

Electronic Greenhouse Gas Reporting Tool



### U.S. EPA Greenhouse Gas Reporting Program 2021 Data Release

U.S. Environmental Protection Agency Greenhouse Gas Reporting Program

Webinar October 19, 2022 2:00pm EST

#### **Three Audio Options:**

- 1) Listen on Computer
- (2) Use the WebEx "call-me" feature
- (3) Dial 1-415-655-0002 or 1-855-797-9485
  - Event number: 2435 746 7907



# Webinar Panels

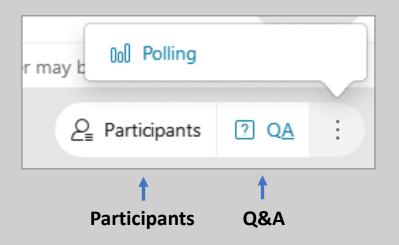
### We will use two panels

- Participants, and Question & Answer (Q&A)
- Use the arrow to expand or collapse the panels

	Q Connected
> Participants (2)	×
> Polling	×
Q&A	×

### **Adding Panels**

- If some panels don't appear, select the desired panels in the lower right
- Select More Options (...) for additional panels



### Q&A

- Participants are muted
- Questions will be moderated at the end
- To ask a question:
  - Select "All Panelists" from the drop-down menu
  - 2. Enter your question in the Q&A box
  - 3. Hit "Send"
- EPA will post webinar materials to the web in the coming weeks: <u>www.epa.gov/ghgreporting</u>



# Outline

- Options for viewing GreenHouse Gas Reporting Program (GHGRP) data
- Note on state-level data aggregation for some sectors
- Facility Level Information on GreenHouse gases Tool (FLIGHT) overview and demo
- GHGRP data highlights and resources
  - Data sets
  - Industrial profiles
- EPA Envirofacts
  - Greenhouse gas (GHG) search
  - GHG customized search (new customized query builder)
    - Downloadable files (too big for Envirofacts search)
- Interactive State/Tribal Fact Sheet
- Demographic Data features
- Help Resources

#### **EPA's GHGRP Data Highlights**

**Best for: Data at a glance** 

### **FLIGHT**

**Best for: Exploring data** 

#### **EPA's Envirofacts**

Best for: Querying and downloading data

How to Use Envirofacts	News and Informat	ion Di	ita Update	Envirofacts M
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Envirofa	cts			
Your one-stap source for Environments	Priorescor			
Get the EnviroFACTS!		Topic Sear	ches	
Retrieve information from multip Envirolacts' System Data for you Interest.		Alr	waste	Fadility
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Enter a location such as address county, waterbody, park name,		Land	Toxics	Complia
		STR. A		and the second second

SEPA United States Environmental Protects	27	
<b>Environmental Topics</b>	Laws & Regulations About EPA	Search EPA.gov Q
Greenhouse Ga	as Reporting Program (GHGRP)	CONTACT US SHARE (F) (9) (20)
Greenhouse Gas Reporting Program (GHGRP) Home	GHGRP Reported Data	
GHGRP Data	- <u>-</u>	
2017 Highlights	For reporting year (RY) 2017, over 8,000 facilities and suppliers	All greenhouse gas data
Power Plants	reported to the greenhouse gas	presented here reflect the information reported to
Petroleum & Natural Gas Systems	reporting program. Among these reporters,	EPA as of August 19, 2018. The reported emissions
Refineries	7,544 facilities in nine industry	exclude biogenic CO <sub>2</sub> , GHG data displayed are in units
Chemicals	sectors reported direct	of carbon clioxide
Waste	emissions.	equivalent (CO <sub>2</sub> e) and reflect the global warming
Metals	<ul> <li>Reported direct emissions totaled 2.91 billion metric tons</li> </ul>	potential (GWP) values
Minerals	carbon dioxide equivalent (CO2e), about half of total U.S.	from Table A-1 EUT , which is generally based on
Pulp & Paper	greenhouse gas emissions; 967 suppliers of fossil fuels and industrial gases reported; and	the Intergovernmental Panel on Climate
<b>Miscellaneous Combustion</b>	<ul> <li>98 facilities reported injecting CO<sub>2</sub> underground.</li> </ul>	Change (IPCC)'s Fourth
Underground Coal Mines	Commence CIUCED data has have been been been late another at the	Assessment Report (AR4) EXIT , The GWPs for

