



Combined Air Emissions Reporting System

2023 International Emissions Inventory Conference

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1. Why CAERS?

We believe that air emissions reporting can be streamlined, making the overall process significantly less burdensome and time consuming for industry, federal, state, local, and tribal (SLT) air quality authorities.

- **Saving/repurposing time**
- **Increasing data consistency and quality within and across programs for the same reporting facility**

Industry, SLTs, and EPA programs all have same version of data, or data for which differences are logical and easy to explain.

Shared Data

1) Industry reports *shared* data elements *once*

- Facility – e.g., company name, address
- Inputs to emissions estimation:
 - Activity data – e.g., heat content of coal, operating hours
 - Test data/emission factors – e.g., tons of VOC per BTU of coal
- Identical/related pollutants - e.g., toxics to TRI and NEI

2) *Federal and SLT staff* repurpose time *from*

- QA where CAERS can run automatic Quality Assurance (QA) checks,
- Data reconciliation of mismatched data between programs for the same facility **to** advanced QA and data analysis

Facility
- Name
- Address
- Type of activity



Unit
- Type (boiler, engine, kiln...)
- Design Capacity



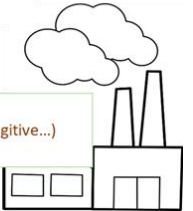
Process
- Type/Purpose (combustion, industrial, other...)
- Materials or chemicals used (fuel, coatings, paints and thinners,



Emissions Controls
- Type (Low NOx burner, Fabric Filter...)
- Efficiency



Release Point
- Type (stack, fugitive...)
- Dimensions



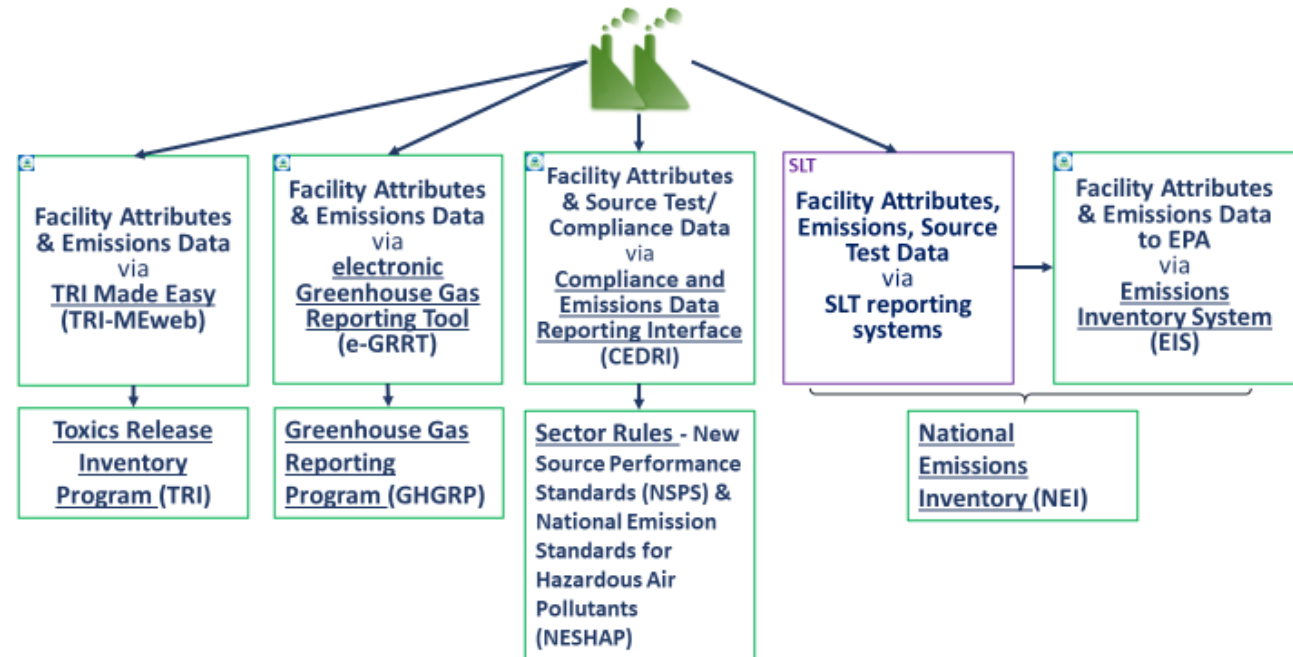
2. How do we get there?

