

E-Enterprise for the Environment Combined Air Emissions Reporting (CAER)

Project Overview

Joe Mangino
U.S. EPA, Office of Air Quality Planning and Standards

Michael Burton
Arizona Department of Environmental Quality

August 16, 2017

“Those who dream by day are cognizant of many things which escape those who dream only by night”

Edgar Allan Poe

Overview

- CAER project purpose and goals
- E-Enterprise principles applied
- Key challenges and concerns
- Previous Project Results:
 - Five “Short Term Win” enabling projects completed in 2016
 - “Quick Start” event in fall 2016
- Current and Future Steps
 - CAER Implementation Plan
 - Product Design Team Projects
- Contacts

CAER is an E-Enterprise Project

- E-Enterprise for the Environment is *jointly* governed by state/local/tribes (SLTs) and the EPA to collaboratively modernize business processes:
 - To improve **environmental results**
 - To **reduce burden** to the regulated community
 - To enhance services **to the regulated community** and **the public** by making government more efficient and effective
- Key E-Enterprise values integrated into all aspects of the project
 - Streamlining of processes
 - Modernization of business practices
 - Trust and accessibility to regulated community

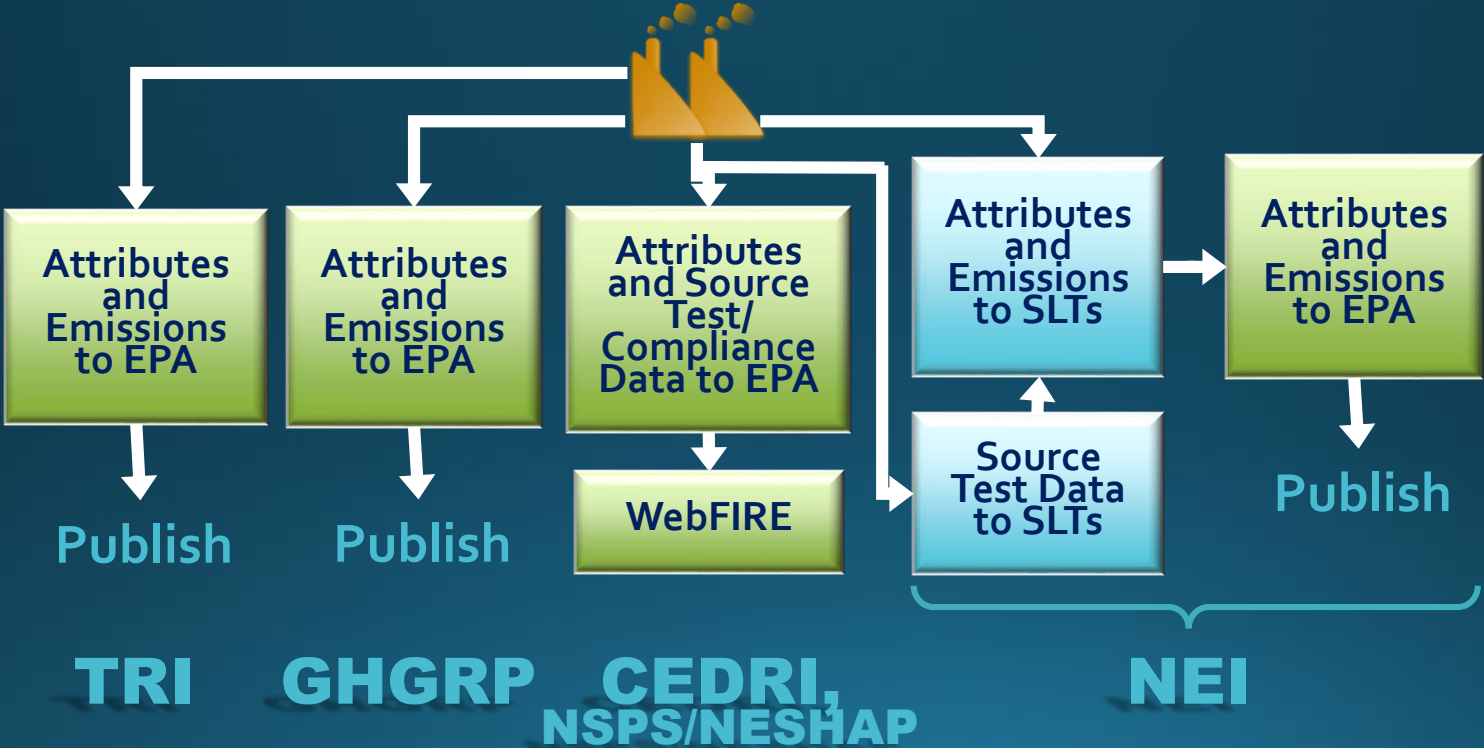
CAER Project Goals