#### **Data Highlights Link:**

www.epa.gov/ghgreporting/ghgrp-reported-data

#### **FLIGHT Link:**

flight

Information on GreenHouse gases

Facility Level

Tool

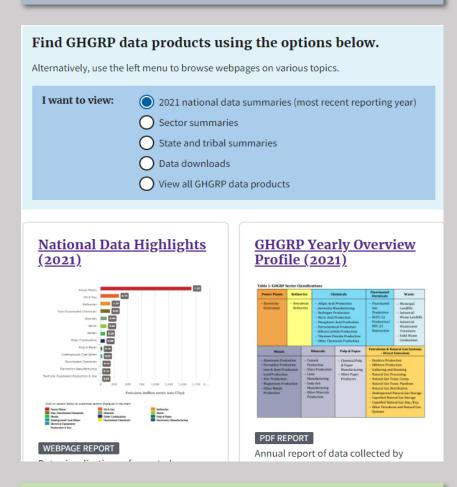
https://ghgdata.epa.gov/ghgp/main.do

#### **Envirofacts GHG Link:**

www3.epa.gov/enviro/facts/ghg/search.html

#### FIND and USE GHGRP DATA

#### **Best for: Finding Our Data**

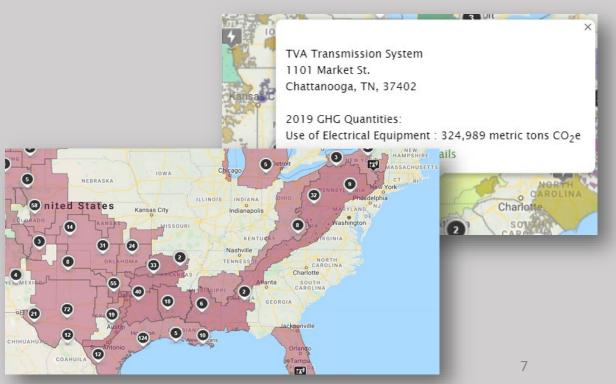


#### Find and Use Data Link:

www.epa.gov/ghgreporting/find-and-use-ghgrpdata