Before CAERS

Industry could be having to report multiple times (potentially x 4 federal programs), and possible additional requirements for their SLT.

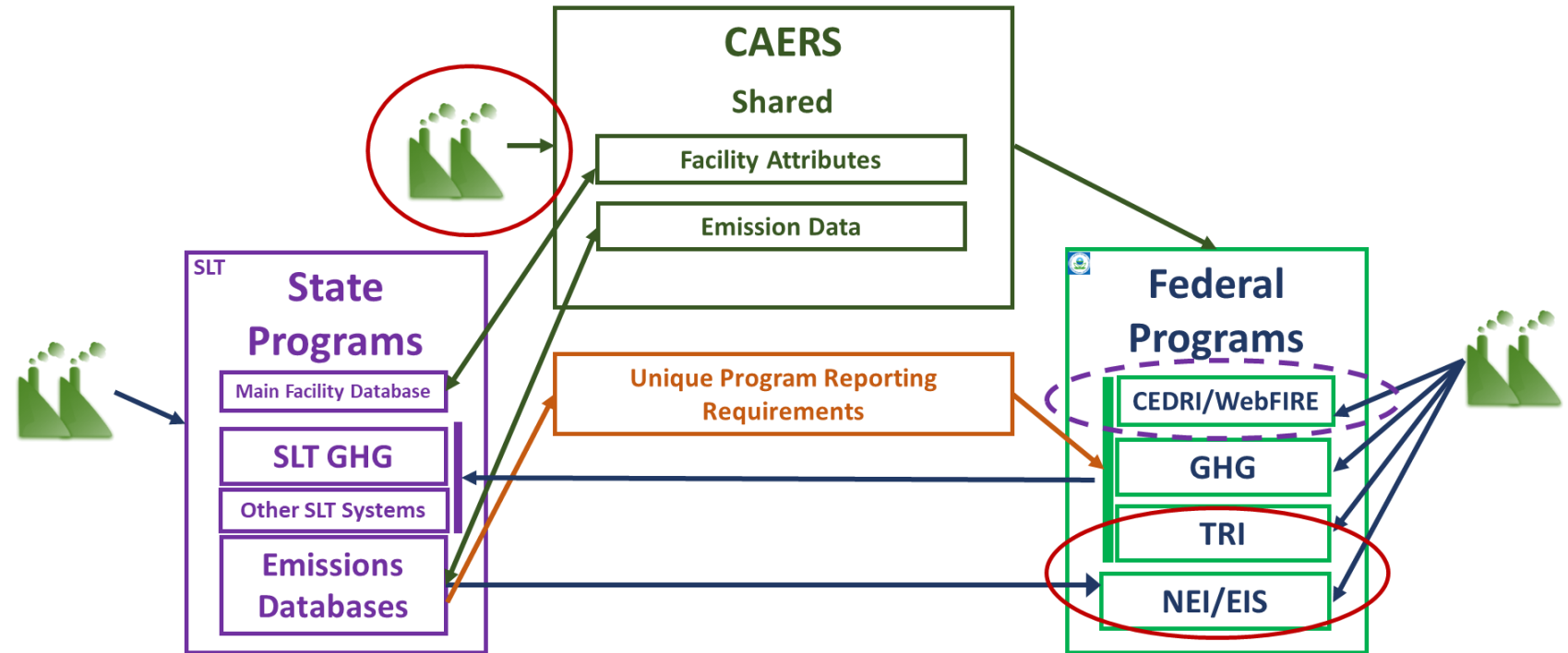
Shared data is entered over and over.

Air Emissions Reporting Before CAERS



After CAERS

Industry reports to the different programs but shared data is transferred from one system to another to avoid duplicate entries.



