

# CONNECT Toolkit: Carbon Management Projects Database and Explorer



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Aug. 6, 2024***

# Disclaimer

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# Carbon Management Projects (CONNECT) Toolkit

## Value Proposition

**Challenge:** Lack of a centralized repository of authoritative information detailing government investments in technologies spanning the carbon management value chain; lack of means to view these investments with zoom-in/out capabilities and in policy, social, regulatory, infrastructural and natural resource contexts

### Value:

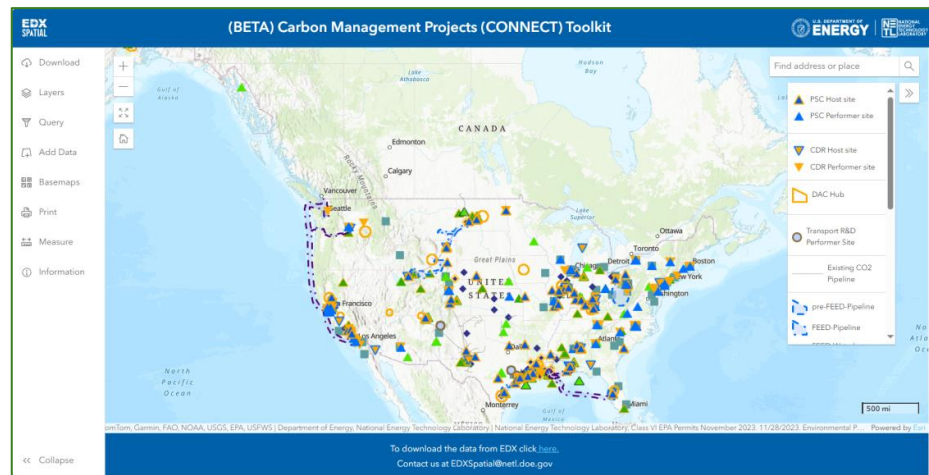
- Provide the public with a single-point access to integrated and regularly curated information on federally funded carbon management research, development, and demonstration (RD&D) projects in the United States
- Enable users to drill down into project details, generate national/regional/county-level maps, and perform other analytics
- Serve as a hub of public information on these projects and related federal initiatives, Class VI permits/applications, existing infrastructure, point-source emissions (EPA's FLIGHT), natural resources, communities, and protected lands

### Objective:

- Build and automate the update of a comprehensive carbon management project database in EDX with authoritative information
- Develop intuitive and interactive dashboards to accelerate assessment of federal investment in carbon management technologies; inspire data-driven insights

### Ultimate Product:

- Database for filtering and download on EDX
- Web application for visualizing/exploring carbon management RD&D activities in user desired context
- Tutorial package for better understanding of technology development status, RD&D opportunities against environmental and social justice factors, etc.





# Existing Web-Based Interactive/Static Mapping Tools

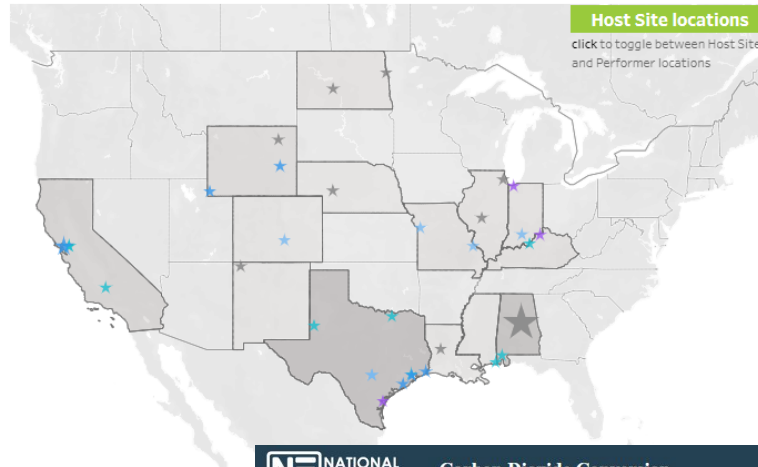


## CARBON CAPTURE Interactive Project Map

This interactive map  
shows active and inactive  
NETL's Point Source  
Carbon Dioxide Re

Data as of 4/2/2024

RESET the dashboard by selecting the REVERT button at the bottom right of the dashboard, or by refreshing the browser window



© 2024 Mapbox © OpenStreetMap

Project Status  
(All)

Ending Scale  
(All)



## CARBON TRANSPORT & STORAGE Interactive Project Map



-Hover over bar graphs and map to for additional information.