### Note on Non-Geolocated Data

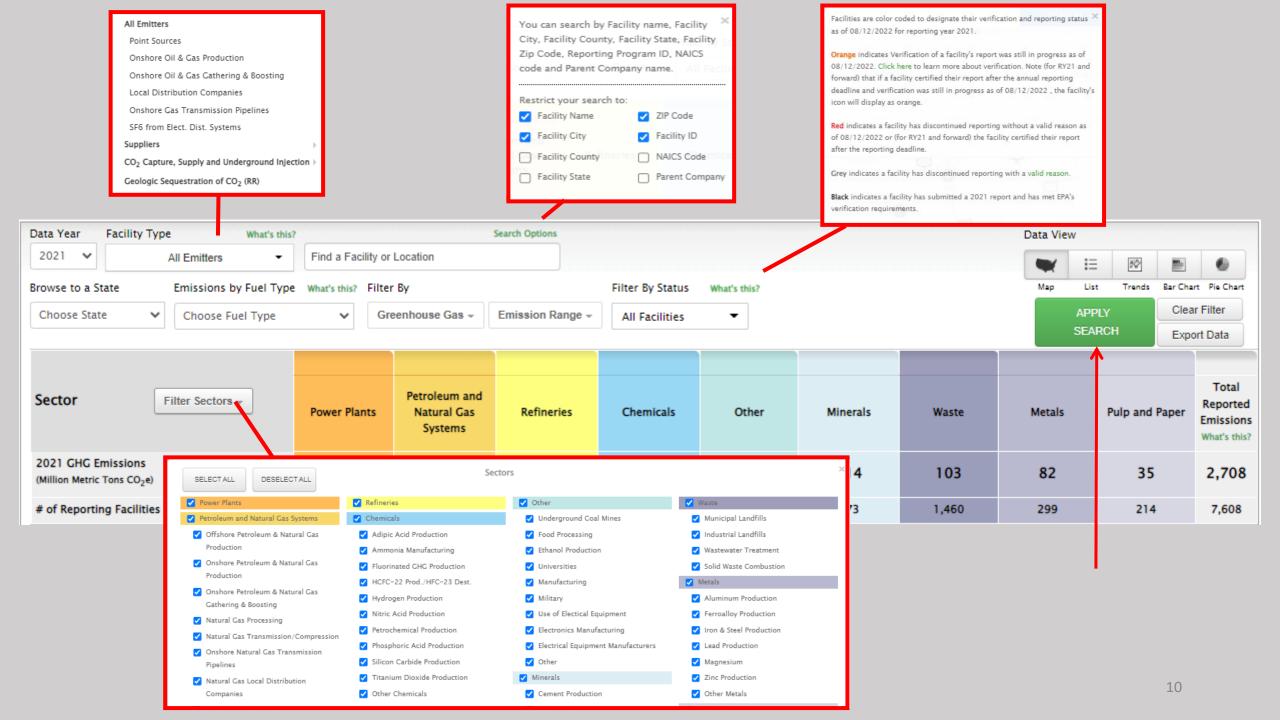
- The following direct emitter sources report data that cannot be disaggregated to individual locations or states. Their data uses a corporate or other address that may not match where the emissions come from:
  - Onshore oil and gas production
  - Onshore gathering and boosting
  - Use of electrical equipment
- This Effects
  - State Aggregations in FLIGHT
  - State & Tribal Fact Sheets
  - Demographic Data Highlights



