraging Common Data for Diverse Applications

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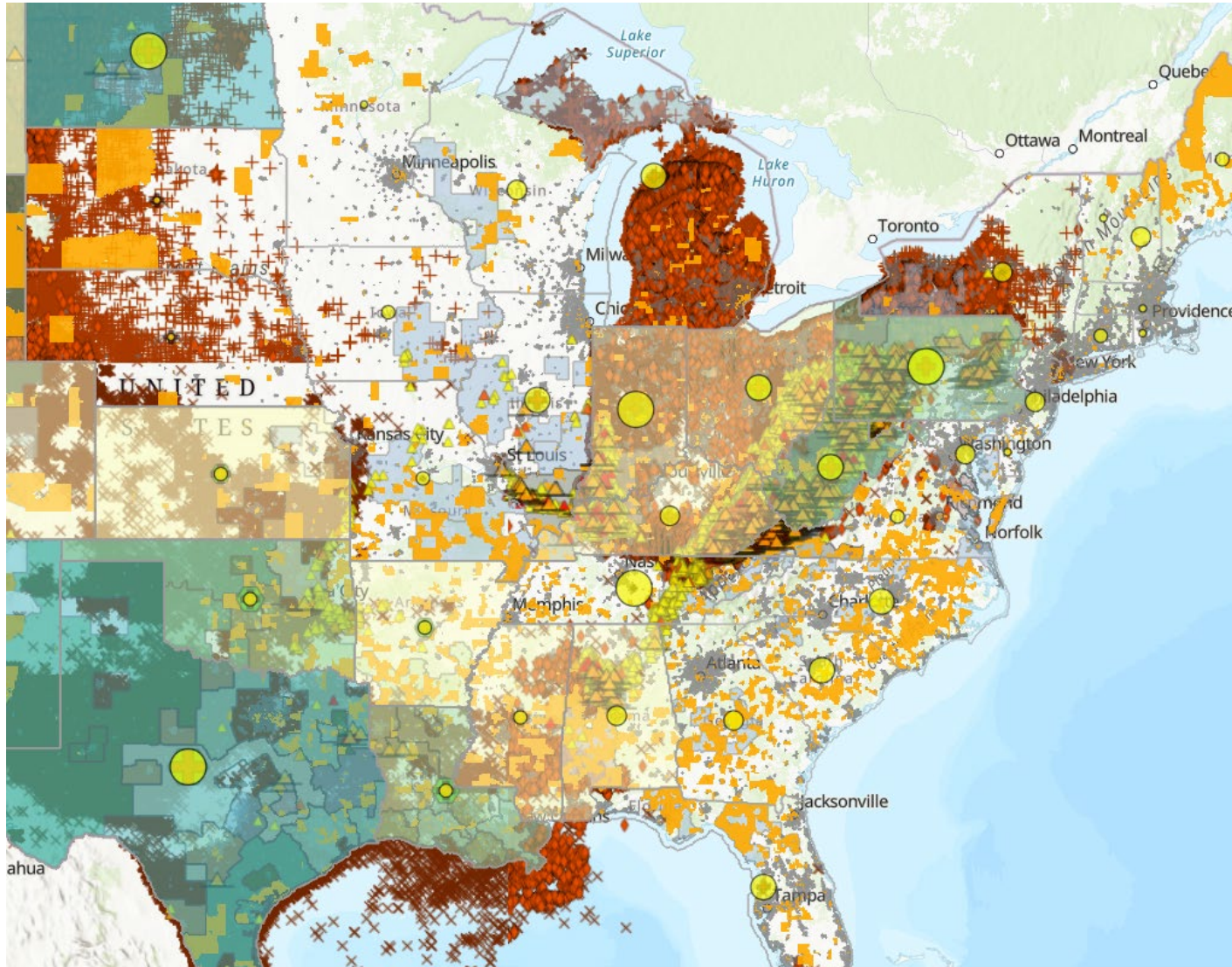