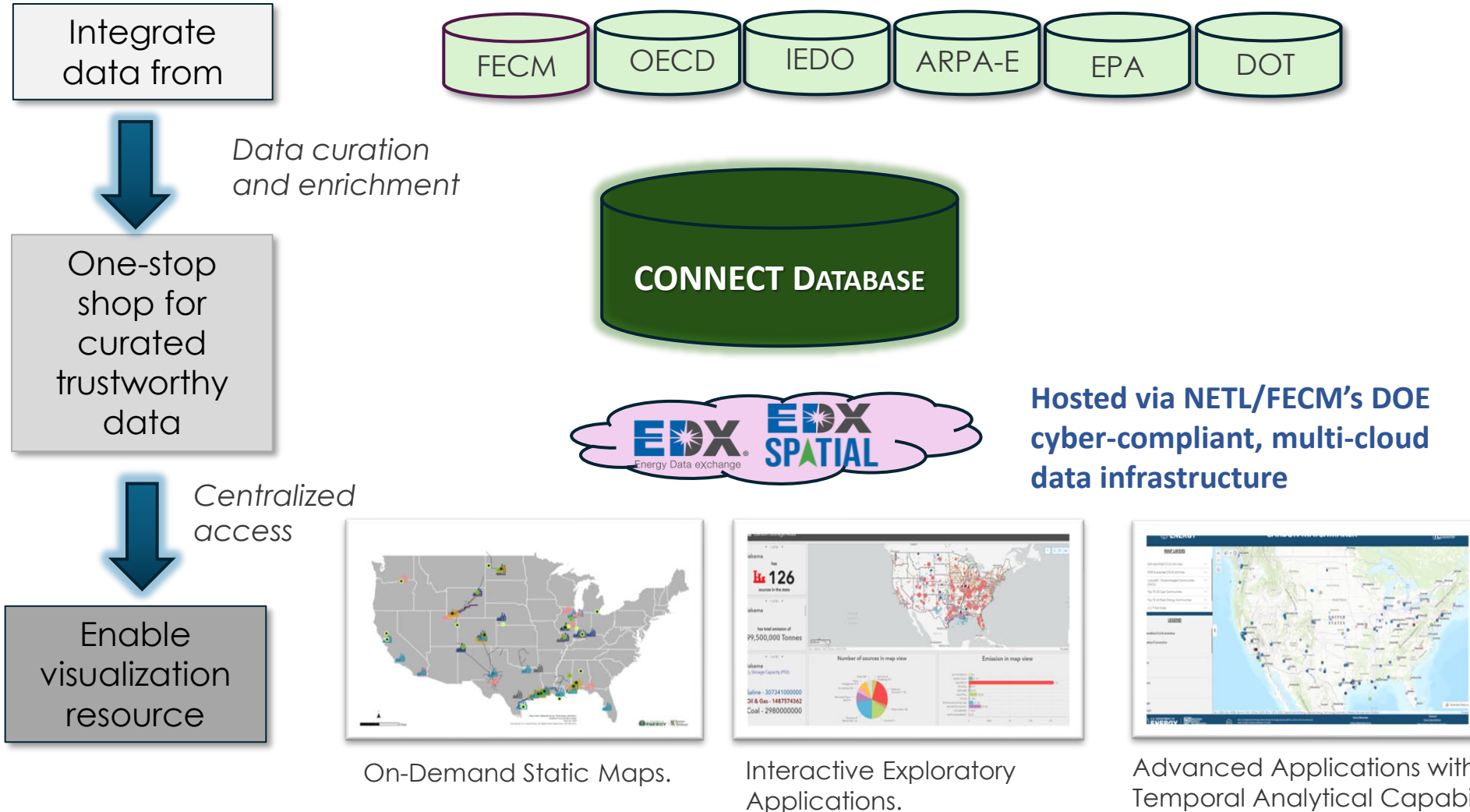
Technology Area (All)	Location Type (All)
Key Technology (All)	Applicant Type (All)

