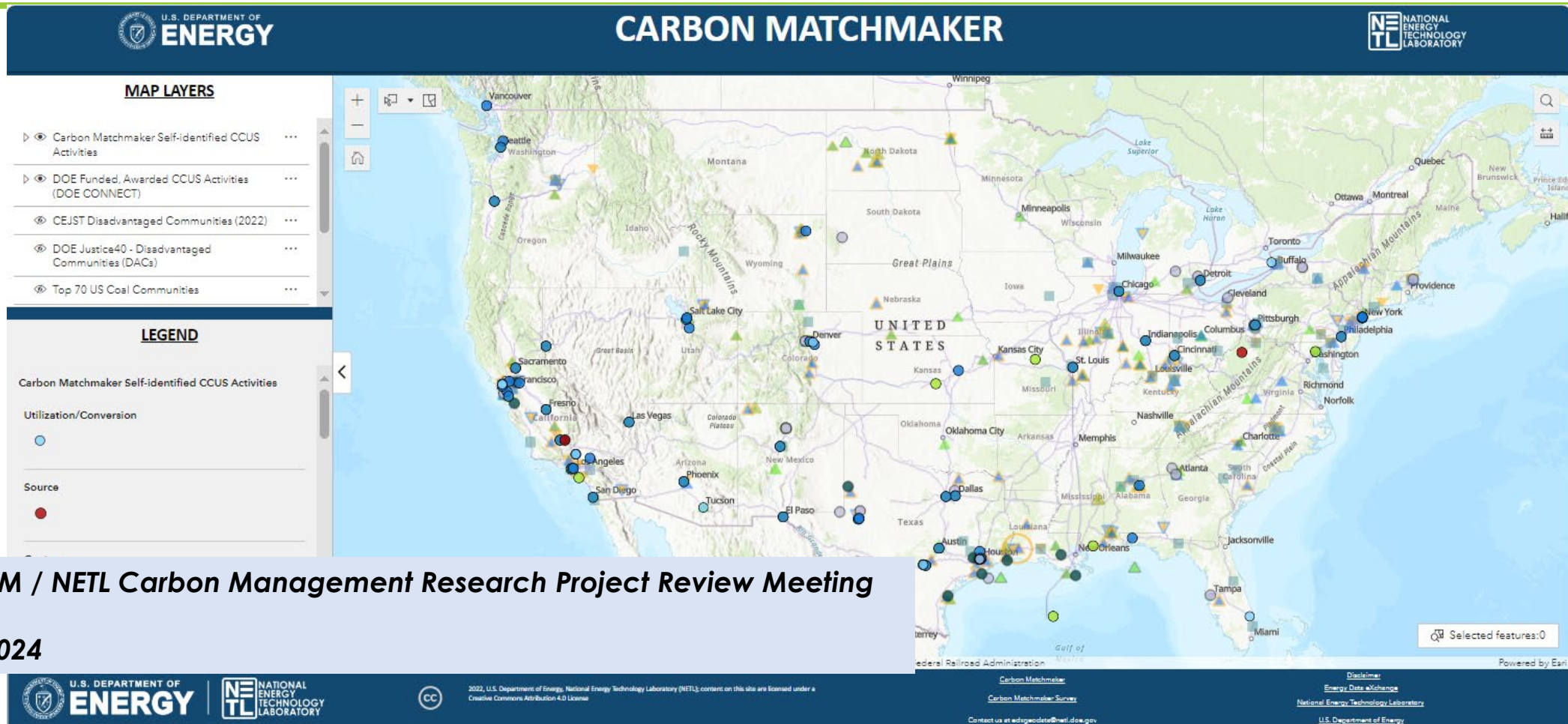


Carbon Matchmaker: *Connecting CCUS Activities and Stakeholders*



Jennifer Bauer– NETL, Geo-Data Scientist
Kevin Dooley – DOE, Carbon Transport Engineer



2024 FECM / NETL Carbon Management Research Project Review Meeting

Aug. 5, 2024



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Carbon Matchmaker
Carbon Matchmaker Surveys
Contact us at edjgpedata@netl.doe.gov

Disclaimer
Energy Data Exchange
National Energy Technology Laboratory
U.S. Department of Energy

Powered by Esri

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Disclaimer

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Carbon Matchmaker (CMM)

- A joint DOE-FECM and NETL application
- Designed to collect self-identified carbon capture, utilization, and storage (CCUS) and carbon dioxide removal (CDR) activities and potential supply chains
- Website published on July 13, 2022


Carbon Matchmaker

Office of Fossil Energy and Carbon Management

<https://www.energy.gov/fecm/carbon-matchmaker>

Office of Fossil Energy and Carbon Management » Resources » Carbon Matchmaker

The Office of Fossil Energy and Carbon Management is focused on advancing carbon management technologies to achieve net-zero greenhouse gas emissions through strong public-private partnerships and in a just and sustainable



Learn More: An Interactive Diagram Carbon Management Visions Interactive Diagram

CDR projects across management hubs, domestically and

Motivation for Carbon Matchmaker (CMM)

- Offer a mechanism to help support connection and teaming between CCUS/CDR projects and activities
- Increase awareness and help facilitate development of regional carbon management hubs
- Provide domestic and international communities, industries, and technology development stakeholders with carbon dioxide supply and demand maps for current and planned projects
- Highlight past and currently funded DOE carbon management projects

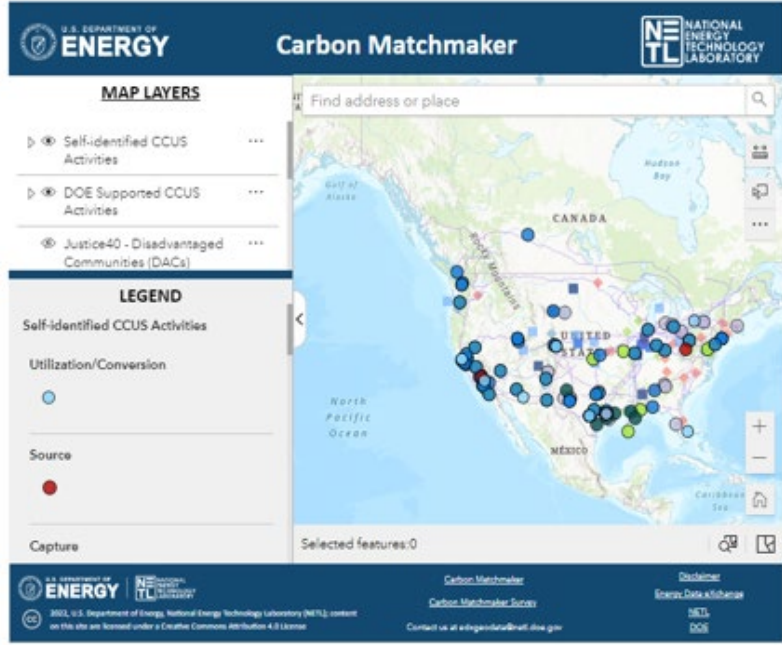
Carbon Matchmaker Self-Identification Form

To include your carbon management activity or activities in Carbon Matchmaker, please fill out the [Carbon Matchmaker Form](#).

If your organization has many ongoing or planned activities that would be onerous to enter in the form, or if your activities are difficult to geolocate (such as a transport network), please email the CO2 Matchmaker team at edxgeodata@netl.doe.gov.

This initiative is aligned with the approach of DOE's H2 Matchmaker. Read more information on [H2 Matchmaker](#).

Carbon Matchmaker Interactive Map (Beta Version)

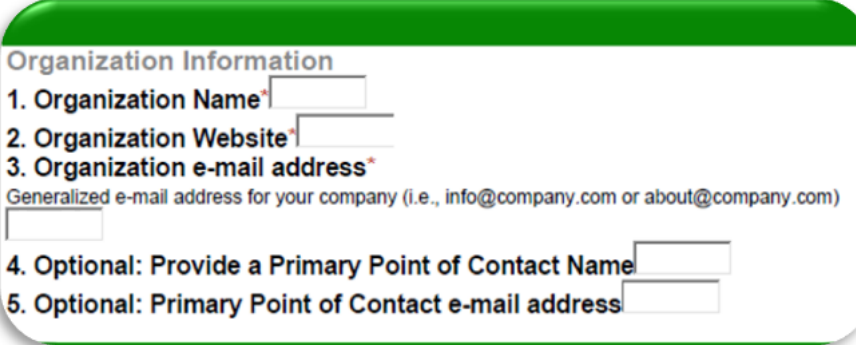


The screenshot shows the Carbon Matchmaker Interactive Map interface. It features a search bar at the top with the text "Find address or place". Below the search bar is a "MAP LAYERS" section with three expandable categories: "Self-identified CCUS Activities", "DOE Supported CCUS Activities", and "Justice40 - Disadvantaged Communities (DACs)". A "LEGEND" section is also visible, detailing "Self-identified CCUS Activities" with sub-categories for "Utilization/Conversion" (represented by a blue circle) and "Source" (represented by a red circle). The map itself shows the United States with numerous colored markers (blue, red, green, yellow) indicating the locations of various carbon management projects. The interface includes standard map navigation controls like zoom in (+) and zoom out (-) buttons, and a "Selected features: 0" indicator at the bottom right. The footer contains logos for the U.S. Department of Energy, NETL, and EDX, along with copyright information and contact details.