- Rapid analysis to identify coal communities for further engagement, leveraging data on historic coal-related closures and direct employment to ID communities as part of the initial IWG effort
- On-going expansion of work to incorporate additional data and information to understand where energy transitions may introduce additional stress or present opportunities to communities

Energy Communities Directly Impacted by Coal Closures



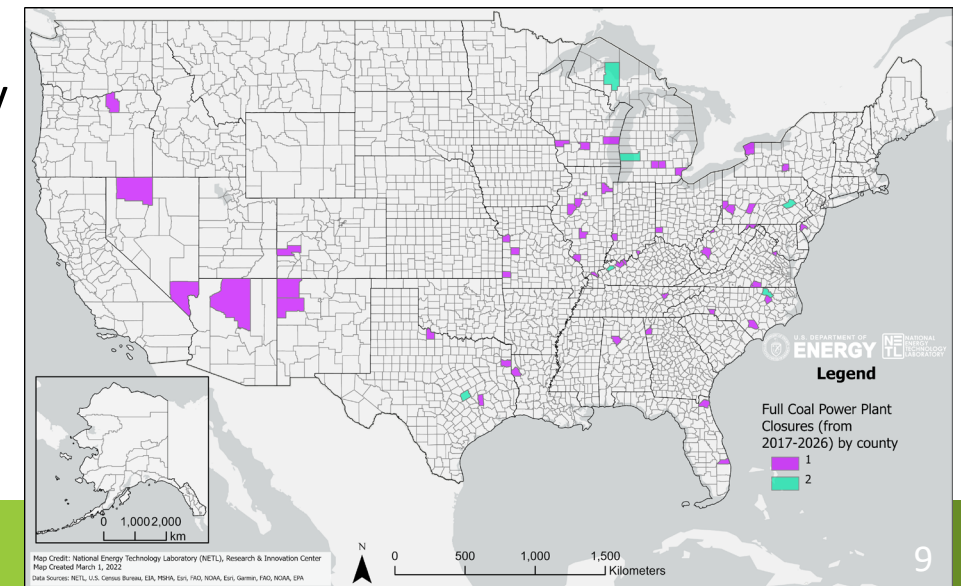
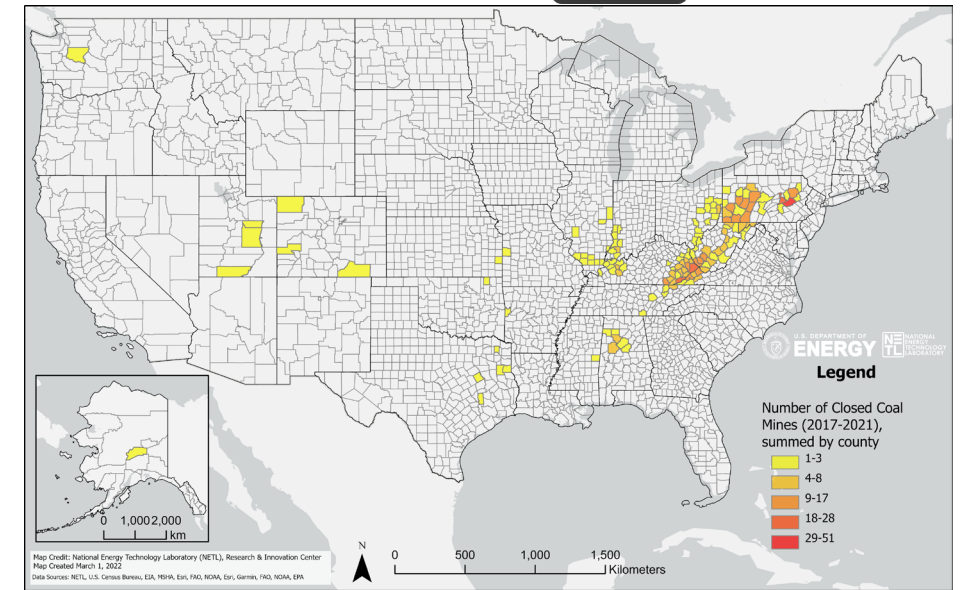
Increasing Complexity