## OCED SELECTIONS & AWARDS

Accurate as of 3/25/2024



# CONNECT Toolkit- Database and Explorer



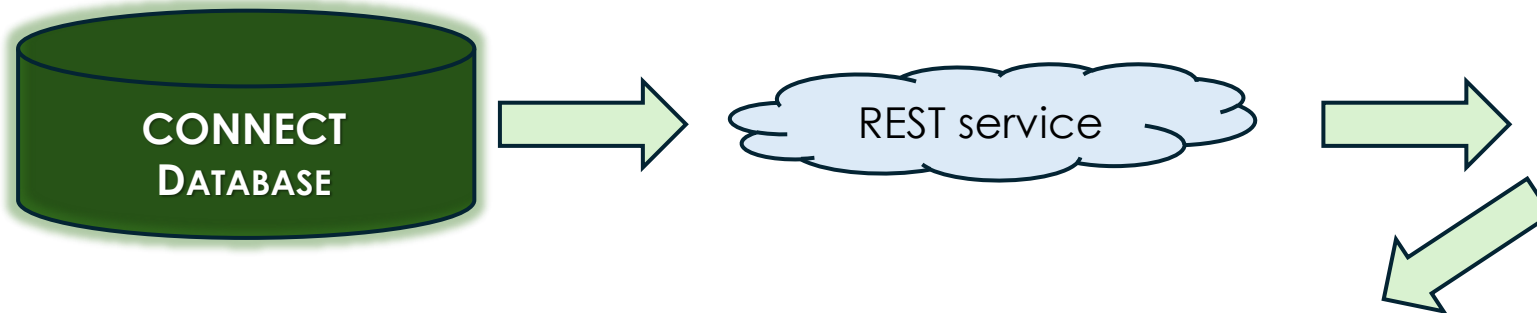
## BENEFITS:

- Saves time and money for collecting desired information from multiple sources
- Access to authoritative data and links to more details
- Quick customized maps for presentations and reports
- Interactive applications for advanced analysis
- Evaluate in relation to other federal initiatives, environmental justice-social justice (EJ-SJ), etc.

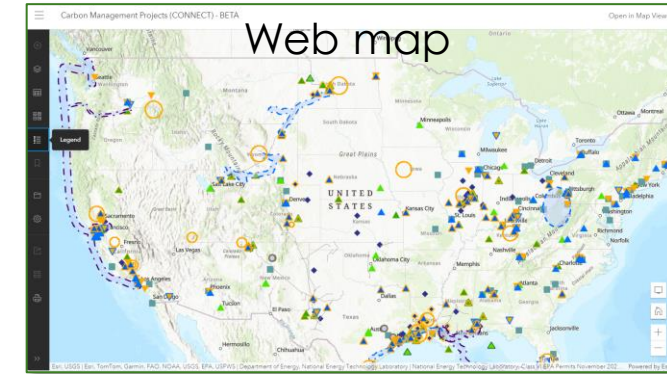
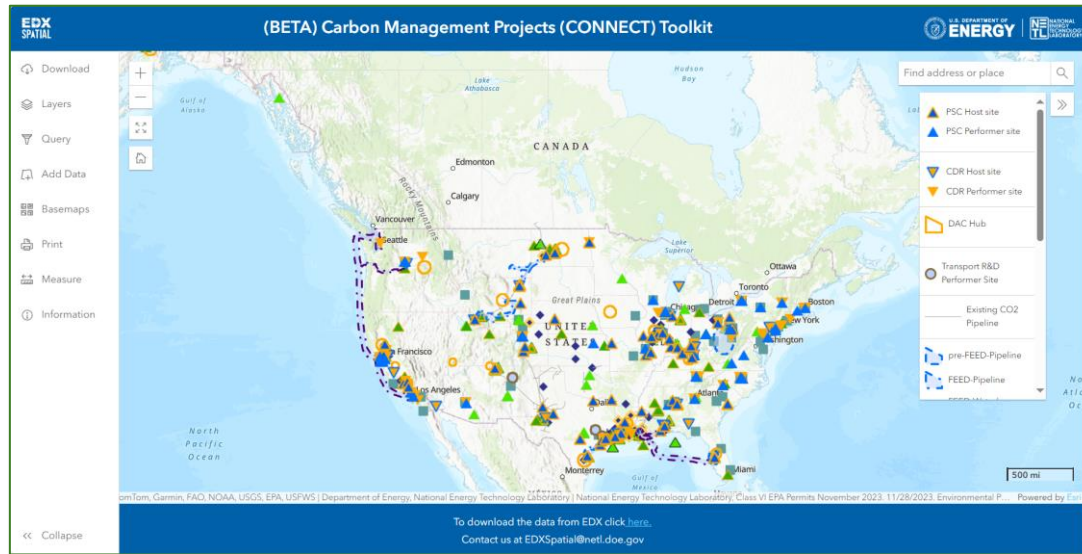
- Database template for key federally funded carbon management projects
- Major categories in database:
  - Technical Details
    - Title, technology area, technology application sector, project ending scale
    - Quantity of CO<sub>2</sub> captured/transported/stored, CO<sub>2</sub> offtake, pipeline length, project start and completion date
  - Organizations and Locations
    - Prime performer and project host site names and locations
  - Funding
    - Program office, funding source, award status, total project cost, federal and performer share
  - Project Description

