

NATCARB Sources (v1204)

FGDC Metadata

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Description

Citation

Title: NATCARB Sources (v1204)

Originators: National Carbon Sequestration Database and Geographic Information System (NATCARB), US Dept of Energy (DOE) National Energy Technology Laboratory (NETL)

Publication date: 20121214

Edition: v1204

Data type: vector digital data

Data location: http://www.netl.doe.gov/technologies/carbon_seq/natcarb/download.html

Description

Abstract: The National Carbon Sequestration Database and Geographic Information System (NATCARB) Sources spatial database of stationary sources of atmospheric carbon dioxide (CO₂) emissions across the USA and parts of Canada. Sources are classified into nine categories - Agricultural Processing Facilities, Cement and Lime Plants, Electric Generating Plants, Ethanol Production Plants, Fertilizer Production, Industrial Facilities, Petroleum or Natural Gas Transmission, Refineries and Chemical Facilities, and Unclassified. This data layer reflects the best available knowledge regarding stationary CO₂ emissions sources in the USA and Canada.

Version Log:

v1101 - Initial release for Atlas III;

v1102 - not released;

v1103 - CANADA and WESTCARB data updated. Many duplicates among partnerships removed. Metadata revised.;

v1104 - Ethylene and Ethylene Oxide plants reclassified to Refineries/Chemical Plant;

v1204 - Initial release for Atlas IV. New data submitted by all regional partnerships.

The NATCARB is administered by the US Dept. of Energy (DOE) National Energy Technology Laboratory (NETL) and contains data provided by the Regional Carbon Sequestration Partnerships (RCSP). The NATCARB Team at KGS compiled the regional datasets into a single, seamless layer.

Purpose: The NATCARB Sources dataset provides a single, seamless spatial database of stationary sources of atmospheric carbon dioxide emissions across the USA and parts of Canada compiled from regional datasets created by the RCSPs. The spatial distribution of carbon dioxide emission estimates in this dataset are intended to be used as an initial assessment of stationary sources only. Stationary sources are particular, identifiable, localized sources of emissions, and include such operations as power plants, ethanol plants, petroleum and natural gas processing facilities, cement and lime plants, agricultural processing facilities, industrial facilities, iron and steel production facilities, and fertilizer production facilities. Non-stationary sources of CO₂, such as transportation, and non-point sources, such as widespread land use practices, are not included in this data set. RCSPs either used emissions estimates from the EPA Greenhouse Gas database or calculated emissions estimates using other publicly-available databases (e.g., eGRID, IEA GHG, and NATCARB) and emissions factors. Calculation methods for a given source type vary by RCSP. Appendix A of The United States 2012 Carbon Utilization and Storage Atlas - Fourth Edition documents the practical quantitative methods used by each RCSP (i.e., emission factors, continuous emissions-monitoring results, emission estimate equations, etc.) to estimate CO₂ emissions from each source. Appendix A also includes the data sources used to determine plant capacities, production outputs, and fuel usage.

Supplemental information: For a detailed methodology of emissions estimates refer to Appendix A of The United States 2012 Carbon Utilization and Storage Atlas - Fourth Edition (Atlas IV). For data access please contact the US DOE-NETL NATCARB Map Team - NatCarb.Maps@netl.doe.gov For questions regarding how the data were assembled, contact the KGS NATCARB Team - natcarb@kgs.ku.edu

Dataset credit: Version 1204 (fourth quarter release of 2012) of the NATCARB Sources spatial database was created by the NATCARB Team at the Kansas Geological Survey (KGS). The following Regional Carbon Sequestration Partnerships (RCSP) contributed data to the national dataset:

Big Sky Carbon Sequestration Partnership (BSCSP);

Midwest Geological Sequestration Consortium (MGSC);

Midwest Regional Carbon Sequestration Partnership (MRCSP);

The Plains CO₂ Reduction Partnership (PCOR);

Southeast Regional Carbon Sequestration Partnership (SECARB);
Southwest Regional Partnership on Carbon Sequestration (SWP);
West Coast Regional Carbon Sequestration Partnership (WESTCARB).
Data were also provided by NETL.