- Depending on the project, the number of data variables & complexity of relationships can be ridiculously overwhelming and challenging for stakeholders to effectively interpret and use
- Leveraging integrated analytics, as well as ML & AI tools, can help simplify the data...
- But must be done smartly to reduce (or at least better characterize) underlying uncertainty and bias in these integrated analyses

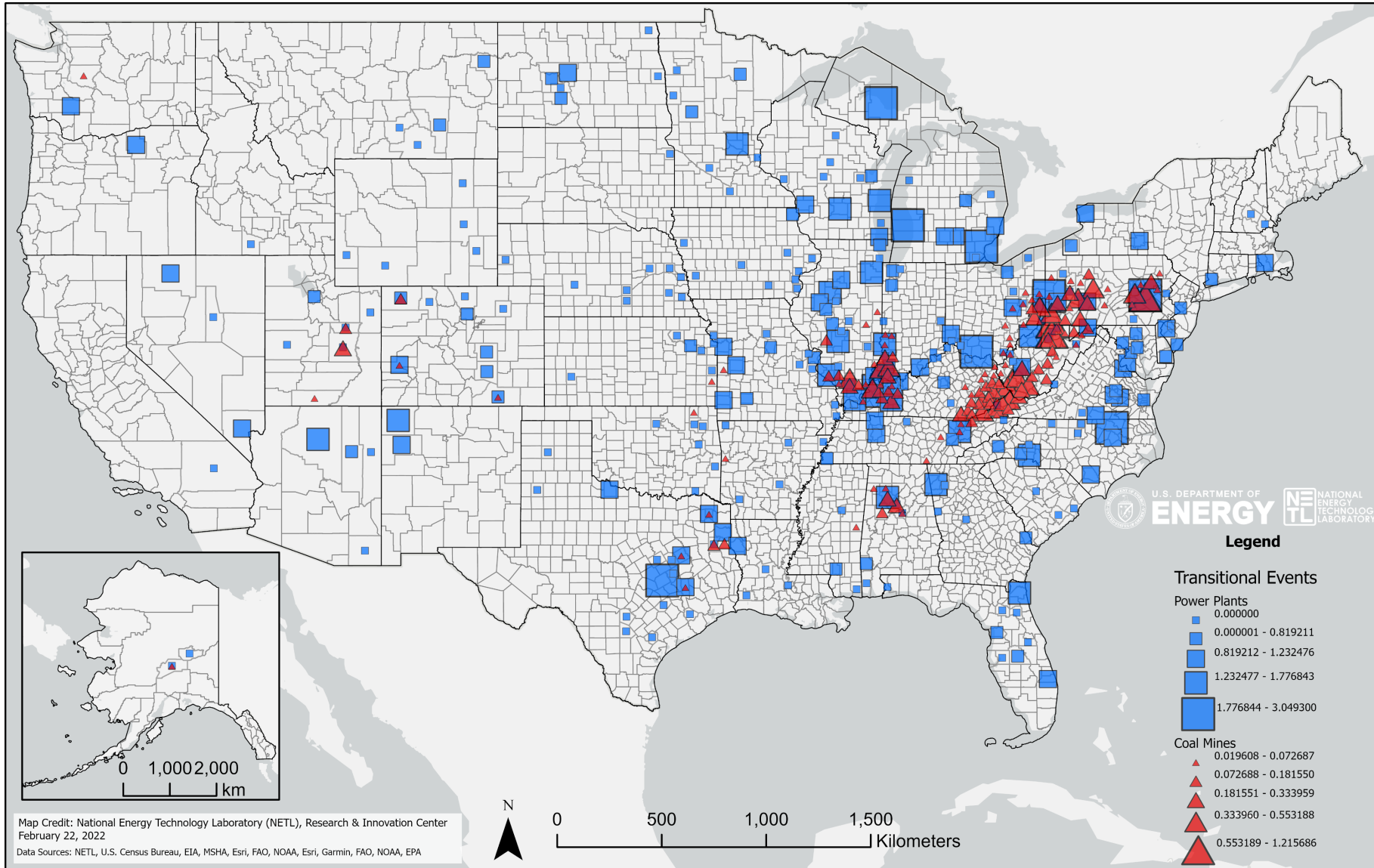
Under development: Energy Transitions Atlas