Click [here](#) to open the interactive map in a new browser.

Carbon Matchmaker (CMM) Self-Identification Form

- The CMM form utilizes Survey123
 - Provides four main sections of questions:
 - Organization Details
 - Activity Specific Questions
 - Activity Details
 - Number of questions based off prior answers
 - Optional Questions
- Once submitted, each record undergoes a QA/QC process by NETL and DOE FECM staff for approval and is uploaded to CMM map

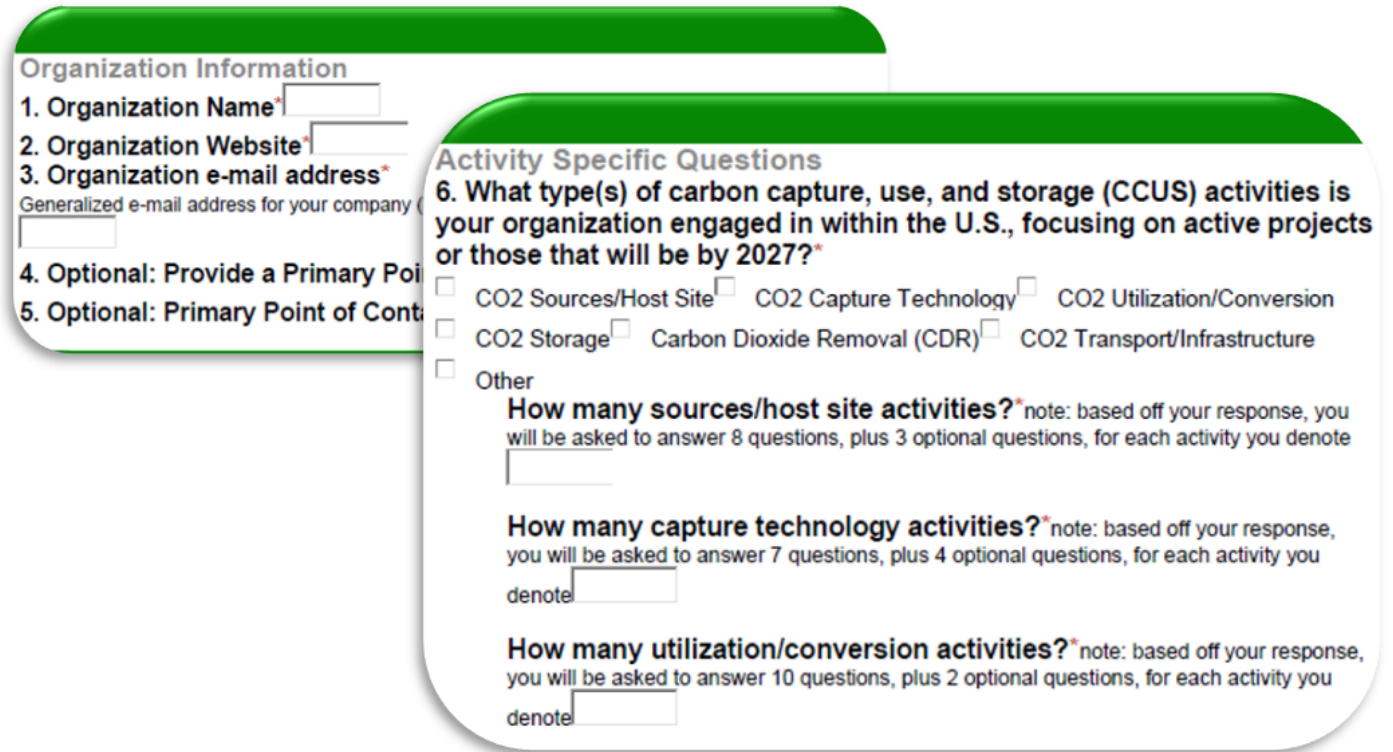


Organization Information

1. Organization Name*
2. Organization Website*
3. Organization e-mail address*
Generalized e-mail address for your company (i.e., info@company.com or about@company.com)
4. Optional: Provide a Primary Point of Contact Name
5. Optional: Primary Point of Contact e-mail address

Carbon Matchmaker (CMM) Self-Identification Form

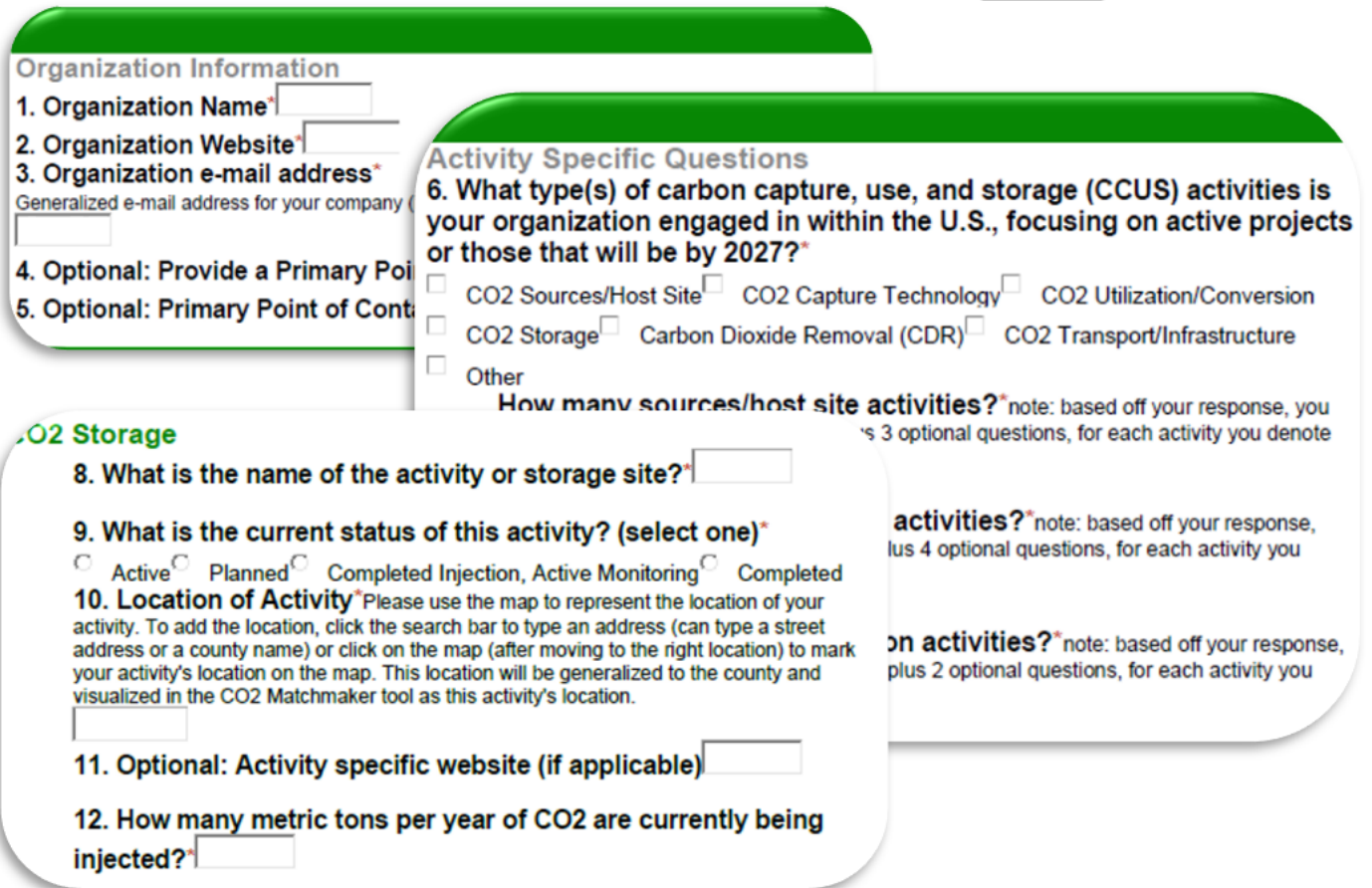
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The screenshot shows two sections of the form. The first section, titled 'Organization Information', includes five numbered questions: 1. Organization Name, 2. Organization Website, 3. Organization e-mail address (with a note for a generalized address), 4. Optional: Provide a Primary Point of Contact, and 5. Optional: Primary Point of Contact. The second section, titled 'Activity Specific Questions', starts with question 6: 'What type(s) of carbon capture, use, and storage (CCUS) activities is your organization engaged in within the U.S., focusing on active projects or those that will be by 2027?'. Below this are checkboxes for CO2 Sources/Host Site, CO2 Capture Technology, CO2 Utilization/Conversion, CO2 Storage, Carbon Dioxide Removal (CDR), and CO2 Transport/Infrastructure, plus an 'Other' option. Three follow-up questions ask for the number of sources/host site, capture technology, and utilization/conversion activities, each with a note on how many questions will be asked based on the response and a text input field for the count.