# Workflow

## Database to CONNECT Explorer



CONNECT  
Explorer



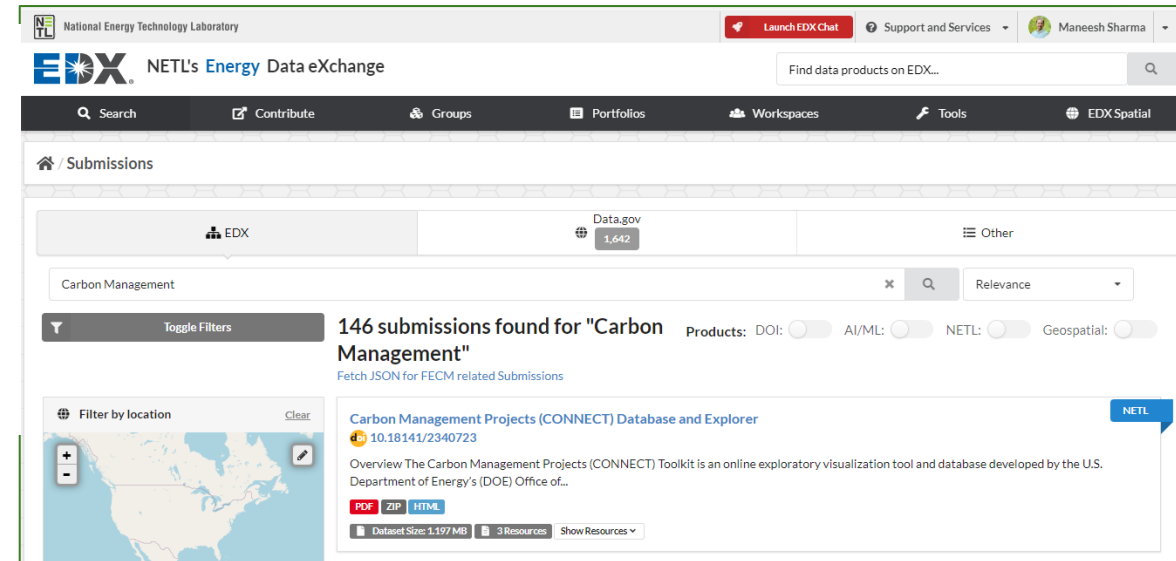
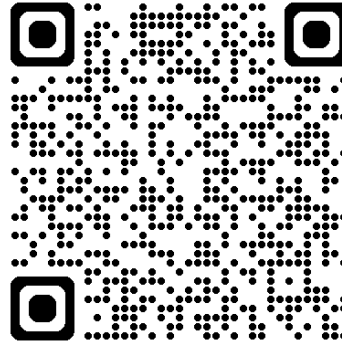
- Web application developed on ESRI platform
- Custom web application using Calcite programming language
  - Allows more flexibility for custom web application
  - Custom tool development
- Allows for consumption of REST services in other applications based on their needs