- Integrate data on Communities & Energy Transitions
 - Begin analytics with Coal data, at a county scale:
 - Coal Mine production & closures
 - Coal Power Generation retirements & planned retirements
 - Pull in additional community metrics, including:
 - Tax revenue from coal
 - Urban versus Rural
 - Poverty level
 - Average travel times to/from work
 - Percent of county households considered technology limited (based on broadband internet access)
 - Average level of education
 - And more to come...
- Introduce criteria & weights where needed to present critical information to stakeholders



Coal Transitional Events

Coal Mines & Coal Power Plants

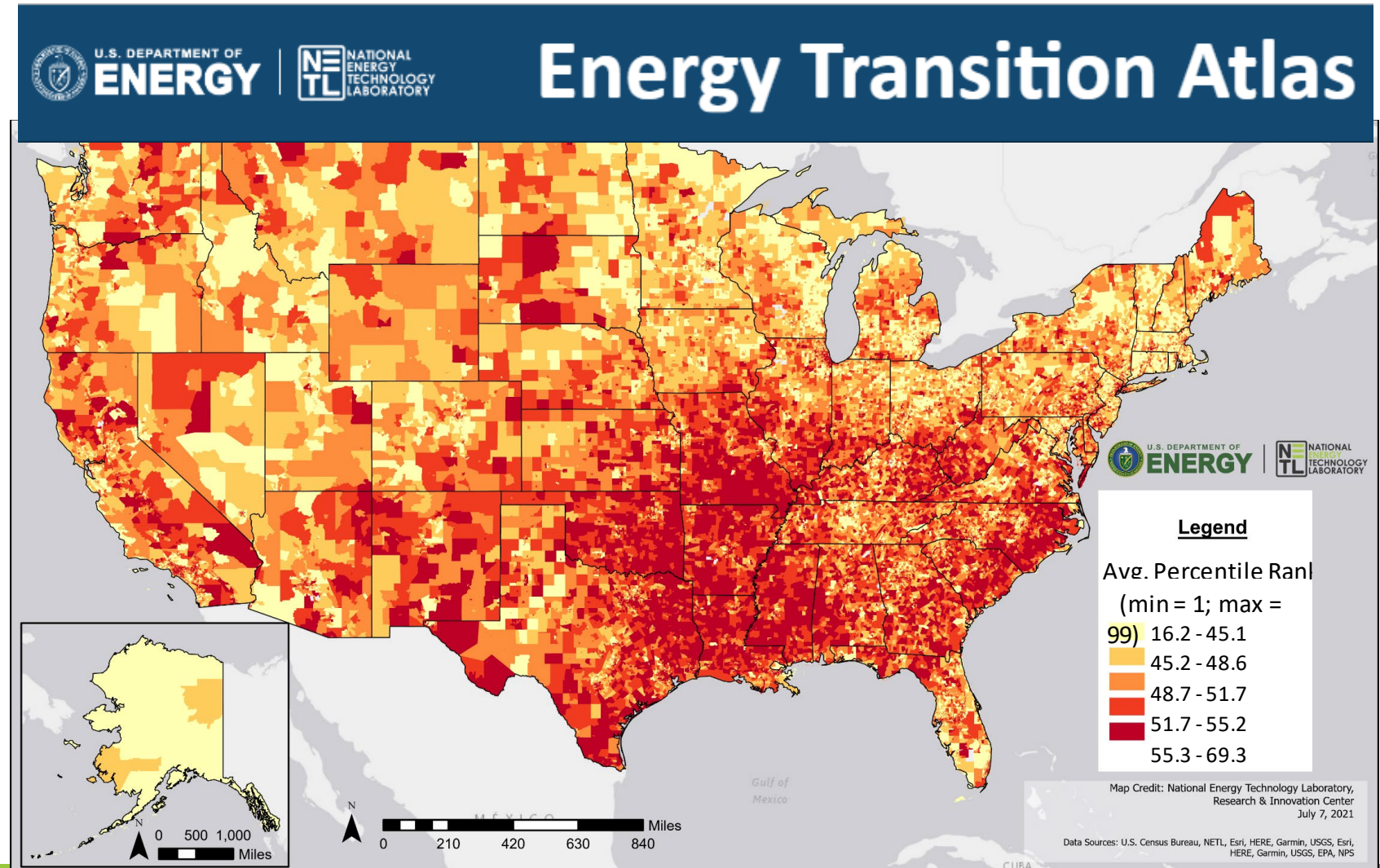


Map Credit: National Energy Technology Laboratory (NETL), Research & Innovation Center
February 22, 2022

Data Sources: NETL, U.S. Census Bureau, EIA, MSHA, Esri, FAO, NOAA, Esri, Garmin, FAO, NOAA, EPA