- **Basic purpose:**
 - To consolidate emissions reporting activities through modern data sharing technologies and streamlined program collaboration
- **Expected benefits would include:**
 - **Industry:** Reduced reporting burden for industry by avoiding duplicative efforts across different programs and improved reporter experience through integrated electronic reporting and shared services
 - **Co-regulators:** Support timely decision making and analyses with more consistent, accessible, and higher quality emissions data
 - **Public:** Improvements to the availability, timeliness and transparency of data; also, higher quality and consistent data for various end users

CAER Basics

- Focuses on point sources under four major air reporting programs:
 - Toxics Release Inventory (TRI)
 - Greenhouse Gas Reporting Program (GHGRP)
 - Compliance and Emissions Data Reporting Interface (CEDRI)
 - National Emissions Inventory (NEI)
- Need to address different pollutants, facility definitions, data resolution across programs
- Focus on *emissions* reporting (not facility attributes)
- Look at process improvements first, not regulations
- Use information technology to help, where appropriate

Air Emissions Reporting "As is" State



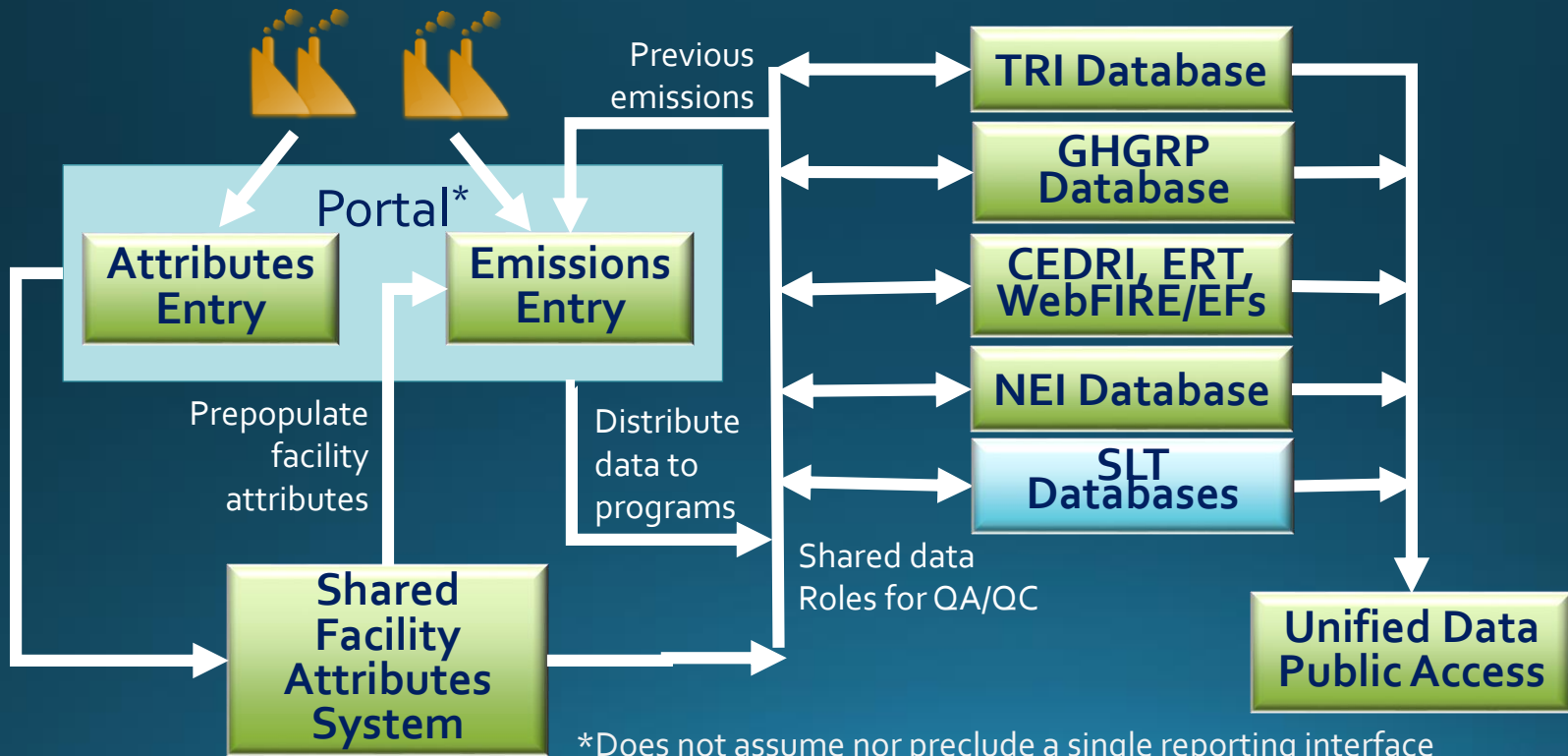
Example Integration of E-Enterprise Values in CAER Project