Carbon Matchmaker (CMM) Self-Identification Form

- The CMM form utilizes Survey123
 - Provides four main sections of questions:
 - Organization Details
 - Activity Specific Questions
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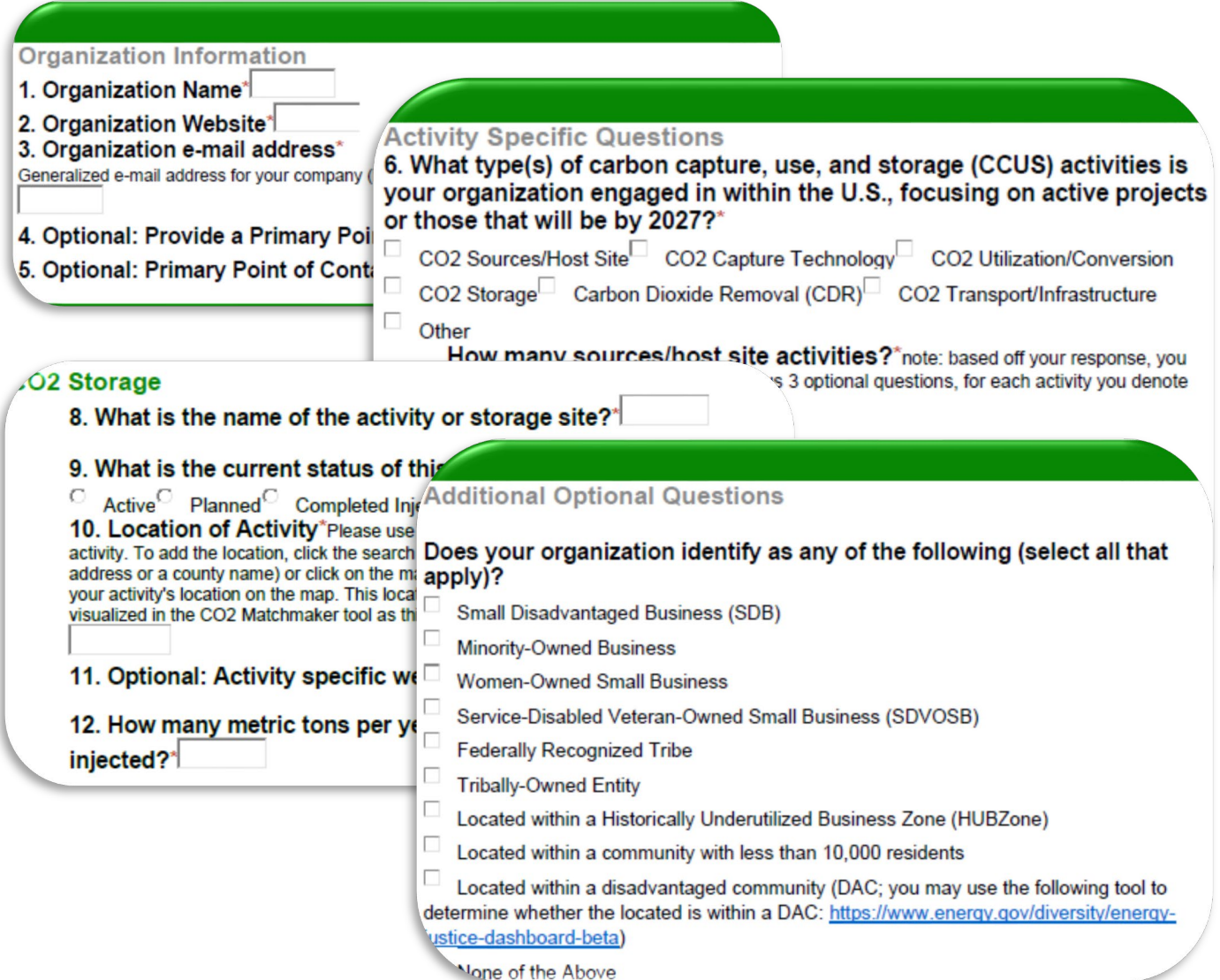


The screenshot shows a digital form with a green header. It is divided into several sections:

- Organization Information**
 - 1. Organization Name* [text input]
 - 2. Organization Website* [text input]
 - 3. Organization e-mail address* [text input]
Generalized e-mail address for your company
 - 4. Optional: Provide a Primary Point of Contact [text input]
 - 5. Optional: Primary Point of Contact [text input]
- Activity Specific Questions**
 - 6. What type(s) of carbon capture, use, and storage (CCUS) activities is your organization engaged in within the U.S., focusing on active projects or those that will be by 2027?*[checkboxes]
 - CO2 Sources/Host Site CO2 Capture Technology CO2 Utilization/Conversion
 - CO2 Storage Carbon Dioxide Removal (CDR) CO2 Transport/Infrastructure
 - Other
 - How many sources/host site activities?* note: based off your response, you have 3 optional questions, for each activity you denote
- CO2 Storage**
 - 8. What is the name of the activity or storage site?* [text input]
 - 9. What is the current status of this activity? (select one)*
 - Active Planned Completed Injection, Active Monitoring Completed
 - 10. Location of Activity* Please use the map to represent the location of your activity. To add the location, click the search bar to type an address (can type a street address or a county name) or click on the map (after moving to the right location) to mark your activity's location on the map. This location will be generalized to the county and visualized in the CO2 Matchmaker tool as this activity's location. [text input]
 - 11. Optional: Activity specific website (if applicable) [text input]
 - 12. How many metric tons per year of CO2 are currently being injected?* [text input]

Carbon Matchmaker (CMM) Self-Identification Form

- The CMM form utilizes Survey123
 - Provides four main sections of questions:
 - Organization Details
 - Activity Specific Questions
 - Activity Details
 - Number of questions based off prior answers
 - Optional Questions
- Once submitted, each record undergoes a QA/QC process by NETL and DOE FECM staff for approval and is uploaded to CMM map



The image displays four overlapping screenshots of the Carbon Matchmaker Self-Identification Form, each with a green header bar. The sections shown are:

- Organization Information:** Contains questions 1 through 5, including Organization Name, Website, e-mail address, and Primary Point of Contact.
- Activity Specific Questions:** Contains question 6, asking about types of carbon capture, use, and storage (CCUS) activities, with checkboxes for CO2 Sources/Host Site, CO2 Capture Technology, CO2 Utilization/Conversion, CO2 Storage, Carbon Dioxide Removal (CDR), CO2 Transport/Infrastructure, and Other.
- CO2 Storage:** Contains questions 8, 9, 10, 11, and 12, covering activity name, status, location, activity-specific weight, and metric tons per year injected.
- Additional Optional Questions:** Contains question 7, asking if the organization identifies as any of the following (select all that apply): Small Disadvantaged Business (SDB), Minority-Owned Business, Women-Owned Small Business, Service-Disabled Veteran-Owned Small Business (SDVOSB), Federally Recognized Tribe, Tribally-Owned Entity, Located within a Historically Underutilized Business Zone (HUBZone), Located within a community with less than 10,000 residents, Located within a disadvantaged community (DAC), and None of the Above.