# CONNECT Toolkit Access

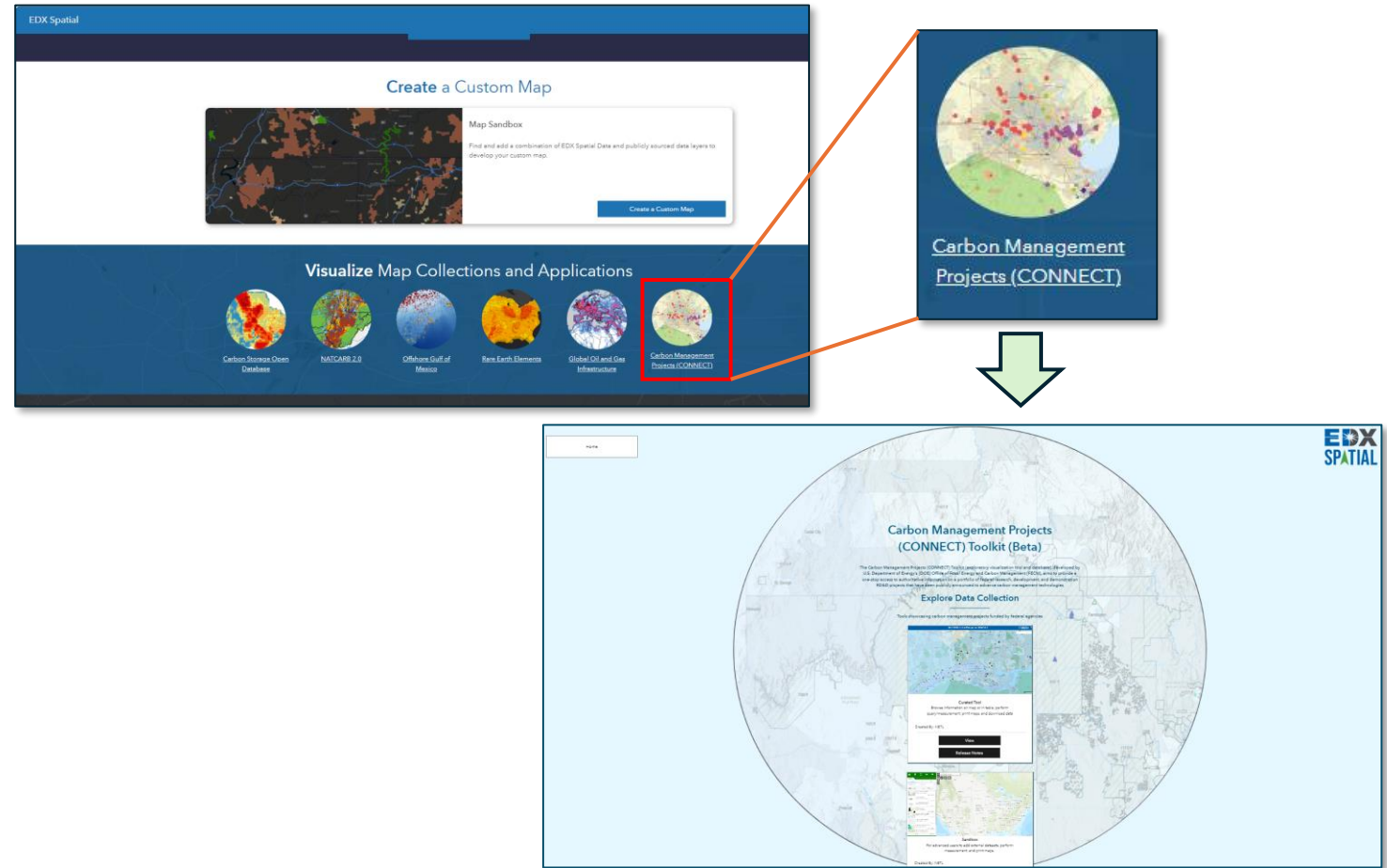
## Available on EDX

- EDX- Access CONNECT toolkit from EDX landing page
  - Search key word – “Carbon Management” or “CONNECT”
  - [Carbon Management Projects \(CONNECT\) Database and Explorer - Submissions - EDX \(doe.gov\)](#)
- EDX landing page contains
  - Project information
  - Release notes
  - CONNECT Database
    - Geodatabase
    - Csv files
  - CONNECT Explorer
    - Link directs user to EDX Spatial landing page