Point Of Contact

Organization: NATCARB Map Team, US Dept. of Energy (DOE) National Energy Technology Laboratory (NETL)
Phone: 304-285-1354
Phone: 304-285-2006
Email: NatCarb.Maps@netl.doe.gov
Address type: mailing and physical
Address: 3610 Collins Ferry Road M/S F04
City: Morgantown
State or Province: West Virginia
Postal code: 26507
County: US

Data Type

Data type: vector digital data
Native dataset environment: Microsoft Windows 7 Version 6.1 (Build 7601) Service Pack 1; Esri ArcGIS 10.1.1.3143

Status

Data status: Complete
Update frequency: Quarterly

Key Words

Theme:
Keywords: Carbon Dioxide Emissions, Energy, US Department of Energy, NATCARB
Keyword thesaurus: None
Place:
Keywords: USA, Canada
Keyword thesaurus: ISO 19115 Topic Category
Stratum:
Keyword thesaurus: ISO 19115 Topic Category

Data Access Constraints

Access constraints: None
Use constraints: None

Spatial Reference Information

Horizontal Coordinate System

Coordinate System Details

Geographic coordinate system

Latitude resolution: 8.9831528411952133e-009
Longitude resolution: 8.9831528411952133e-009
Geographic coordinate units: Decimal Degrees

Geodetic model

Horizontal datum name: D WGS 1984

Ellipsoid name: WGS 1984

Semi-major axis: 6378137.0

Denominator of flattening ratio: 298.257223563

Spatial Domain

Bounding Coordinates

In Unprojected coordinates (geographic)

Boundary	Coordinate
West	-162.852029 (latitude)
East	-64.703195 (latitude)
North	70.500001 (longitude)
South	17.746642 (longitude)

Data Structure and Attribute Information

Overview

Direct spatial reference method: Vector

Attributes of NATCARB_Sources_v1204

Description: Vector point features representing major stationary sources of carbon dioxide emissions in the USA and parts of Canada

Source: NATCARB

Attributes

OBJECTID

Definition: Internal feature number.

Attribute values: Sequential unique whole numbers that are automatically generated.

Attribute definition source: ESRI

SHAPE

Definition: Feature geometry.

Attribute values: Coordinates defining the features.

Attribute definition source: ESRI

PARTNERSHIP

Definition: Abbreviation for RCSP or other data source

Attribute domain values

Value	Definition
NEW ENGLAND	New England emissions sources derived from EPA data by KGS
BSCSP	Big Sky Sequestration Partnership
SECARB	Southeast Regional Carbon Sequestration Partnership
CANADA	Natural Resources Canada / Ressources naturelles Canada
WESTCARB	West Coast Regional Carbon Sequestration Partnership
MRCSP	Midwest Regional Carbon Sequestration Partnership
PCOR	The Plains CO2 Reduction Partnership

SWP	Southwest Regional Partnership on Carbon Sequestration
MGSC	Midwest Geological Sequestration Consortium

Attribute definition source: Atlas IV

FRS_ID

Definition: EPA Facility Registry System Code

Attribute value codeset domain

Codeset	Description
Name	Facility Registry System
Source	US Environmental Protection Agency

Attribute definition source: US Environmental Protection Agency

PRIMARY_NAICS

Definition: US Census Bureau North American Industry Classification System code

Attribute value codeset domain

Codeset	Description
Name	North American Industry Classification System
Source	US Census Bureau

Attribute definition source: US Census Bureau

EPA_ID

Definition: Internal ID assigned by KGS to EPA GHG data records.

Attribute definition source: KGS

ORIS

Definition: EPA Office of Regulatory Information Systems code

Attribute value codeset domain

Codeset	Description
Name	Office of Regulatory Information Systems
Source	US Environmental Protection Agency

LONGITUDE_WGS84

Definition: Longitude (WGS 84) of emission source

Attribute domain range

Range	Value
Minimum	-180
Maximum	180
Attribute units of measurement	decimal degrees

LATITUDE_WGS84

Definition: Latitude (WGS 84) of emission source

Attribute domain range

Range	Value
Minimum	-90
Maximum	90
Attribute units of measurement	decimal degrees

SOURCE_NAME

Definition: Name of emission source

OPERATOR

Definition: Operator (owner) of emission source.

Attribute values: Text string

ADDRESS

Definition: Street address of emission source.

Attribute values: Text string

CITY

Definition: City of emission source

Attribute values: Text string

STATE_PROV_NAME

Definition: Full State or Province name

STATE_PROV_ABBRV

Definition: State or Province abbreviation

SOURCE_TYPE

Definition: Emission source type as submitted by RCSP

Attribute values: Text string

Attribute definition source: RCSP

SOURCE_TYPE_COMMON

Definition: Classified emission source type

Attribute domain values

Value	Definition
REFINERIES/CHEMICAL	Petroleum refinery or chemical production plant
ETHANOL	Ethanol plant
CEMENT PLANT	Cement plant or lime production facility
AG PROCESSING	Agricultural or food processing facility
ELECTRICITY	Coal-, oil- or natural gas-fired electric generating plant
FERTILIZER	Fertilizer or ammonia production facility
UNCLASSIFIED	Other CO2 source
PETROLEUM/NATURAL GAS	Petroleum or natural gas processing or transmission
INDUSTRIAL	Industrial/Manufacturing (non-chemical or petroleum)
MINING	Mineral mine or mining-related facility

Attribute definition source: DOE-NETL

EPA_IND_SUBPART

Definition: Letter code(s) designating facility type (from EPA GHG database).