Carbon Matchmaker (CMM) Utilization

<https://www.energy.gov/fecm/carbon-matchmaker>

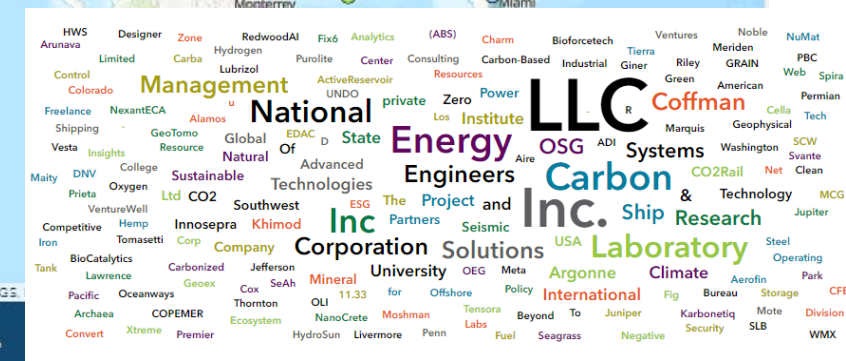
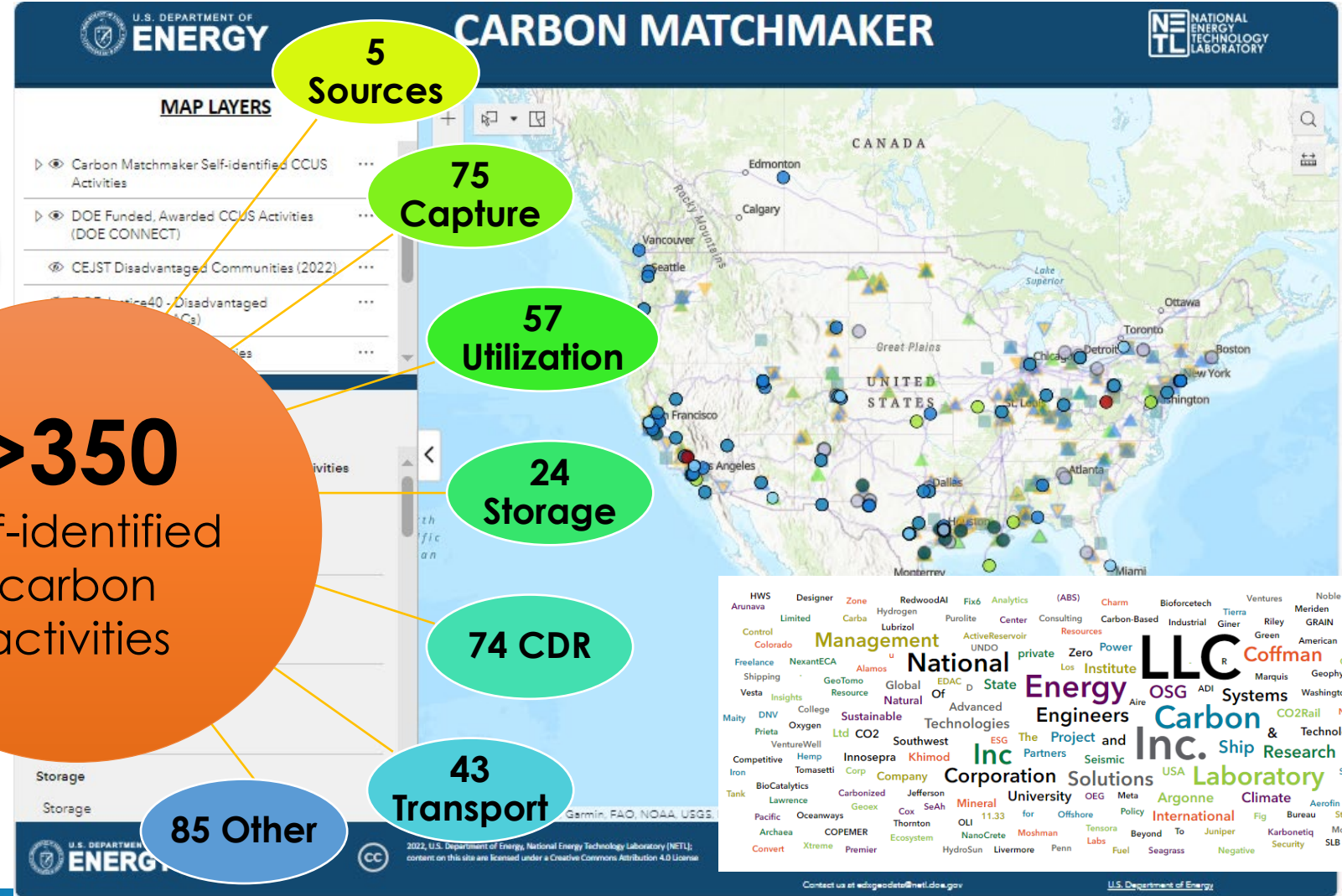
Since CMM's release:

15,300+
webpage
visits

25,000+
map visits

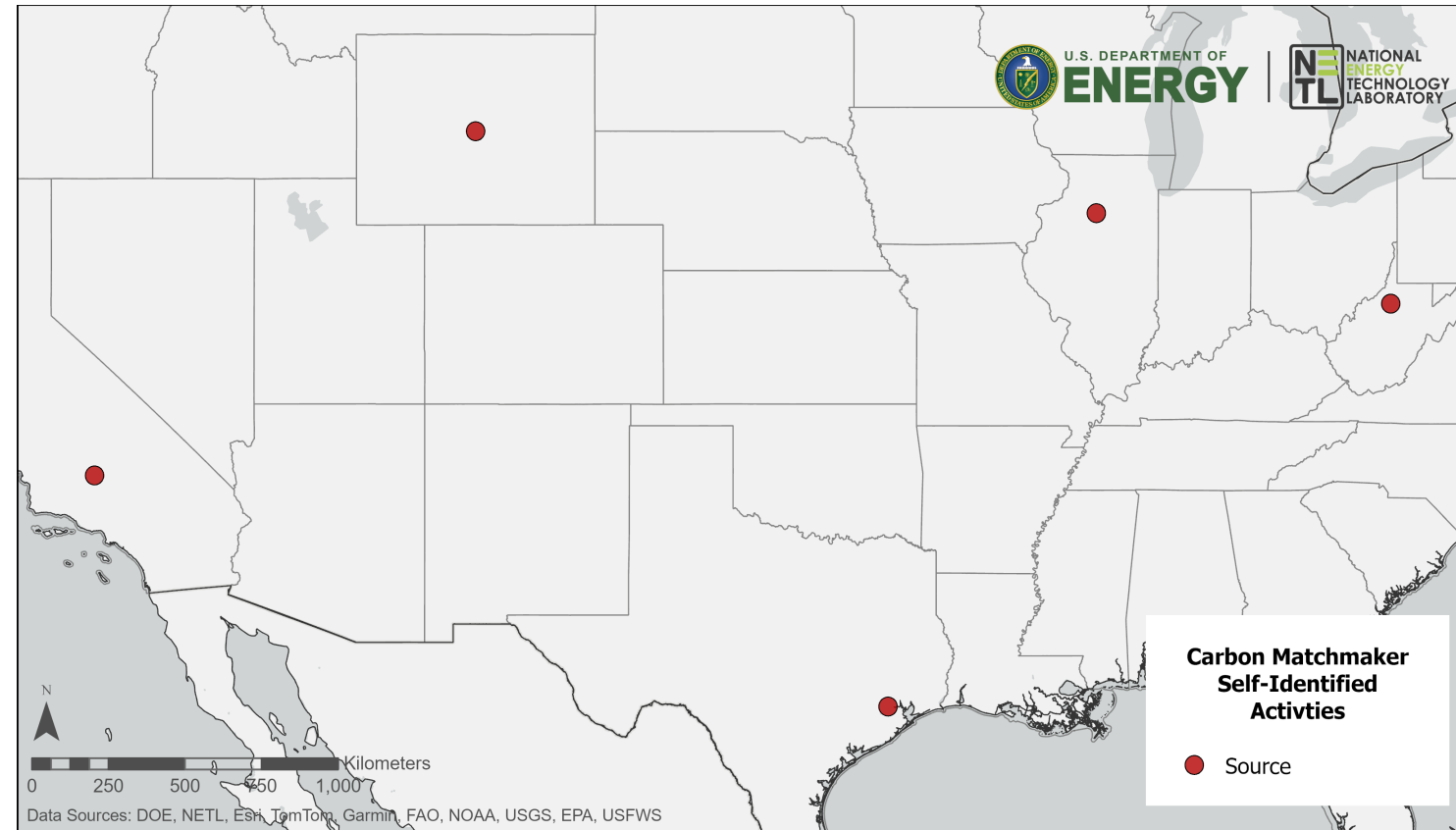
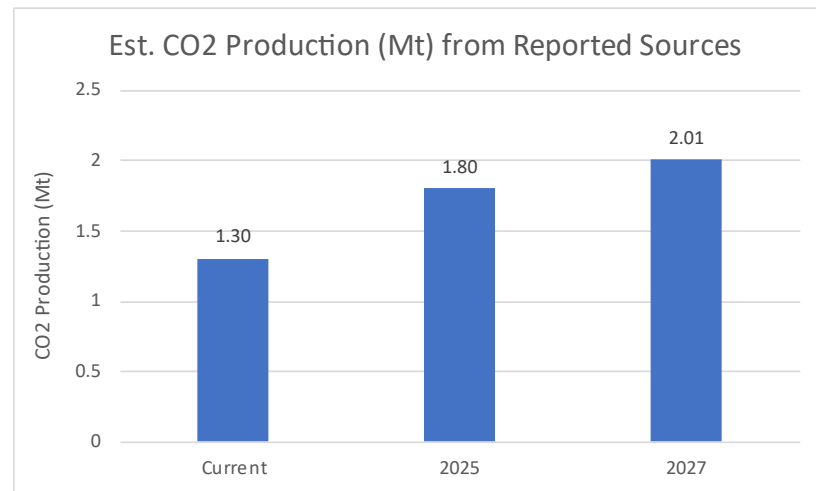
>155
Organizations
represented