For example:

- CAERS adds up toxics shared with TRI at the facility level and makes them available to TRI-MEweb.
- Test data in ERT and CEDRI will be pulled into CAERS for NEI reporting “test data” calculation method.

What is CAERS?

- A system that currently allows SLTs to collect annual inventory data from their industry, review it, and send it to EIS. Shared data with TRI is sent to TRI-MEweb for a reporter to use it there optionally.
- CAERS was developed with the input of our [Product Design Team \(PDT\)](#) composed of SLTs and EPA staff – always looking for new SLTs to join.
 - A number of research projects have been conducted to gather requirements for the system, with work ongoing, e.g., NEI-TRI-SLT comparison.
 - The PDT meets every two weeks to discuss CAERS Updates as well as to gather new information to build out additional functionality.
 - Agile development means we apply lessons learned as we develop avoiding huge/costly errors.

Highlights of CAERS Features - Industry



- Previous Year Data Prepopulates Current Inventory Year Report
- Four Options for Data Entry:
 - User Interface (UI)
 - Bulk Entry via UI
 - Bulk Upload:
 - JSON
 - Excel Template
- File Attachments
- Report History & Log
- Report Summary Download
- Calculation and Aggregation of Toxics Air Emissions by Stack and Fugitive for TRI-MEweb
- QA Checks before submission

CAERS Industry Reporting

Combined Air Emissions Reporting System
NEI Certifier - JULIAGAMAS [Logout](#)

You are in the CAERS test environment. Data shown here is for illustration purposes, and does not represent a real report.

My Facilities > Emissions Reports > 2022 Emissions Report

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Agency ID: 99999999
 Facility Inc.
 123 Main Street
 Mytown, GA 12345
 2022 Emissions Report
 Agency: GADNR

[Report Summary](#) <

[Report History](#)

[Annual Report Quality Checks](#)

[Report Creation Log](#)

[Data Bulk Entry](#)

▼ [Facility Inventory](#)

- Facility Information
- Emissions Units
- Release Points
- Control Devices
- Control Paths

▼ [Emissions Inventory](#)

- ▶ Boiler
- ▶ boiler2

Report Facility & Emissions Information
Perform Quality Checks
Submit to SLT Authority
Approved by SLT Authority

Report Summary

Pollutant	Type	Fugitive Amount	Stack Amount	Units of Measure	2022 Reported Emissions	Previous Year Reported Emissions	Previous Submittal Year
Carbon Monoxide	CAP	0	0	Tons	0	None Reported	
Nitrogen Oxides	CAP	0.15	2.85	Tons	3	3	2021
PM10 Filterable	CAP	0.105	2.57	Tons	2.675	2.1	2021
PM2.5 Filterable	CAP	0.1	1.9	Tons	2	2	2021
Volatile Organic Compounds	CAP	0.025	0.475	Tons	0.5	0.5	2021
Total Emissions (Tons)	--	--	--	--	8.175	7.6	--

Download Report Summary
Download Process Emissions Summary

Preparer/NEI Certifier Attachments

Date	Role	User Name	Comments	Attachments
3/1/23	NEI Certifier	Maria Geonczy		2022-opt-out-form_annual SAS.xlsx

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Highlight of CAERS Features - SLTs



- Customization (e.g., GADNR Opt-In, DC Monthly Reporting)
- 300+ critical error and warning QA checks (EIS and State-requested, some customized to specific SLT needs)
- SLT Data Retrieval via Application Programming Interface (API)
- SLT-only editable fields as needed
- Non-Point Fuel Subtraction Report (ICI Template Option A)
- Ability to communicate via email with facilities (by type, reporting status, and preparer/certifier roles)
- SLT-specific emission factors via compendium
- More enhancements forthcoming in response to user feedback

CAERS SLT Reviewer

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[Statistics and Reports](#)
[Facility Management](#)
[Application Properties](#)

Annual Reports

Report Status: All
 Report Year: 2022
 Industry Sector: All Sectors
 Filter Table:

Report Status	Facility Name	Agency Facility ID	Operating Status	Industry Sector	Submittal Year	Last Submittal Year	Actions
In Progress			Operating	Mining, Quarrying, and Oil and Gas Extraction	2022	2021	Summary View Report Download Process Emissions Summary Download as Template
In Progress			Operating	Manufacturing	2022	2017	Summary View Report Download Process Emissions Summary Download as Template
In Progress			Operating	Administrative and Support and Waste Management and Remediation Services	2022	2021	Summary View Report Download Process Emissions Summary Download as Template
Not Started			Operating	Manufacturing	2022	2018	
Not Started			Operating	Manufacturing	2022	2020	
Not Started			Operating	Manufacturing	2022	2021	

2022 Report Submission Statuses

- 302 All ⌵
- 264 Not Started ⌵
- 33 In Progress ⌵
- 1 Reviewed and Returned ⌵
- 2 Opt-Out - Pending Review ⌵
- 0 Pending Review
- 2 Advanced QA ⌵
- 0 Opt-Out - Approved
- 0 Approved

Cost of Using CAERS

- Funding

- CAERS is free, users need:
 - Recent web browser (e.g., Chrome, Firefox),
 - Recent version of excel
 - JSON coding capability if using JSON upload
- SLTs:
 - Customizations can be done by request to EPA
 - Can obtain funding via [Exchange Network Grants](#)

- Time

- Learning curve while adapting to a new system – especially first year
 - SLT and industry learns what type of issues their data may have (duplicates from relabeling IDs, missing data, data errors or incorrect entry clean-up) that will be corrected once in CAERS.
- Need an SLT POC to work with EPA
 - Bring your data into CAERS test
 - Provide input on any QA checks needed
 - Work through CROMERR process



Is The Use of CAERS Mandatory?

CAERS is ***not*** mandatory, ***nor will it be mandatory*** with the new AERR. SLTs can:

- 1) Use CAERS both for industry reporting, QA, and submission to EIS.
 - Manually download data from CAERs for advanced QA using your own tools.
 - Use API to retrieve data automatically into your system to do advanced QA in your own tools/system.
- 2) Use CAERS to send data to from your system so it may share data with other EPA systems.
- 3) Choose not to use CAERS and continue sending data directly to EIS.

New AERR for SLTs Not Using CAERS

- Can use own system to collect HAPs and send CAPs and HAPs to EIS
- Can use own system to collect CAPs, but if not sending HAPS to EPA, then your facilities will submit their HAPs to CAERS separately - industry would have to report separately to SLT system and CAERS under this scenario, & AERR proposal discourages this.

Either way,...

help us make CAERS a system that is useful to you and your facilities by providing feedback on what you'd need to see in CAERS to adopt it.

Current CAERS SLT Users

State/Local/Tribe	PDT Participation	CAERS Adoption Stage
Arizona	User	12 pilot facilities in 2023 and testing APIs before full onboarding
District of Columbia	User	CAERS V2 since 2021
Georgia	User	MVP pilot since 2019
Idaho	User	CAERS V4 since 2023
Louisiana	PDT Member	Test account only
Indiana	Non-PDT member	Test account only
Maine	User, PDT Co-Chair	CAERS V4 since 2023
Massachusetts	Former PDT Co-chair	Test account only
Minnesota	PDT member	Test account only
Mississippi	Future user	CROMERR process, Onboarding for 2024
Montana	Future user	Test account only
New Jersey	Non-PDT member	Test account only
New York	Non-PDT member	Test account only
Pima, Arizona	User	CAERS V2 since 2021
Rhode Island	User	CAERS V3 since 2022

Future Steps for CAERS

- Added SLT-specific pollutants
- JSON Upload
- Automatic EPA emission factors update using [WebFIRE webservice](#).
- Enhance current basic workflow with TRI to provide detailed information to the TRI reporter about how data from CAERS was generated.
- Facility inventory alignment with CEDRI
- SLT requested enhancements (ongoing): UI improvements, additional QA checks, SLT-specific codes/data fields

Thank You for Your Attention

Questions?

Where to get more information: [CAER Website](#) with links to Trainings as well as resources for SLTs.