Attribute value codeset domain

Codeset	Description
Name	Industry Subpart Code
Source	US Environmental Protection Agency

Attribute definition source: US Environmental Protection Agency

FUEL

Definition: Fuel type of emission source. This data is under development and should not be used.

Attribute value accuracy explanation: Data is under development. Do not use.

Attribute values: Text string

Attribute definition source: Atlas IV

CO2_TONNE

Definition: Estimated emission amount in metric tonnes

Attribute domain range

Range	Value
Minimum	0
Attribute units of measurement	metric tonnes
Attribute measurement resolution	whole number

YEAR

Definition: Year for which emissions data were calculated

Attribute values: Year

SDTS Feature Description

Spatial data transfer standard (SDTS) terms

Feature class

Type: Entity point

Count: 4245

Data Quality and Accuracy Information

General

Logical consistency report: All RCSPs provided carbon dioxide emission source data in accordance with common standards developed by the RCSPs and the NATCARB project teams. (See Sources for more information on methodologies). Discrepancies and overlaps occur at the boundaries of some adjacent partnerships and DOE-NETL is the final authority on the handling of these issues.

Completeness report: This dataset reflects the best available knowledge regarding the location of stationary atmospheric carbon dioxide emission sources in the USA and parts of Canada. Not all RCSPs provided data for all attribute fields in the database.

Attribute Accuracy

Attribute accuracy report: Questions regarding accuracy of the data (spatial and attribute) should be directed to the individual RCSPs. Except for certain cases of inter-partnership overlap, NATCARB did not make any changes to the data except for making corrections to values in text fields (spelling, capitalization, etc.) when errors were noticed.

Data Source and Process Information

Data Sources

Data source information

SECARB

Title: SECARB Coal Carbon Sequestration Potential

Originators: Southern States Energy Board
Southeast Regional Carbon Sequestration Partnership

Data type: vector digital data

Data location: <http://www.natcarb.org/Atlas/partners.html>, <http://www.secarbon.org/>

Media: None

Source contribution: Southeast Regional Carbon Sequestration Partnership provided data for the Southeastern United States (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Eastern Texas, West Virginia and Virginia).

WESTCARB

Title: WESTCARB Coal 10K Carbon Sequestration Potential

Originators: California Energy Commission
West Coast Regional Carbon Sequestration Partnership

Data type: vector digital data

Data location: <http://www.westcarb.org/>, <http://www.natcarb.org/Atlas/partners.html>

Media: None

Source contribution: West Coast Regional Carbon Sequestration Partnership provided data for the Western United States and Canada (Alaska, Western Arizona, Western British Columbia, California, Hawaii, Nevada, Western Oregon and Western Washington).

BSCSP

Title: BSCSP Coal 10K Carbon Sequestration Potential

Originators: Big Sky Sequestration Partnership
Montana State University

Data type: vector digital data

Data location: <http://www.natcarb.org/Atlas/partners.html>, <http://www.bigskyco2.org/>

Media: None

Source contribution: Big Sky Carbon Sequestration Partnership provided data for the Innermountain West region of the Northwestern United States (Idaho, Eastern Montana, Eastern Oregon, Western South Dakota, Eastern Washington and Wyoming).

MGSC

Title: MGSC Coal 10K Carbon Sequestration Potential

Originators: Illinois State Geological Survey
Midwest Geological Sequestration Consortium

Data type: vector digital data

Data location: <http://www.sequestration.org/>, <http://www.natcarb.org/Atlas/partners.html>

Media: None

Source contribution: Midwest Geological Sequestration Consortium provided data for Illinois, Western Indiana and Western Kentucky.

SWP

Title: SWP Coal 10K Carbon Sequestration Potential

Originators: Southwest Regional Partnership on Carbon Sequestration
New Mexico Institute of Mining and Technology

Data type: vector digital data

Data location: <http://www.southwestcarbonpartnership.org/>, <http://www.natcarb.org/Atlas>

</partners.html>

Media: None

Source contribution: Southwest Regional Partnership on Carbon Sequestration provided data for the Southwestern United States (Eastern Arizona, Colorado, Kansas, New Mexico, Western Texas and Utah).

DOE-NETL

Title: DOE-NETL

Originators: US Department of Energy (DOE) National Energy Technology Laboratory NATCARB Team

Media: None

Source contribution: As the responsible authority for the National Carbon Sequestration Database and Geographic Information System (NATCARB), the US Department of Energy (DOE) National Energy Technology Laboratory (NETL) NATCARB Team provided data, methodological guidance and expertise in handling issues specific to creation of the composite NATCARB data layers.