>350
Self-identified
carbon
activities



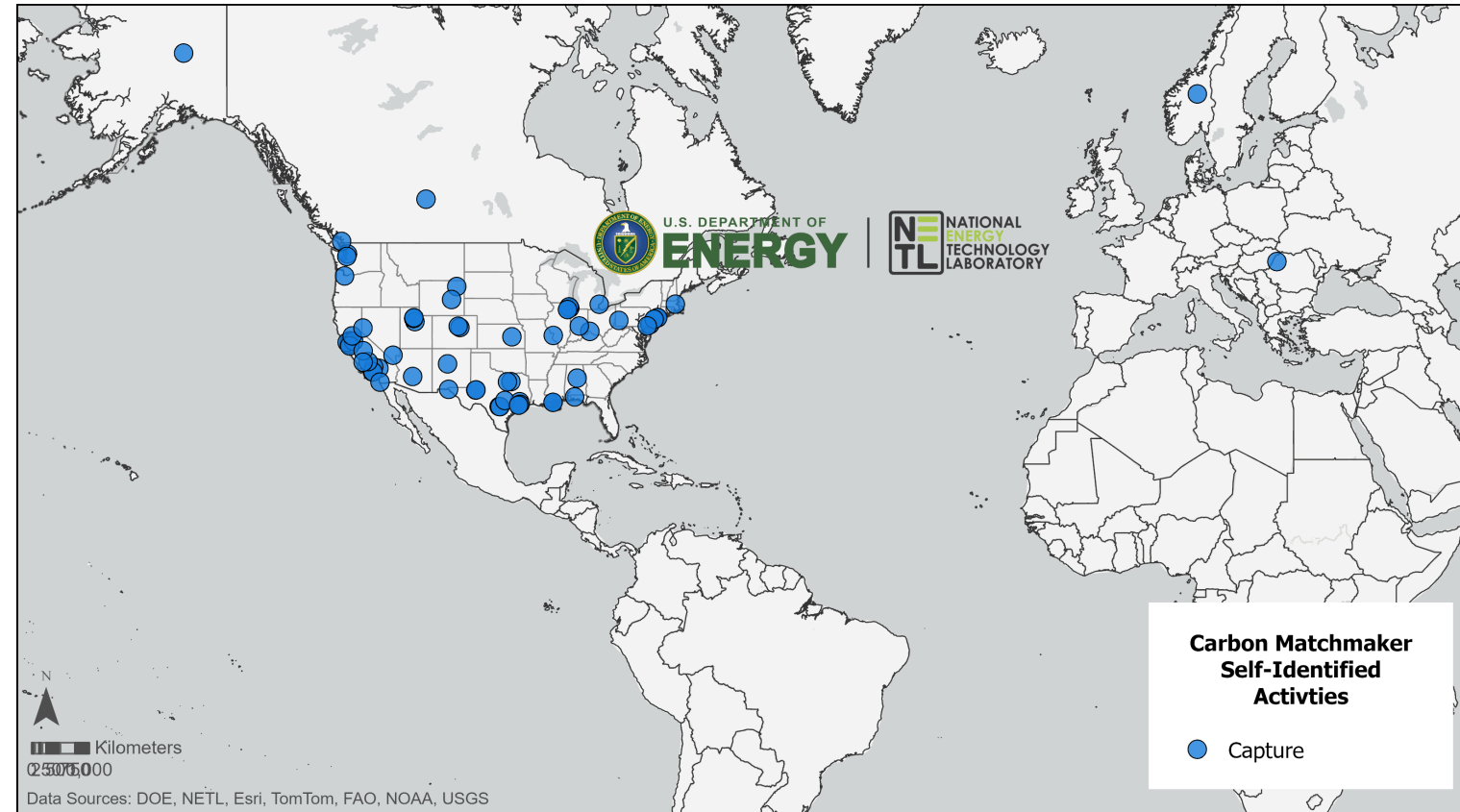
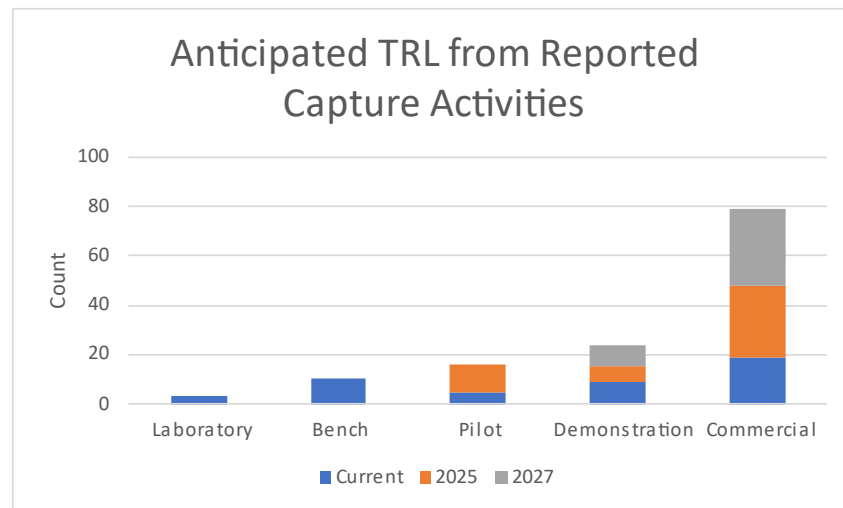
Summary of Self-Identified Sources

- 5 approved, released activities; 2 under review/pending edits
- Five organizations reporting two planned and three active projects
- Primary sources for CO₂ production listed from waste (landfills and woody biomass), power plants, and bioenergy with CCS (BECCS)



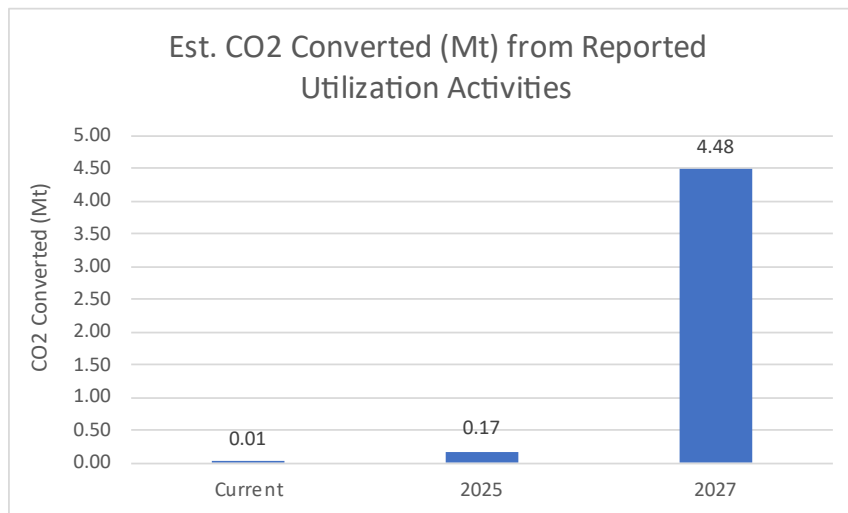
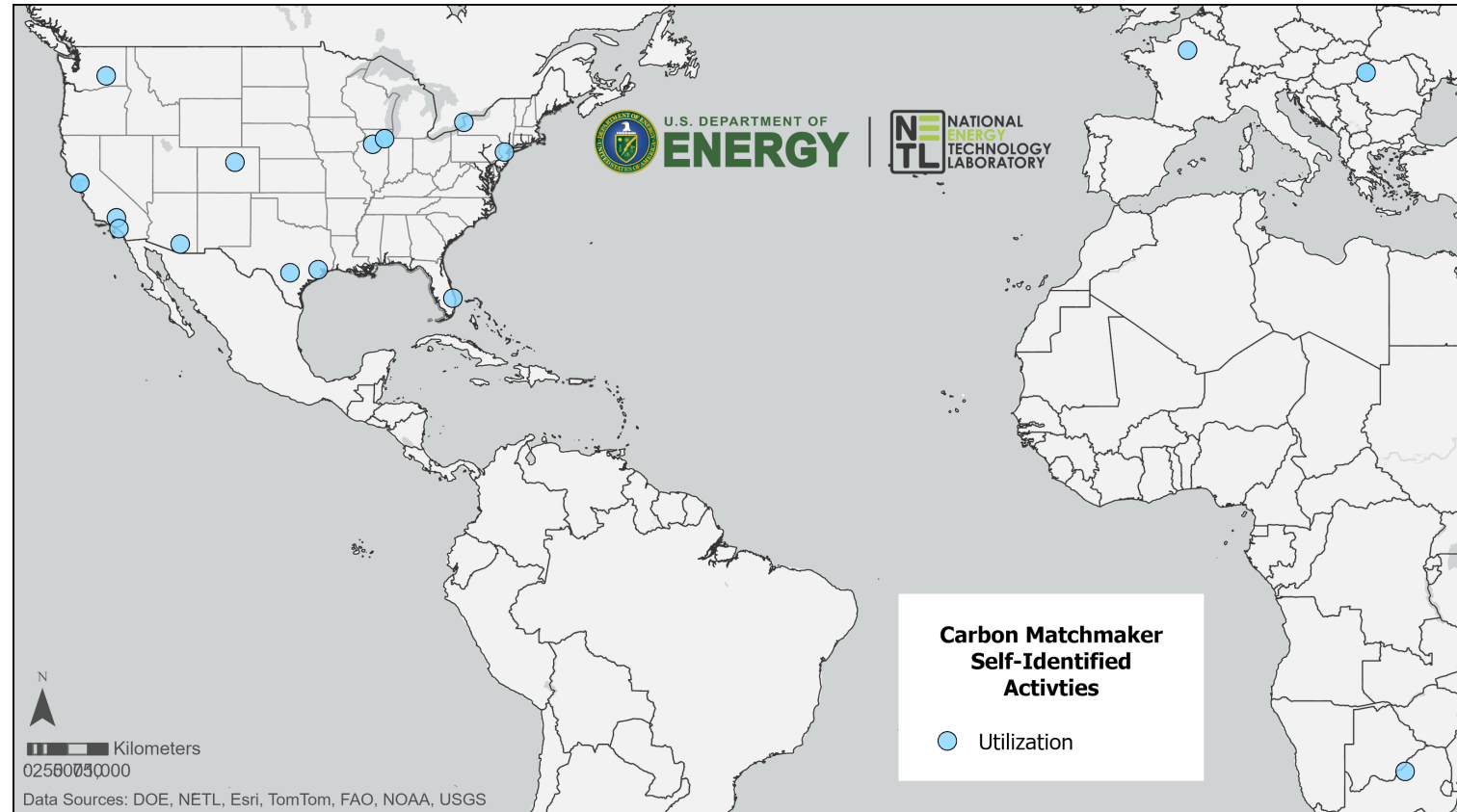
Summary of Self-Identified Capture Activities