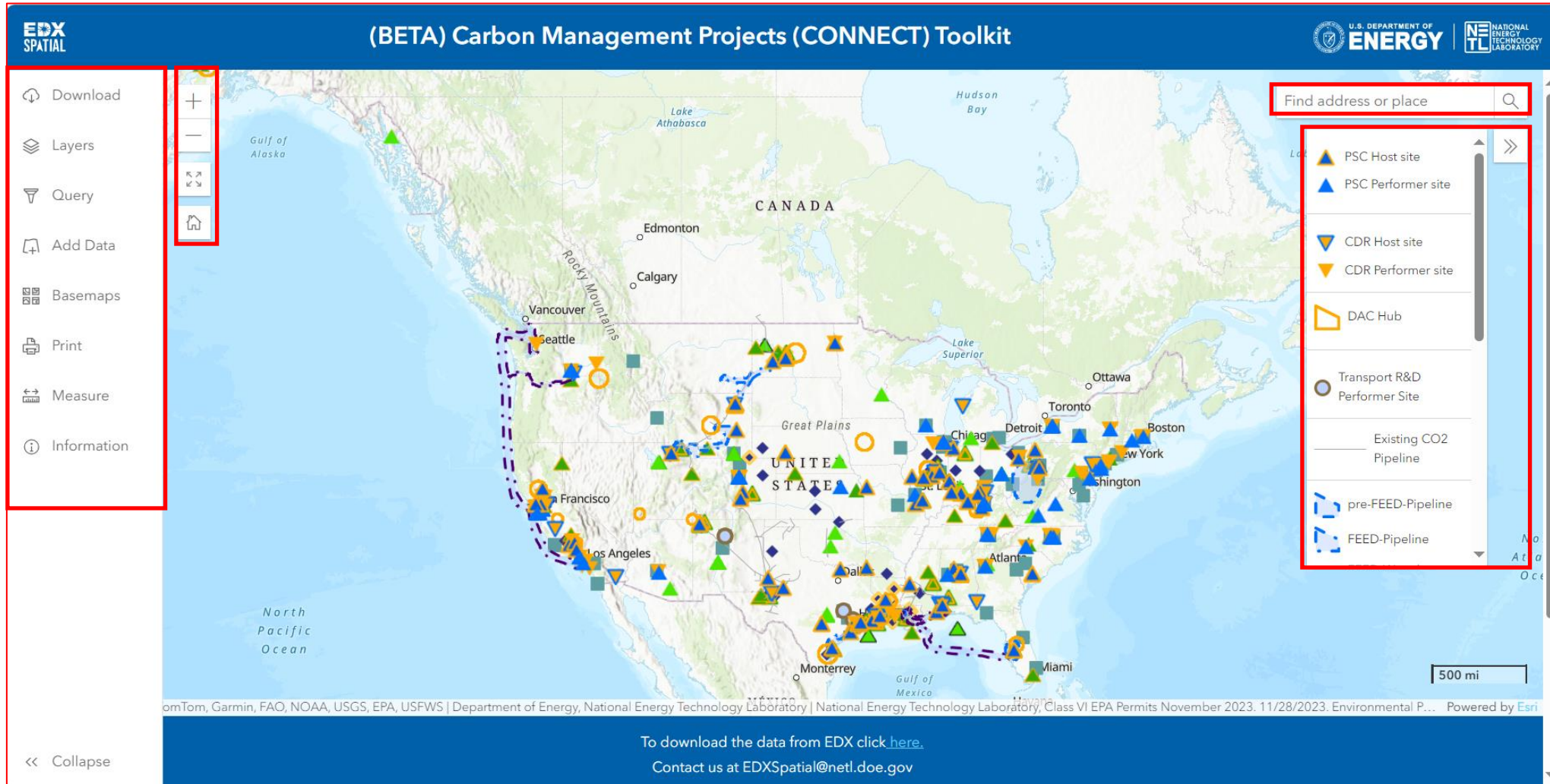


# CONNECT Explorer

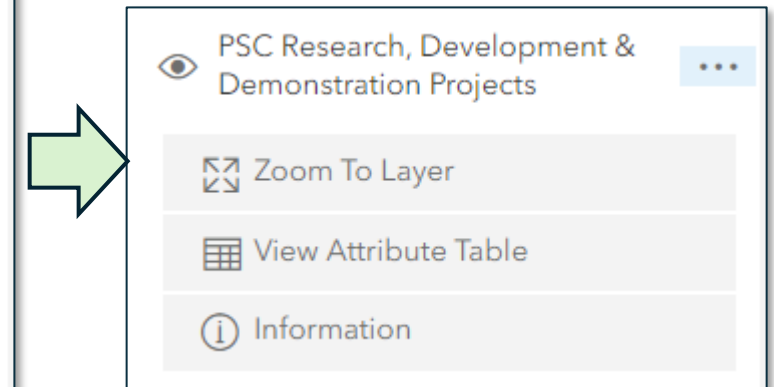
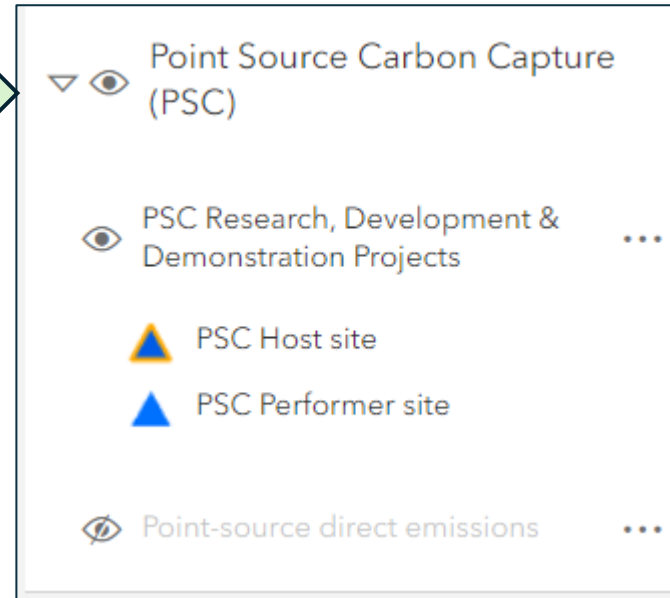
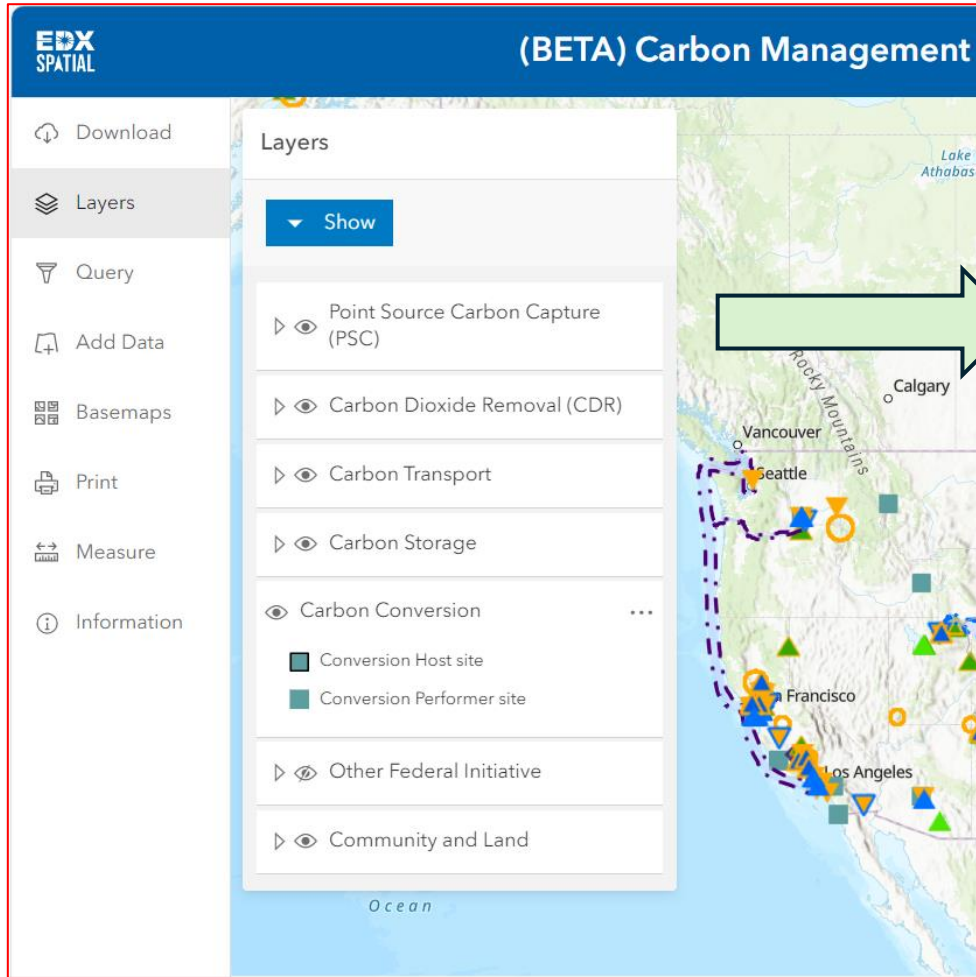
- EDX Spatial
  - Hosted on EDX Spatial ([edxspatial.doe.gov](http://edxspatial.doe.gov))
  - Landing page contains
    - CONNECT explorer
    - Training videos
    - Link to EDX



# CONNECT Toolkit Explorer



# CONNECT Toolkit Explorer





# CONNECT Toolkit Explorer

## Query Tool

**EDX SPATIAL** (BETA) Carbon Management Projects (CONNECT) Toolkit

**Query**

Find projects that meet specific criteria by filtering specific layers.

