CUSP

Data collection and synthesis, data analysis, modeling, and scenario development to support more rapid implementation of commercial-scale CCUS

Data collection feeds into thee main pillars of the CCUS landscape; Capture, Transport, and Storage. With support from government, industry, academic, and public entities, a dynamic, up to date/quasi-real time database can be created. This will allow many diverse end users to access and interpret the data for a myriad of final uses, such as policy making for CCUS projects, commercial and industrial projects, etc. The database will contain all necessary data to do both a high level scoping study for multiple possible CCUS site to more site specific, detailed economic analysis on a single or select few top tier site.

# Data workflow

Partners will take an initial inventory of the data that is available in the short term and what will be anticipated to be available in the long term. They will provide the data team lead with this information as they begin to collect the initial, year 1 data. The data inventory will help guide the database design and help focus initial and long term data gathering goals.

Next the partners will submit the short term data as they gather it to a temporary Dropbox/Google Dive location. The goal is to have a first pass with SimCCS on the top 5-10 sites from each state to narrow potential sites to 1-2 top tier sites that a much more detailed analysis can be conducted.

1. Short-term
   1. Data type inventory list [SimCCS and SCO2T data needs]
      1. Preliminary data needed for first pass site selection (n<5)
         1. ROWs
         2. CO2 storage capacity at top sites (NATCARB±Other)
         3. CO2 point sources (emissions, capture potential)
         4. Surface constraints (land owners, sensitive areas, etc)
   2. Start gathering data
2. Long-term
   1. Data type inventory list [SimCCS and SCO2T data needs]
      1. Preliminary data needed for first pass site selection
         1. ROWs
         2. Geology on tops sites
         3. CO2 point sources (emissions, potential, costs, etc)
         4. Surface constraints (land owners, sensitive areas, etc)
      2. A list of data types that CUSP needs
      3. Partners check off what they have and its formats
   2. Start gathering data

Need to decide where we house the data in the short term while we build the database.

* OSDU/Delphi/Homegrown
* Initial data for first pass on site evaluation could be housed in dropbox/google drive

# Data Types

End user has access to storage formations and rankings of those formations, storage capacity, etc.. for use in policy decisions.

How is the data going to be developed? Beyond, collection and collation. It will need to be

Three main sectors, Storage, Source, Transport

1. Structural data
   1. Basin name and extent
   2. Fields/Units names and extents
   3. Fault maps/polygons/models
   4. Geology maps
   5. Stratigraphic columns
   6. Isopach/Isochore maps/data
   7. Digital elevation models (DEMs)
   8. Data types
      1. Polygons/GIS shape files/maps/DEMs/excel data/other
2. Borehole data
   1. Well name and API
      1. location, elevation, total depth, GR/TD/KB
      2. lat/long, township and range and section, UTM
      3. well type, well statues,
      4. Operator, field, county,
      5. Well reports, drilling, permits, etc.
   2. Formation top depths, thickness
      1. Net sand/pay
      2. extent
   3. Production and injection volumes
   4. Fluid Chemistry
   5. Groundwater data
      1. Depth and extent of USDWs
      2. Salinity, TDS, chemistry
3. Petrophysical Data
   1. Core data
      1. Porosity, permeability, lithology, cementation,
      2. Geomechanics, USC, Brazilian, triaxial compression strength
   2. Logs
      1. Porosity, permeability, gama-ray (GR), neutron porosity (NPHI), sonic, density (RHOB), caliper,
      2. Pressure (DTS), temperature, lithology, cements,
   3. Data types
      1. Formatted text files (.csv), LAS, scanned documents (pdf), images (tiff), polygons, shape files, excel files
4. Seismic Data
   1. Age and condition: new vrs legacy
   2. 2D, 3D, cross-well, VSP
5. CO2 Source Data
   1. Top 5-10 CO2 emitters
      1. Name, location,
      2. Annual emissions, estimated future emissions, expected lifespan
      3. CO2 capture method, cost, volume, efficiency, incentives
      4. Number and quality of CO2 streams
      5. Emissions being reported to EPA?
         1. Reporting rate and location of database
         2. Can we connect to it?
6. CO2 Transport Data
   1. Pipeline operators
      1. Operator name, state,
      2. Pipeline location(s), total capacity, spare capacity
   2. Other potential Rights of Way (ROW)
      1. Routes, ROW type
   3. Regulatory body
7. Spatial Data
   1. Fault maps
   2. Geology maps
   3. Pipeline & ROW maps
   4. State and county boundaries
   5. Oil and gas field boundaries
   6. Geographic Surface data
      1. Endangered species habitat/NEPA
      2. National parks/historic sites/protected lands
      3. Cities and towns
      4. Land ownership
      5. Military bases/areas
   7. Source Locations
   8. Data types
      1. Geodatabases, shape files, scanned maps, paper maps

***NatCARB***

<https://www.netl.doe.gov/coal/carbon-storage/strategic-program-support/natcarb-atlas>

Current website has invalid credentials. Security needs to be updated to work with all browsers. (Firefox won’t open but Internet Explorer will)

NatCARB viewer doesn’t work either. It will not scale with the window.