# Live Demonstration of GHGRP Data Tools and Resources

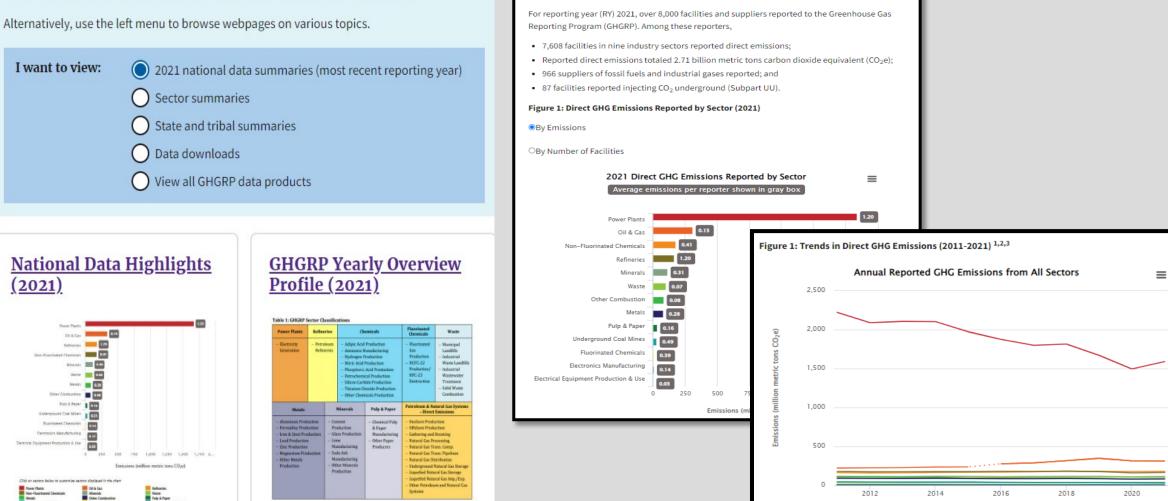
# FLIGHT

Data Year Facility Type What's the 2021 V All Emitters			from Large Facilities	Share     View U.S. GHG Inventory     View Other GHGRP Data Products     Help       Now you can visit ghgdata.epa.gov from your mobile device. Click here to learn how to create a bookmark to our page on your mobile device.     Data Year 2021        Data View     Jeffrey Energy Center       Data View     St. MARYS, KS, 66536						Jeffrey Energy Center	Facility Information     Facility Emissions by Year       Total Facility Emissions in metric tons CO2     8.75       equivalent (mt CO2e) (AR4 GWPs, excluding       Biographic CO2		
2021     All Emitters       Browse to a State     Emissions by Fuel Type       Choose State     Choose Fuel Type	e What's this? Filte		Emission Range –	Filter By Status	What's this?			Map L	PPLY Cle	eart Pie Chart ar Filter port Data		Biogenic CO <sub>2</sub> ) Emissions by Gas in mt CO <sub>2</sub> e (AR4 GV Carbon Dioxide (CO <sub>2</sub> ) Methane (CH <sub>4</sub> )	WPs) 8,714,010 2,330
Sector Filter Sectors -	Power Plants	Petroleum and Natural Gas Systems	Refineries	Chemicals	Other	Minerals	Waste	Metais	Pulp and Paper	Total Reported Emissions What's this?	anhattan Topeka Leaflet	Nitrous Oxide (N <sub>2</sub> O) Emissions by Source/Process in mt C Biogenic CO <sub>2</sub> ) Stationary Combustion	43,447 O <sub>2</sub> e (AR4 GWPs, excluding 857
2021 GHG Emissions (Million Metric Tons CO <sub>2</sub> e)	1,589	312	165	186	121	114	103	82	35	2,708	Latitude: 39º 16.95' N	Electricity Generation	8,758,931
# of Reporting Facilities     Legend Layer Options     All Emitters     All Emitters     All Emitters and Point Sources     All Emitters and Point Sources     All Emitters     Local Distribution Companies and Onshore Cas     Transmission Pipelines     Sef from Electrical Transmission and Distribution     Equipment Use     Suppliers     Suppliers     Co2 Injection (UU)	1,326 Roadmap Satellite Demogra	2,379 phic Index	137 B 2 19 35 C 2 C	459 60 90 91 91 91 91 91 91 91 91 91 91 91 91 91		373	Ottawa Ottawa Daw York ashington	299	25905 JEF	7,608 + - X ergy Center :FREY ROAD 5, KS, 66536	Longitude: 96° 06.92' W GHGRP Id: 1000581 FRS Id: 110006011680 NAICS Code: 221112 Clean Air Markets Division Business Database Id: 805 View reported data Download reported data (XML)	Information on Stationary Combustio Types of Fuels Used Measurement Methods Used Number of equipment groupings Information on Electricity Generation Types of Fuels Used Measurement Methods Used Number of equipment groupings	Distillate Fuel Oil No. 2 Mass Balance 5 Distillate Fuel Oil No. 2, Subbituminous Coal Direct Emissions Monitoring
Geologic Sequestration of CO2 (RR) Multiple Facilities Demographic Index * National Map Federal Lands *	4 emissions. Learn n	Lõs	43 Ph (P) Angeles Ph (P) PA CHC data source	México Clud s. Data reported to l	dica A	La Habana Cuba 2022.		•	2021 Emis Power Play	ssions:	7 metric tons CO2e 2 Leavenworth Uberty 2 Kansios Ity Olathe Reiton 2		9