MRCSP

Title: MRCSP Coal 10K Carbon Sequestration Potential

Originators: Batelle Memorial Institute

Midwest Regional Carbon Sequestration Partnership

Data type: vector digital data

Data location: <http://www.natcarb.org/Atlas/partners.html>, <http://www.mrcsp.org/>

Media: None

Source contribution: Midwest Regional Carbon Sequestration Partnership provided data for the Ohio Valley and Northeastern United States (Eastern Indiana, Eastern Kentucky, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania and West Virginia).

PCOR

Title: PCOR Coal 10K Carbon Sequestration Potential

Originators: University of North Dakota, Energy and Environmental Research Center

The Plains CO2 Reduction Partnership

Data type: vector digital data

Data location: <http://www.natcarb.org/Atlas/partners.html>, <http://www.undeerc.org/pcor/>

Media: None

Source contribution: The Plains CO2 Reduction Partnership provided data for the upper Midwest and Central Canada (Iowa, Minnesota, Missouri, Eastern Montana, Nebraska, North Dakota, Eastern South Dakota, Wisconsin, Eastern Wyoming, Alberta, Northeastern British Columbia, Manitoba and Saskatchewan).

Atlas IV

Title: The United States 2012 Carbon Utilization and Storage Atlas

Originators: US Department of Energy - National Energy Technology Laboratory Carbon Sequestration Program

Publisher: US Department of Energy - National Energy Technology Laboratory

Edition: Fourth

Data location: http://www.netl.doe.gov/technologies/carbon_seq/refshelf/atlasIII/

Other citation details: <http://www.netl.doe.gov> 1-800-553-7681

Media: onLine

Source contribution: The Fourth Edition of The United States 2012 Carbon Utilization and Storage Atlas (Atlas IV) provides updated information regarding carbon dioxide storage potential in the US and parts of Canada and includes maps, summary tables and, in Appendices A and B, detailed methodologies.

KGS

Title: KGS NATCARB

Media: None

Source contribution: As the primary entity responsible for compiling the NATCARB layers, the Kansas Geological Survey NATCARB Team worked closely with the DOE-NETL NATCARB Team to develop rules and methods for assembling the composite datasets.

Process Steps

Process step information

Process Step 1

Process description: The NATCARB Team at the Kansas Geological Survey assembled GIS datasets from the regional partnerships (and other sources where necessary) into a single layer using ESRI's ArcInfo (v10.0) software in the Summer and Fall of 2012. Other alterations to the data include identifying overlapping and duplicate data submitted by adjacent partnerships and making corrections to values in text fields (spelling, capitalization, etc.) when errors were noticed.

Organization: GIS Support Section, Kansas Geological Survey

Position: NatCarb Team

Phone: 785-864-3965

Email: natcarb@kgs.ku.edu

Hours of service: 8 am - 5 pm M-F

Address type: mailing and physical

Address: 1930 Constant Ave

City: Lawrence

State or Province: KS

Postal code: 66047-3726

County: US

Data Distribution Information

General

Distribution liability: See access and use constraints information.

Distribution Point of Contact

Organization: NATCARB Map Team, US Department of Energy (DOE) National Energy Technology Laboratory (NETL)

Phone: 304-285-1354

Phone: 304-285-2006

Email: NATCARB.Maps@NETL.DOE.GOV

Address type: mailing and physical

Address: 3610 Collins Ferry Road M/S F04

City: Morgantown

State or Province: West Virginia

Postal code: 26507

County: US

Standard Order Process

Digital form:

Format name: ESRI File Geodatabase

Format version number: 10.0

File decompression technique: zip

Digital transfer option:

Online option:

Computer information:

Network address:

Network resource name: http://www.netl.doe.gov/technologies/carbon_seq/natcarb/download.html

Fees: None

Ordering instructions: GIS datasets in ESRI file geodatabase and shapefile format are available online. Please contact the DOE-NETL NATCARB Map Team for custom requests.

Metadata Reference

Metadata Date

Last updated: 20121212

Metadata Point of Contact

Organization: GIS Support Section, Kansas Geological Survey

Position: NATCARB Team

Phone: 785-864-3965

Email: natcarb@kgs.ku.edu

Hours of service: 8 am - 5 pm M-F

Address type: mailing and physical

Address: 1930 Constant Ave

City: Lawrence

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Postal code: 66047-3726

County: US

Metadata Standards

Standard name: FGDC Content Standard for Digital Geospatial Metadata

Standard version: FGDC-STD-001-1998

Time convention: local time

FGDC Plus Metadata Stylesheet

Federal Geographic Data Committee