- Early engagement
 - Lean event held with SLT and industry participants
 - Return on investment analysis conducted
 - 18F product strategy workshop
 - Early collaboration establishes trust and accessibility for affected community
- Collaborative approach
 - Joint identification of issues/problems and potential solutions
 - Short-term SLT/EPA project teams established around starting point priority issues/needs
 - Collaboration on longer term implementation plan
 - Creates an embedded value proposition

Example Integration of E-Enterprise Values in CAER Project

- Modern business and Information Technology (IT) practices
 - Significant engagement between IT specialists and air program staff
 - Continuous feedback from 'agile' development processes results in prioritizing CAER-related activities and revisions to products
- Continued input received via:
 - Regular public webinars (typical audience >140 total; split around 50/50 for SLT/industry)
 - Dedicated mail server
 - Coordination meetings with SLTs and EPA program staff
 - Industry information forums
 - Weekly product design team meetings that includes SLT and EPA program members

CAER Proposed Future State for Emissions Reporting



Key Challenges and Concerns

- Knowledge base differentiation/diversity across implementing community (e.g., air policy staff v. IT staff)
- Looking beyond program silos
- Everyone has their “regular” jobs
- Potential for expanding scope
- SLT and industry concerns:
 - Trust by SLT and industry that EPA will listen and incorporate feedback
 - Accommodating diversity in state requirements and reporting systems
 - Accommodating diversity in industry data compilation/submittal processes
 - Concerns about requirements changes or new additions
 - Concerns about IT costs to implement

“Short Term Win” Projects

The EPA-SLT CAER ‘Short Term Win’ teams completed five enabling projects in 2016:

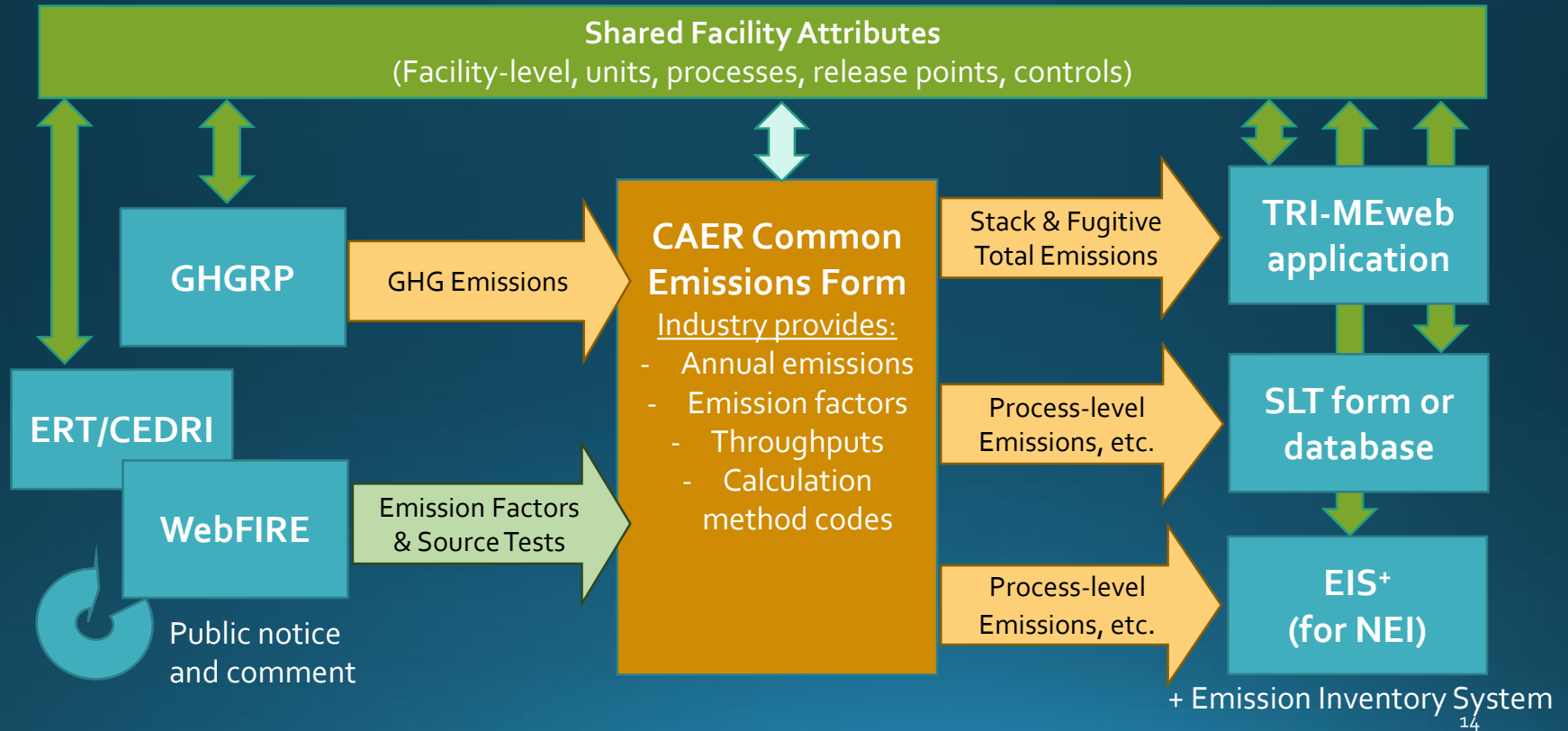
- CAER implementation plan
- Data dictionary and harmonization of code tables
- Web-based service for Source Classification Codes (SCCs)
- WebFIRE search improvements and consolidated export of industry test data
- Identify and eliminate root causes of EPA augmentation for the NEI

“Quick Start” Event

- Created a prototype during a 5-day challenge event in Sept. 2016
 - EPA members from each of the 4 CAER emissions programs and Office of Environmental Information (OEI)
 - State members from GA, MS, SC, and WY plus EPA and state observers
- Focused on *emissions* sharing
 - Assumed sharing of facility attributes was in place via Facility Team
- Focused on NEI-SLT and NEI-TRI (two highest return on investments), with connections to GHGRP and CEDRI/WebFIRE
- Explored the idea of a “common emissions form”
- Explored the use of the Be Informed® software package for “model-driven design”
- Recorded prototyping results

CAER Common Form

(conceptual illustration)