# Data Highlights

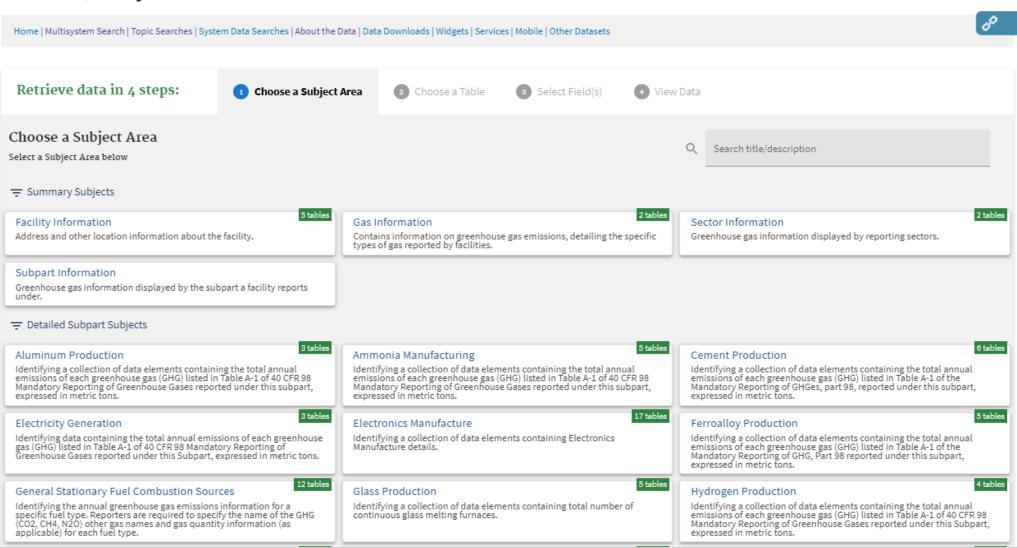
#### Find GHGRP data products using the options below.



**GHGRP Reported Data** 

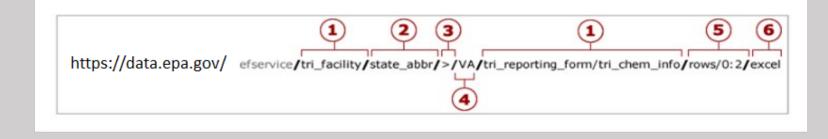
# Envirofacts

#### **GHG Query Builder**



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# Envirofacts RESTful Service syntax



•(1) Table Name – At least one table name is required. Up to three table names can be entered.

•(2) Column Name – This is an optional entry. Enter a column name and value to limit the results.

•(3) Operator – This is an optional entry. This parameter allows users to pass in an operator with the query. Default output is "=" and does not require an operator, but users can enter "<", " >", "!=", "BEGINNING", "CONTAINING", operators as well via the URL. The "BEGINNING" operator will return rows where the start of a column value is equal to the search value. While the "CONTAINING" will return rows where the start of a column value is equal to operators is available in the <u>EF Data Service API complete documentation</u>.

•(4) Column Value – This is an optional entry. The column value is queried against the database without modification. Use the program system Model to double check the case for the value.

•(5) Rows – This is an optional entry. Specify the rows to display by entering 'rows/ <first\_row> : <last\_row>' Results numbering starts at 0. So to get the first five hundred rows enter rows/0:499 If "rows" is not specified, the default is the first 10000 rows.

•(6) Output Format – This is an optional entry. The default output is in XML; however, output options of JSON, CSV or Excel can be requested in the URL. The output format is not case sensitive.

•(7) Count – This is an optional entry and not shown in the above URL. Count will show the total number of records that will be returned when using the URL without the count. This is available only with the default XML output.

# Envirofacts RESTful Service Examples

• Retrieve Facility Information of emitters and suppliers to Greenhouse Gas (first 101 records): https://data.epa.gov/efservice/PUB\_DIM\_FACILITY/ROWS/0:100

Here we just retrieve information from the PUB\_DIM\_FACILITY table. This is a summary table containing facility details for both emitters and suppliers.

The results can be returned in four formats: XML (default), **Excel**, **CSV**, or **JSON**. To specify Excel, CSV or JSON, just add "/EXCEL, "/CSV or "/JSON" to the URL. <u>https://data.epa.gov/efservice/PUB\_DIM\_FACILITY/ROWS/0:100/JSON</u> <u>https://data.epa.gov/efservice/PUB\_DIM\_FACILITY/ROWS/0:100/EXCEL</u>

https://data.epa.gov/efservice/PUB\_DIM\_FACILITY/ROWS/0:100/CSV

Retrieve Facility Information and Gas details for direct emitters (first 101 records in XML)
 <a href="https://data.epa.gov/efservice/PUB\_DIM\_FACILITY/FACILITY\_TYPES/Direct%20Emitter/PUB\_FACTS\_SUBP\_GHG\_EMISSION/PUB\_DIM\_GHG/ROW\_S/0:100">https://data.epa.gov/efservice/PUB\_DIM\_FACILITY/FACILITY\_TYPES/Direct%20Emitter/PUB\_FACTS\_SUBP\_GHG\_EMISSION/PUB\_DIM\_GHG/ROW\_S/0:100</a>