- 75 approved, released activities; 27 under review/pending edits
- 29 organizations reporting 41 planned, 29 active projects, and 4 completed projects
- Majority of project report using sorbents and solvents as their technology



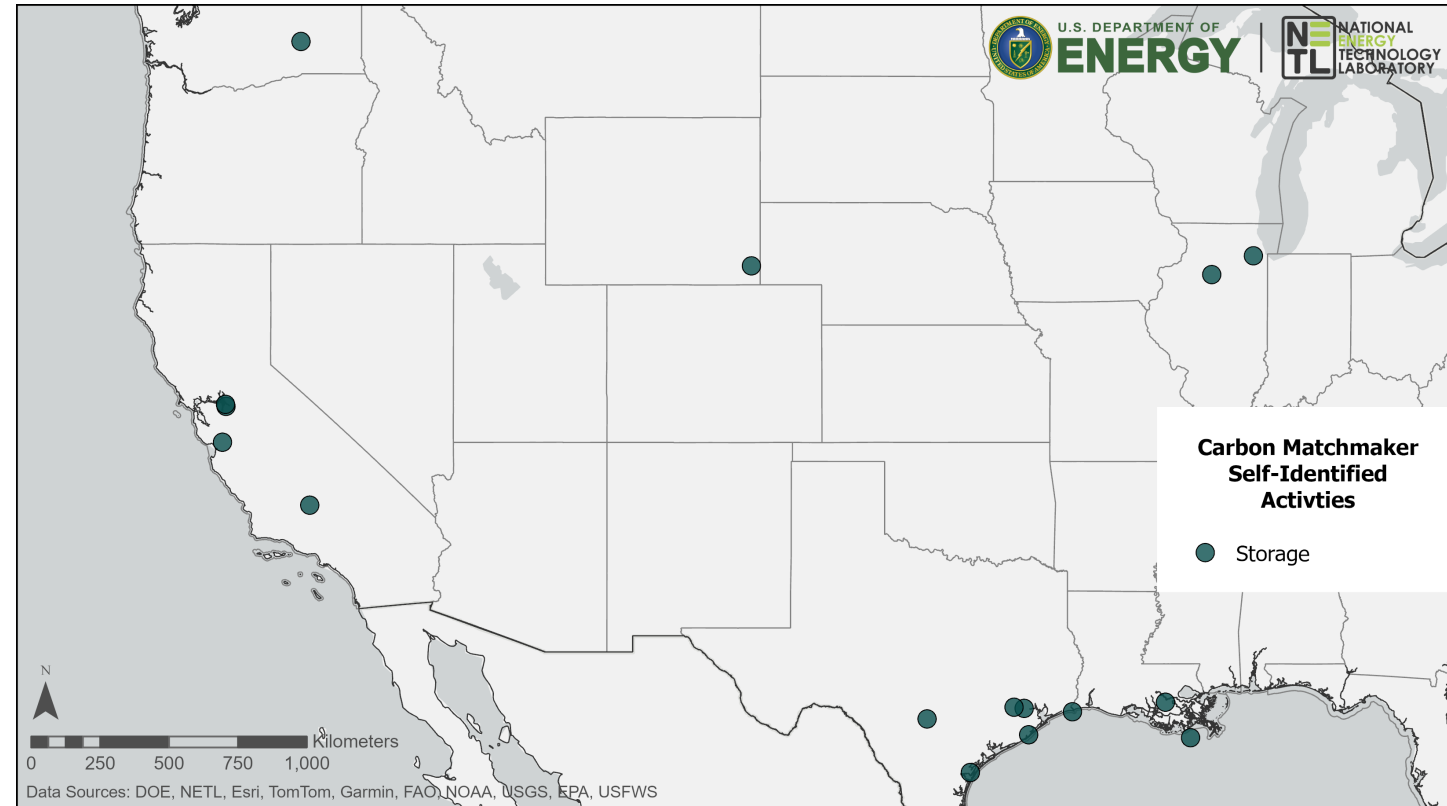
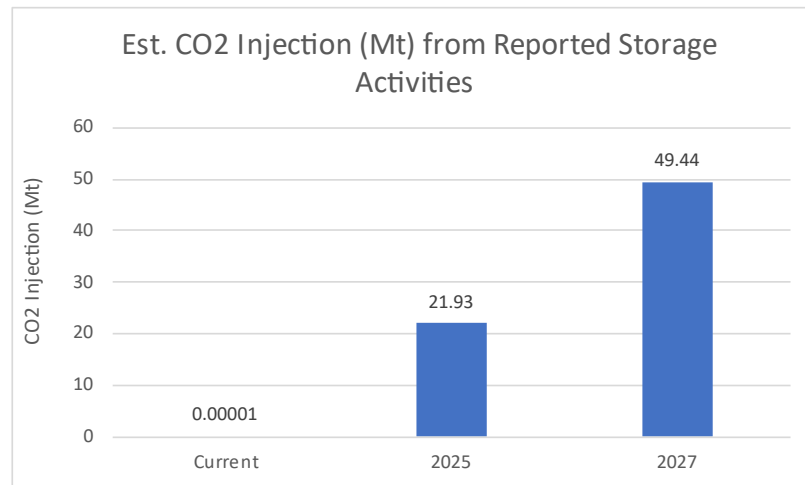
Summary of Self-Identified Utilization Activities

- 17 approved, released activities; 40 under review/pending edits
- 13 organizations reporting 11 planned and 10 active projects
- 16 projects report utilizing catalytic conversion; 2 mineralization; and 3 with biological uptake as their conversion pathway



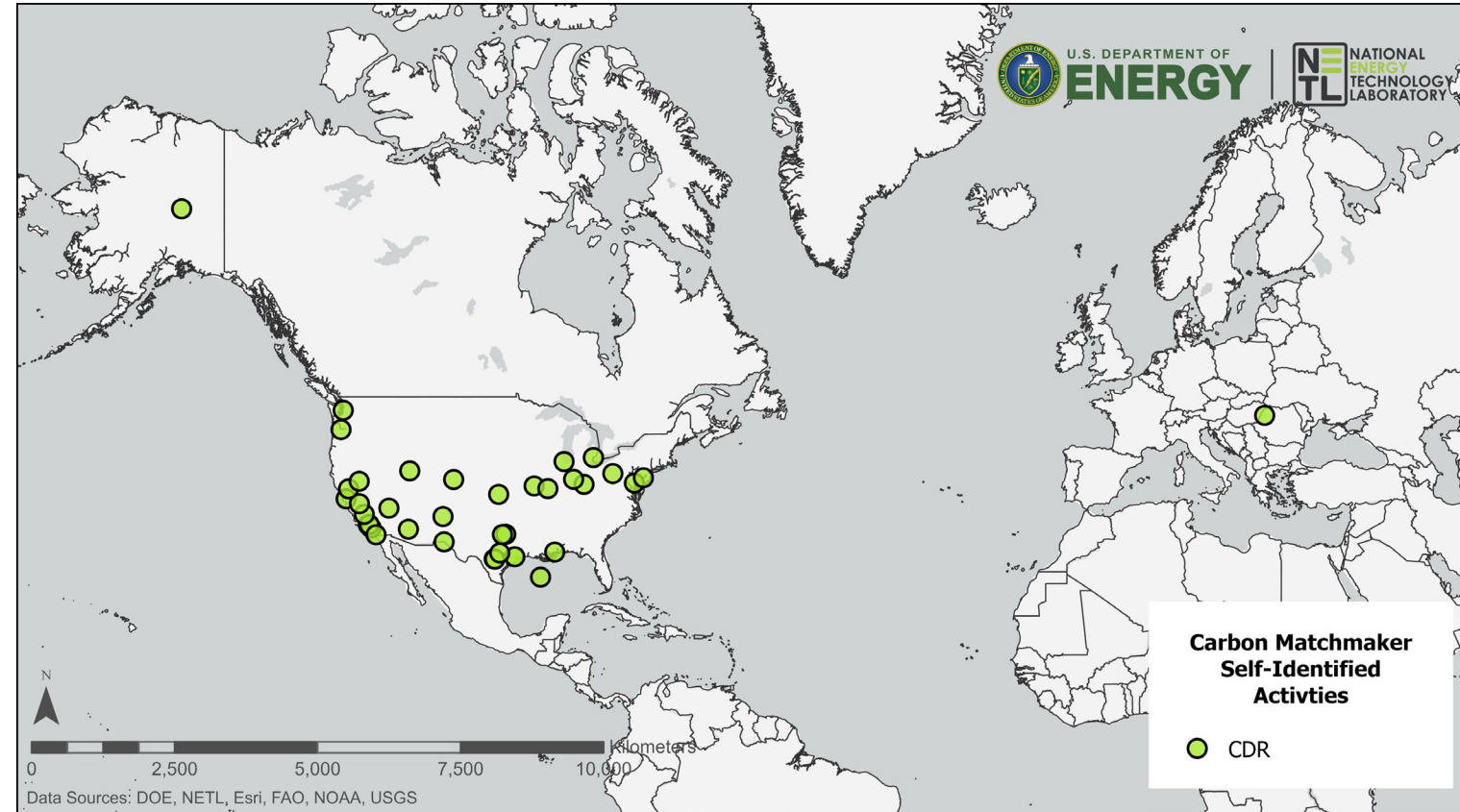
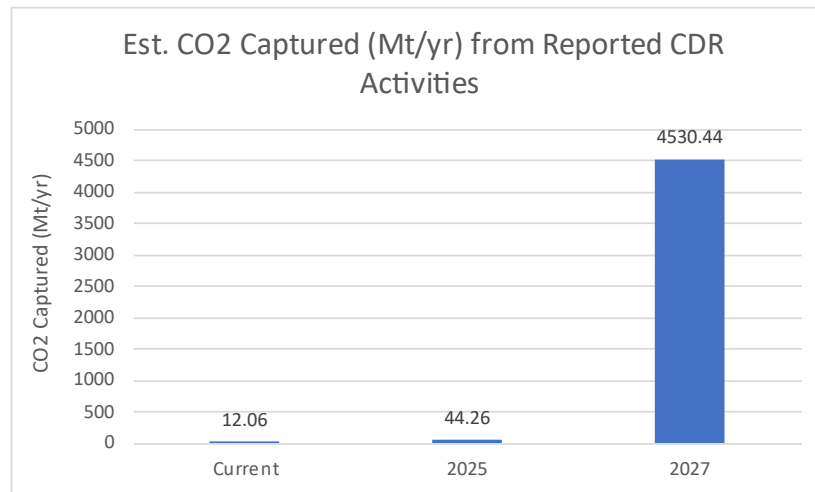
Summary of Self-Identified Storage Activities