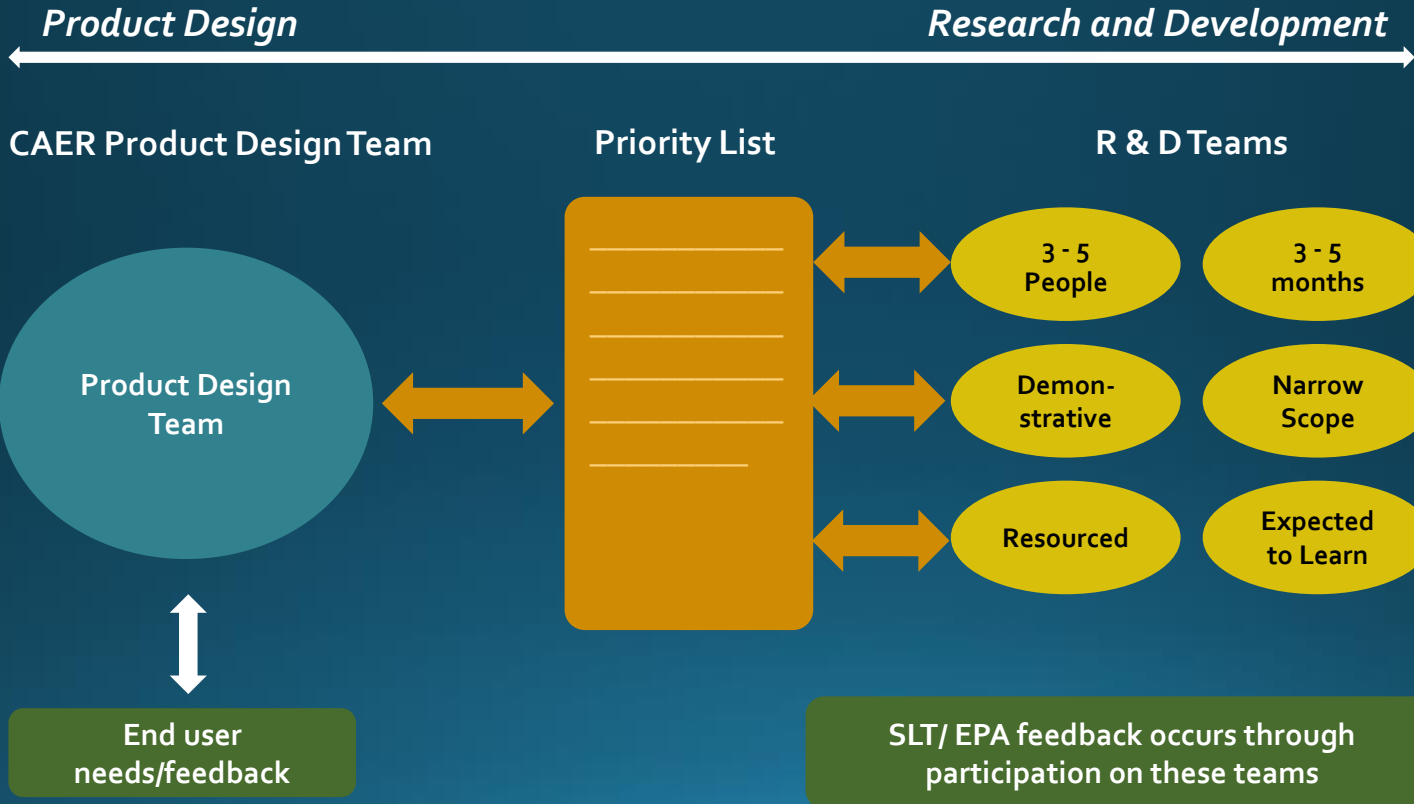
Current and Future Steps

- CAER Implementation plan lays out multi-year process to implement CAER
- Initial phase of the Implementation Plan has started
 - Product Design Team (PDT) formed late 2016
 - “First Round” R&D enabling projects conducted in first half of 2017
 - “Second Round” R&D projects to be defined and scoped out in Fall 2017
 - Potential full scale pilot project scope being defined with goals of a 2018 pilot
 - Software evaluations and procurement options being investigated
- Successive phases dependent on results of initial R&D projects, availability of resources, overcoming any identified constraints
- Utilizing and considering results from other CAER-related projects
 - Federal Registry Service (FRS) data model revision
 - E-Enterprise Facility Integrated Planning Team (IPT)
 - FRS/Risk and Technology Review (RTR) project