Filter for desired content

Layer  Attribute

2. Set value

Operator  Value

Query

**Query**

Find projects that meet specific criteria by filtering specific layers.

1. Choose data layer

PSC Research, Development & Demonstration Projects  Award Status

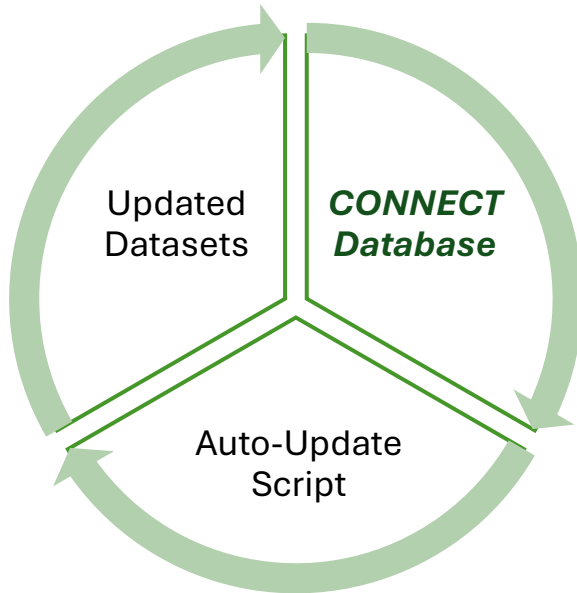
2. Set value

is  Awarded

Query

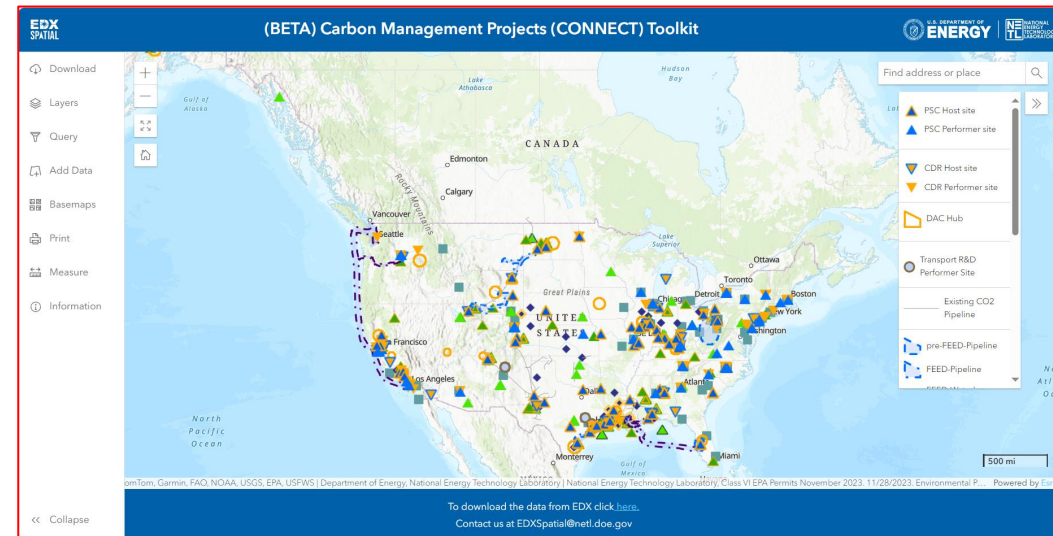
# What's Next

## Script- Auto Update Database



Auto-Update Script  
for various data sources.

## CONNECT Explorer



Update Explorer - Advanced functionality;  
including support for advanced data queries  
and output of stylized reports.



Integrate data and dashboard  
into EDX DisCO<sub>2</sub>ver Platform for  
user access.

# Demo Session



## DEMO & POSTER SESSION

TUESDAY, AUGUST 6, 2024

5:45 PM - 7:45PM

BALLROOM GALLERY

CONNECT Toolkit Carbon Management Projects Database and Explorer



CARBON TRANSPORT & STORAGE DATA AND  
INNOVATION TO BRIDGE THE DIGITAL DIVIDE



U.S. DEPARTMENT OF  
**ENERGY**

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# The Office of Fossil Energy and Carbon Management

## Achieving Net-Zero Emissions



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