- 18 approved, released activities; 6 under review/pending edits
- 11 organizations reporting 4 active, 10 planned, 1 completed injection and active monitoring, and 1 completed activities
- Details show an average of 17.6 years of planned injection and 22.5 years of planned post-injection site care (PISC) across the 18 projects reported



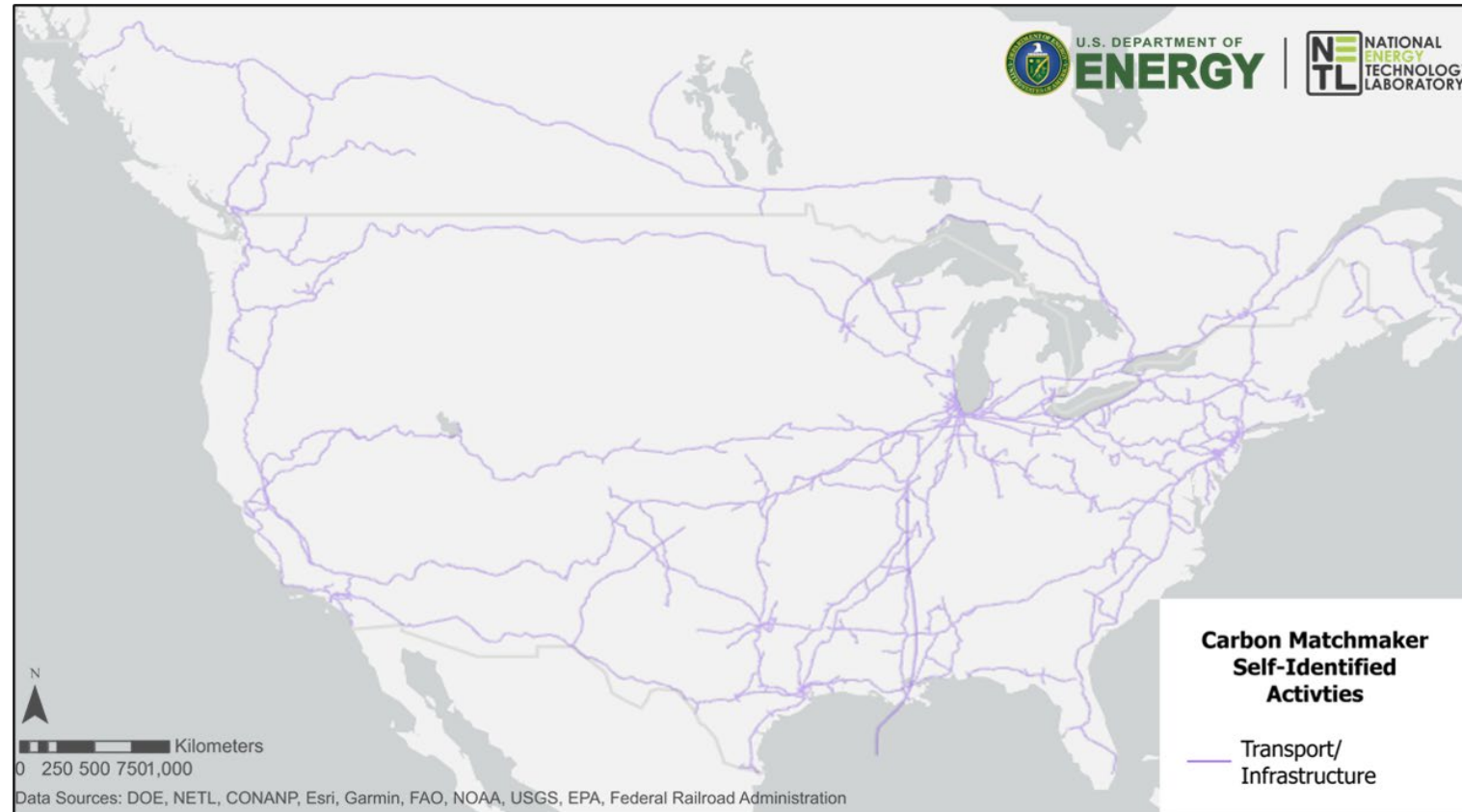
Summary of Self-Identified CDR Activities

- 63 approved, released activities; 11 under review/pending edits
- 19 organizations reporting 33 planned, 14 active, and 2 completed projects
- 10 projects report they will use Direct Air Capture with Storage (DACs); 5 Biomass Carbon Removal and Storage (BiCRS); 2 Ocean-based CDR; and 4 other approaches