Product Design Team

- 12 member team made up of SLTs and EPA program staff
- Includes observers from National Association of Clean Air Agencies (NACAA), Association of Air Pollution Control Agencies (AAPCA), and E-Enterprise Program
- PDT meeting regularly since Oct. 2016 to design and manage 'first round' of R&D projects
 - Key consideration is that the projects support the overall CAER project objectives
 - General scope and product defined for each project

CAER Product Development Structure



PDT “First Round” R&D Projects

- **QA/QC***
 - Identification and evaluation of a common set of emissions data QA/QC procedures for shared emission reporting
- **GHG Emissions Mapping Study***
 - Pilot study to map emission data in the EPA’s national GHGRP to example state greenhouse gas reporting program(s)
- **TRI/NEI/SLT Program Crosswalk***
 - Research consistency and possible workflows for sharing of emissions data between TRI, SLTs and NEI -- Phase 1
- **Emissions Data Design**
 - Establish and document a data model with basic core set of emissions-related data elements to support reporting through a CEF
- **Source Classification Codes (SCCs)/Emission Factors***
 - Scoping study for identifying problems and solutions with SCCs and WebFIRE that will meet SLT, NEI, National Air Toxics Assessment (NATA), and CEDRI requirements under the CAER project

* Separate presentations covering these projects follow this overview of CAER

Emissions Data Model Project

- Purpose:
 - Establish and document an applicable data model with basic core set of emissions-related data elements to support a common emission form (CEF) reporting structure in shared emissions platform
- Status:
 - Team compiling possible data elements and definitions
 - SLT-led survey completed June 2017
 - 47 agency responses
 - Input on data elements and characteristics of system structure and function
 - First phase project results and recommendations for next steps anticipated by end of Aug. 2017
 - Second phase will support development of CEF for a potential pilot project

Contact Points

- Participate in future CAER PDT or R & D teams
 - Contacts: Kelly Poole at kpoole@ecos.org , Michael Burton at Burton.Michael@azdeq.gov, Mark Wert at mark.wert@state.ma.us, and Joe Mangino at mangino.joseph@epa.gov
- Join the CAER listserv; send email to: join-caer@lists.epa.gov
- Send comments and user stories to: CAER@epa.gov
 - Individual comments only (group comments cannot be used)
- CAER public website:
 - <https://www.epa.gov/e-enterprise/e-enterprise-combined-air-emissions-reporting-caer>

Team and Supporters

EPA (alphabetically)

- Kong Chiu
 - Alice Chow
 - Mike Ciolek
 - Brian Cook
 - Sally Dombrowski
 - Josh Drukenbrod
 - Ron Evans
 - Julia Gamas
 - Lauren Gordon
 - John Harman
 - Marc Houyoux (co-chair)
 - Matthew Kelly
 - Theresa Lowe
 - Joe Mangino
 - Jonathan Miller
 - Juan Parra
 - Kara Koehrn
 - Ketan Patel
 - Ron Ryan
 - Bob Schell
 - Madeleine Strum
 - John Wakefield
 - Bob Wayland
- Supporting Roles (alphabetically)**
- Tina Chen, EPA
 - Beth Graves, ECOS
 - Shana Harbour, EPA
 - Kelly Poole, ECOS
 - Tobias Schroeder, EPA

State/local/tribes (by agency)

- Nattinee Nipataruedi, AK
- Michael Burton, AZ
- Steven Potter, CT
- Carla Bedenbaugh, GA
- Jing Wang, GA
- Jordan Garfinkle, MA
- Mark Wert, MA
- Dennis McGeen, MI
- Tom Shanley, MI
- Azra Kovacevic, MN
- Chun-Yi Wu, MN
- Deborah Boleware, MS
- Tammy Manning, NC
- Gary Saunders, NC
- Joshua Kalfas, OK
- Michelle Horn, OK
- Elizabeth Elbel, OR
- Stephanie Summers, OR
- Chad Wilbanks, SC
- David McClard, SC
- Paul Mairose, SWCAA
- Erin Chancellor, TX
- Kathy Pendleton, TX
- Bryan Shaw, TX (co-chair)
- Jeff Merrell, VT
- Sue Hines, VA
- Ben Way, WY