Here we are utilizing three tables: PUB\_DIM\_FACILITY (facility info), PUB\_FACTS\_SUBP\_GHG\_EMISSION (Gas details and amounts), and PUB\_DIM\_GHG (additional Gas details). We also are adding the column "FACILITY\_TYPES" within our URL, so that we only retrieve "Direct Emitter" information.

• If you wanted to get the same information as above for all Colorado facilities, you would add "/STATE/=/CO" to the URL.

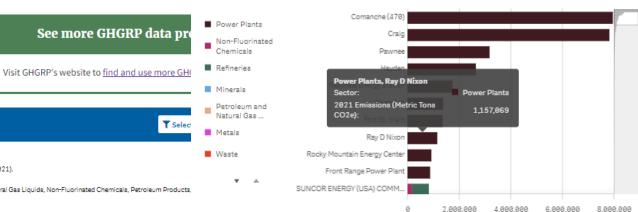
https://data.epa.gov/efservice/PUB\_DIM\_FACILITY/STATE/=/CO/PUB\_FACTS\_SUBP\_GHG\_EMISSION/PUB\_DIM\_GHG

# State and Tribal Fact Sheet

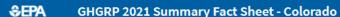
#### **GHGRP State and Tribal Fact Sheet**

This page provides an interactive fact sheet summarizing GHGRP emissions for the current year.

Choose a state, EPA Region, or tribal lands to view maps, charts, and tables summarizing emissions.



#### Direct GHG Emissions by Facility and Industry Sector in 2021

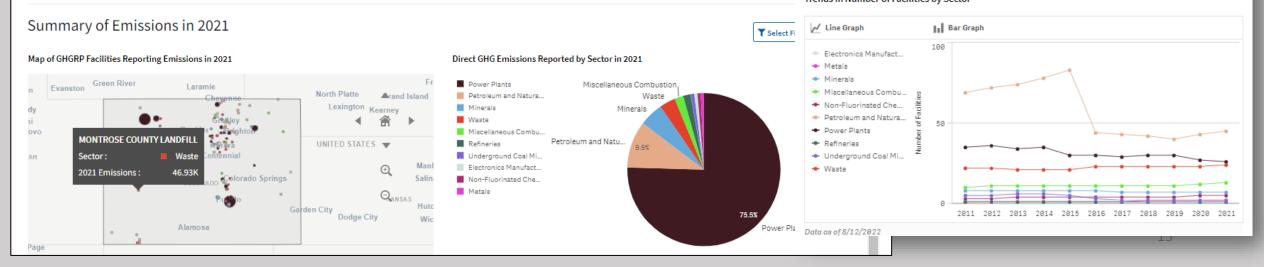


· Data download options are available at the bottom of the page.

About this tool:

		Waste	Rocky Mountain Energy Cente	r				
Number of Facilities	This page provides a summary of GHGRP emissions data reported by facilities in Colorado based on 2021 data (as of 8/7/2021).		Front Range Power Plan	t				
123	Sectors: Electrical Equipment, Electronics Manufacturing, Metals, Minerals, Miscellaneous Combustion, Natural Gas & Natural Gas Liquids, Non-Fluorinated Chemicals, Petroleum Products, Natural Gas Systems, Power Plants, Refineries, Underground Coal Mines, Waste	Ŧ	SUNCOR ENERGY (USA) COMM					
2021 Emissions (metric tons CO <sub>2</sub> e)	Greenhouse Gases: Carbon Dioxide, HFCs, HFEs, Methane, Nitrogen Triflouride, Nitrous Oxide, Other Fully Fluorinated GHGs, PFCs, Sulfur Hexafluoride			0	2,088,000 2021 Emis	4,008,080 sions (Metric To	6,008,080 bns CO2e)	8,000
$2021$ Emissions (metric tons $CO_2e$ )	Note: State emissions totals do not include emissions from the Petroleum and Natural Gas Systems Onshore Production and Gathering and Boosting segments, as these emissions are repu							
41,899,750	basin level, which may cross state boundaries. State emission totals also do not include emissions from electric distribution systems, which are reported at the corporate level, and cannot i individual states.	Trends	s in Emissions					