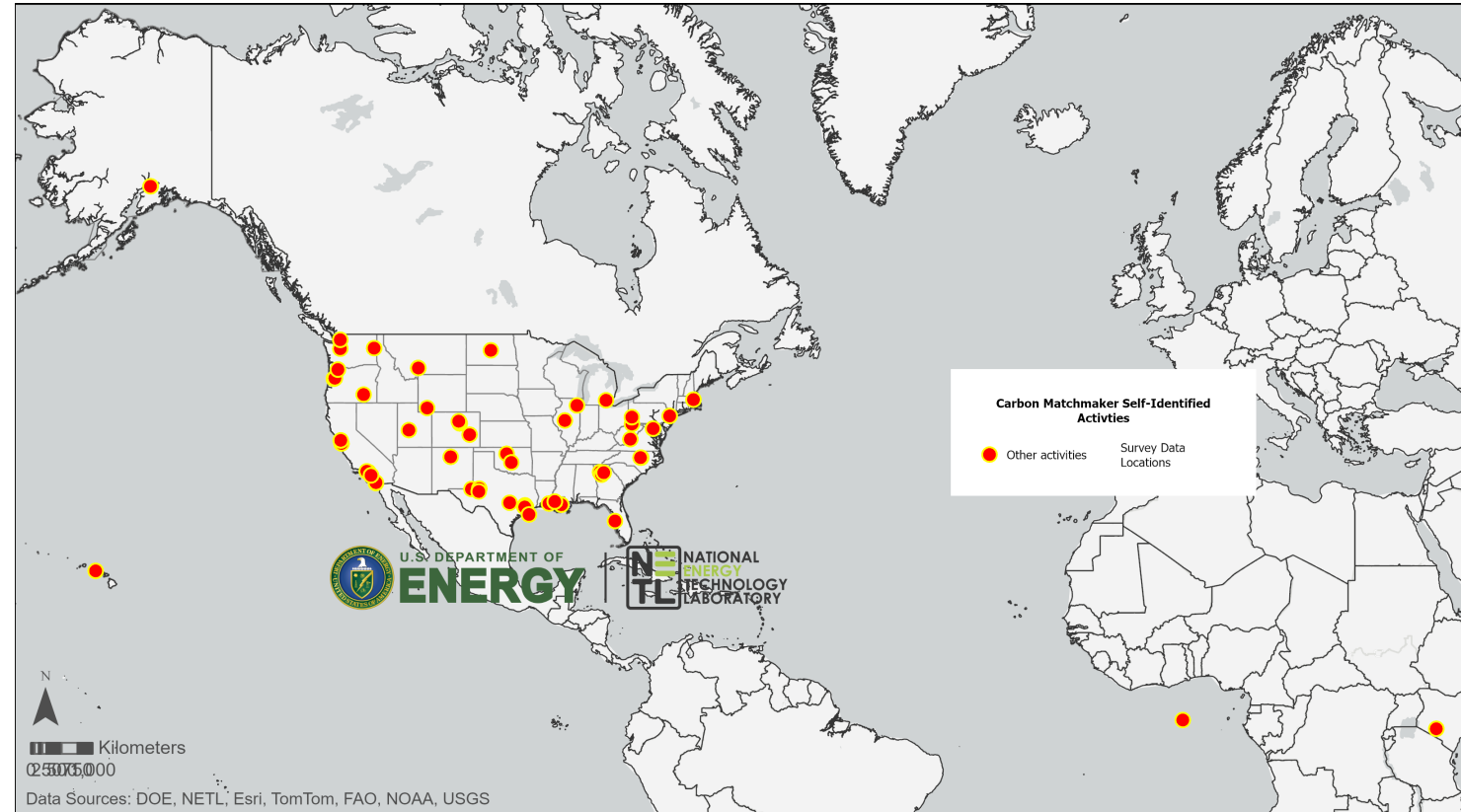
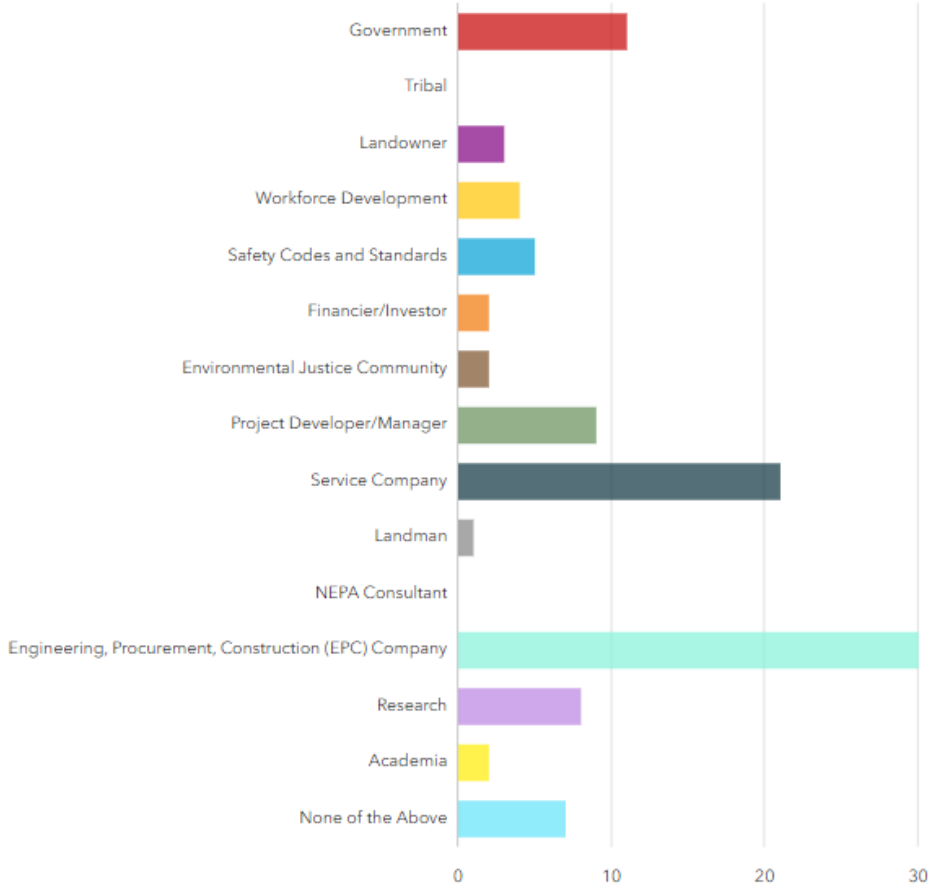
Summary of Self-Identified Transport Activities

- 10 approved, released activities; 33 under review/pending edits
- From 6 organizations, there are 7 planned and 3 active projects
- Include projects with Vessels, Rail, and Pipelines as the listed transport mode
- Reported CO₂ transport capacity totaling 910 Mt/year

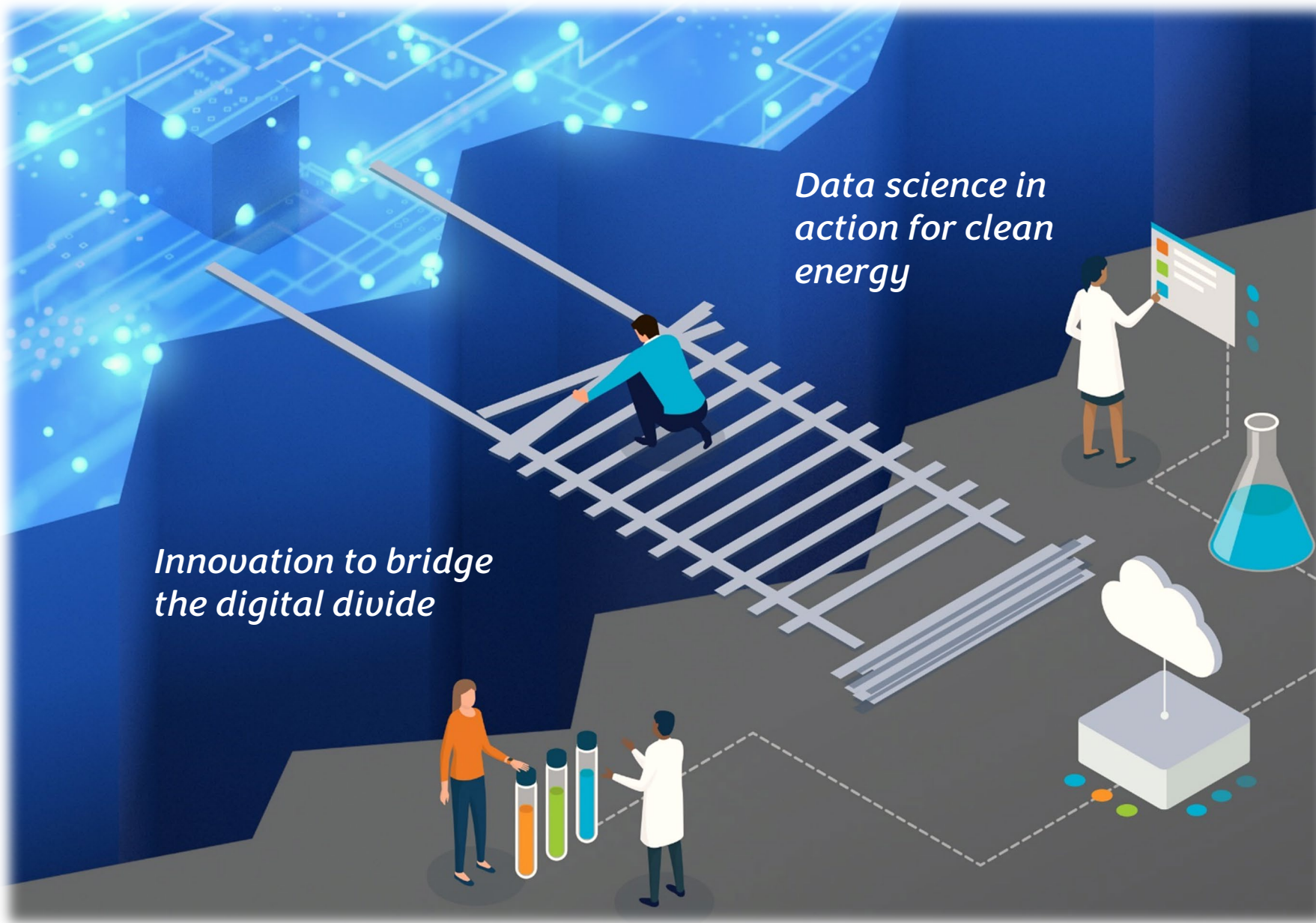


Summary of Self-Identified Other Activities

- 74 approved activities; 11 under review/pending edits



- Enhancements and Application Updates
 - Provide data-driven insights within the application
 - Enhance visualizations and symbology
 - Representation for wide-spread activities
 - Leverage feature services and data caches to reduce load times
- Further enhance the QA/QC process
 - Move away from static excel files for individual review to a more dynamic, shared reviewer approach
 - Generate scripts to automate upload of new records to public CMM



Leveraging CMM to benefit stakeholders & decision makers – spotlighting on-going activities and helping demonstrate success

the stats

54

RIC PRESENTATIONS

22

POSTERS

30

TOOL DEMOS

MONDAY

Presentations
(10:30AM - 5:25PM)

- 16 disCO2ver presentations



TUESDAY

Presentations
(10:30AM - 5:45PM)

- 17 SMART presentations
- 2 disCO2ver presentations
- 2 Geographic focus/tool presentations

Posters

(5:45PM - 7:45PM)

- 18 CTS Posters
- 2 PSCC Posters
- 1 CDR Poster
- 1 MLEF Poster

Tool Demos

(5:45PM - 7:45PM)

- 30 Tool Demos
 - SMART
 - NRAP
 - EDX
 - EDX4CCS

WEDNESDAY

Presentations
(2:10PM - 4:30PM)

- 3 transport, research, development, and demonstration activities presentations
- 1 transport modeling presentation
- 1 secure storage (basalts/mafic) presentation



THURSDAY

Presentations
(10:30AM - 5:20PM)

- 8 NRAP presentations
- 2 NETL RIC Presentations
- 2 Offshore presentations



<https://edx.netl.doe.gov/disco2ver>

NETL RESOURCES

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