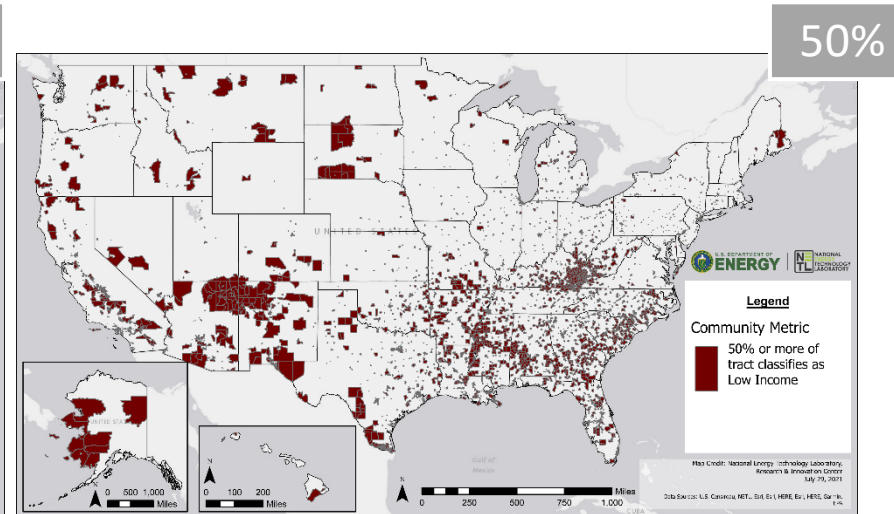
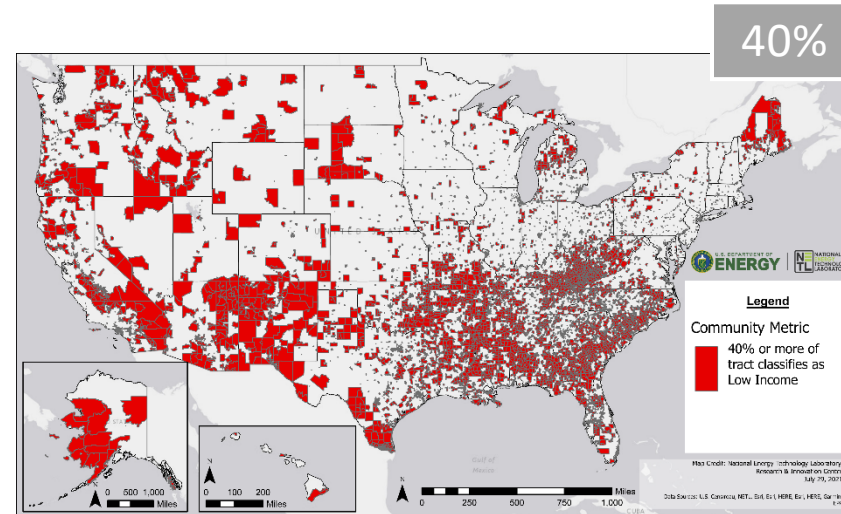
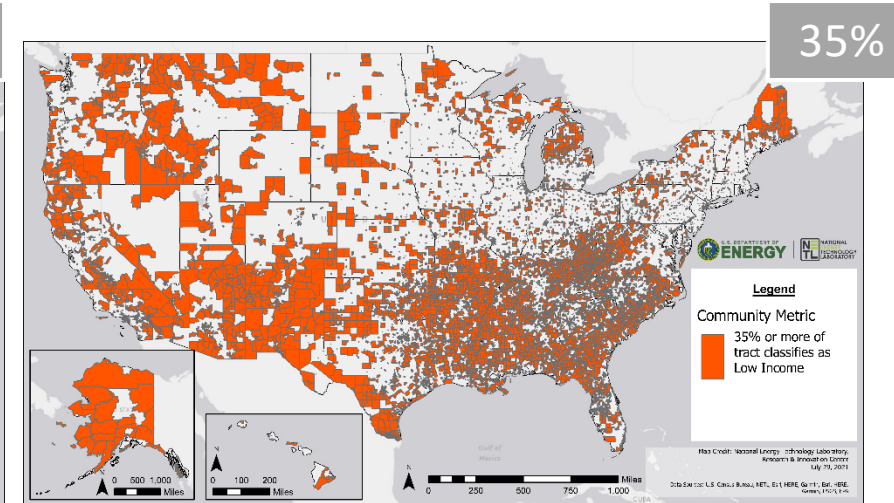
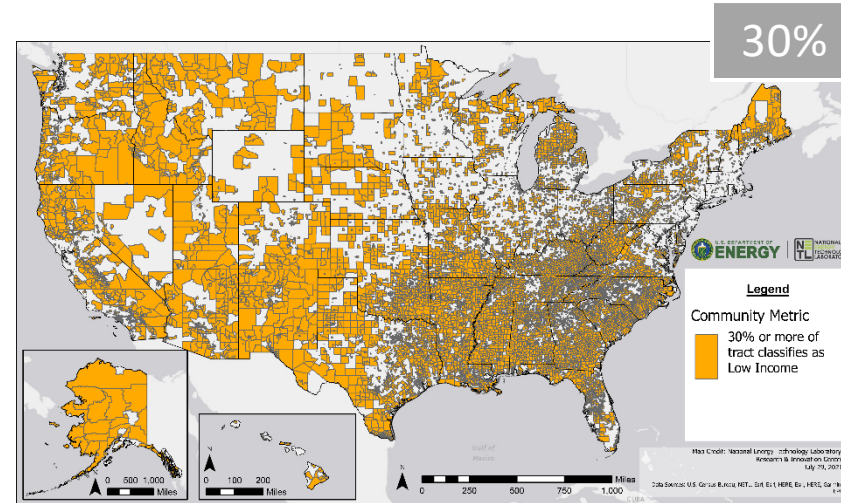
Getting Data Into People's Hands

- Energy Transition Atlas will provide:
 - Access to both individual and integrated data through EDX++ & EDX Spatial
 - Spotlight key insights & trends for different communities & energy transition needs
 - Allow others to build from & use data for their purposes



Critical Takeaways for EESJ Data

- Clearly define your data and information needs
 - Engage your stakeholders throughout the process if possible
- Ensure details are provided, and that you document sufficient details if you are performing integrative analyses
- Understand the use limitations of the data, and how they may impact their ability to address your needs



NETL RESOURCES

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