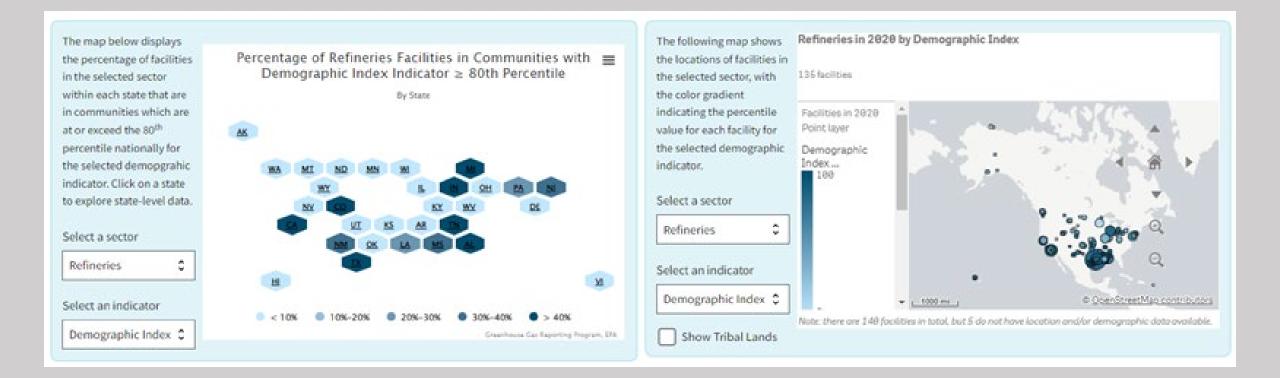
Trends in Number of Facilities by Sector



# Demographic Data Highlights



# Demographic Data Highlights



### For Help

• GHGRP Help

<u>https://ccdsupport.com/confluence/</u> <u>https://ccdsupport.com/confluence/display/ghgp/Home</u>

• Contact us:

Email to <a href="mailto:ghgreporting@epa.gov">ghgreporting@epa.gov</a> or use web-form:

https://ccdsupport.com/confluence/display/ghgp/Contact+Us

# Links

 Find and Use GHGRP Data: <u>www.epa.gov/ghgreporting/find-and-use-ghgrp-data</u>

### • FLIGHT

https://ghgdata.epa.gov/ghgp/main.do

- GHGRP Data Highlights <u>www.epa.gov/ghgreporting/ghgrp-reported-</u> <u>data</u>
- GHGRP Data Sets

www.epa.gov/ghgreporting/ghg-reportingprogram-data-sets

• Envirofacts (EF) Database

https://enviro.epa.gov/envirofacts/ghg/searc h

• EF Greenhouse Gas Customized Search <u>https://enviro.epa.gov/query-builder/ghg</u> • EF Greenhouse Gas Model

www.epa.gov/enviro/greenhouse-gas-model

- EF Greenhouse Gas RESTful Data Service <u>https://www.epa.gov/enviro/greenhouse-gas-</u> <u>restful-data-service</u>
- GHGRP Help https://ccdsupport.com/confluence/
- GHGRP State Fact Sheet

www.epa.gov/ghgreporting/ghgrp-state-factsheet

• Demographic Data Highlights:

https://edap.epa.gov/public/extensions/GHG RP-Demographic-Data-Highlights/GHGRP-Demographic-Data-Highlights.html