**Descriptions of CAER PDT “Second Round” R&D Projects**

***R&D Project #6:***  *Research consistency and possible workflows for sharing of emissions data between TRI, SLTs and NEI -- Phase 2*

***Milestone 1 Task Ar*ea(s)**: Defining business processes and operations

***Description of Project Scope****:*

1. Issues and solutions related to consistency of emissions data between SLT/NEI and TRI (i.e. issues with aggregation of emissions data to TRI reporting levels):
   1. Investigate and identify different calculation methods and control/treatment codes used in NEI and TRI, identify possible ways that methods and controls could be harmonized, and harmonize them where possible.
   2. It has been observed that many facilities report different emissions for the same pollutant to both NEI and TRI; facilities may use a rough estimation in TRI but a more accurate and detailed estimation to NEI.
      1. Analyze differences between NEI and TRI (e.g., does it depend on type of industry, air toxics vs criteria, or by SLT?)
      2. Conduct a case studies at a state-level to identify reasons facilities reported differently to states versus TRI
   3. How could the common form help TRI, NEI, and SLTs in data collection?
2. Develop guidance and training for SLT to use TRI data in their own emission inventory systems. Most states do not use TRI; this guidance is intended for them and also the few states that use TRI. It will use, as a starting point, the procedures implemented by states who do use TRI (as described in phase I) and build on them and improve on them. Improvements will include use of the harmonized calculation method codes and control codes (treatment methods) from item 1a. Moreover, it will specify procedures and approaches to allocate TRI emissions at a facility-level to a process-level, or vice versa. Those procedures will be implemented in the future CAER environment. 
   1. Criteria for SLTs using TRI data (set conditions for using TRI data)
   2. Step-by-step procedures on how to apportion TRI data to process-level, including SCC determination.
   3. Guidance on assigning release point types and parameters including a description of what types of releases constitute TRI fugitives.

***Project Tasks and Deliverables:***

* Investigate and begin harmonizing reporting guidance used in NEI and TRI (e.g. harmonize emission calculation methods for SLT/NEI and TRI, and harmonize TRI treatment codes with NEI control codes).
* Pollutant-specific case study investigating the reason for the differences between NEI and TRI
* State case study investigating the reason for the differences between state EI (or NEI) and TRI
* Training presentation on how SLT could use TRI data in their inventory systems
* If there is time:
  + Create a draft database that reflects required and optional pollutants for SLT reporting systems.

***R&D Project #7***: *Documentation of SLT emissions data needs to support creation of a common emissions form (CEF) that can be used by SLT emission reporting programs/systems – Phase 2*

***Milestone 1 Task Area(s)***: Define data model/functionality and prepare for pilot

***Description of Project Scope:***

1. *Data solutions and documentation* – The data survey highlighted many individual issues that need to be investigated, resolved, and documented to specify a CEF. The effort to resolve any one of these issues is modest but together represent a significant amount of work. The tasks range from specifying field size/type to describing calculation functionality for annual and ozone season emissions. This task includes both documenting SLT-specific data identified in the Phase 1 survey and identifying differences in SLT and NEI for fields in common (e.g., field size). This task also includes identifying fields/features that will need to have some mechanism for SLT control for filers in their individual states (i.e. that would allow SLT to opt-in/out of a particular feature and control the flow of data after it is collected by the CEF) and the nature of that control. This task may require some additional survey work (e.g., to learn more about calculation methods). Part of this task will include identifying issues that may need to be postponed for later consideration (i.e., might be too time-consuming or undefined to be addressed in time for a pilot). These issues will take some time and effort to work out, but doing so will generate critical specifications for filling the gap between SLT systems and NEI. These are the raw materials for building a CEF and completing this task is on the critical path to a pilot.

2. *Targeted pre-pilot assessment* – An original Phase 2 concept was to assess the specific needs of a potential pilot SLT in preparation for the pilot project. This should be started now IF we can identify that SLT. This applies the results of part #1 above to a real test case. The project investigates the specific needs of the pilot state and compares them against the CEF as documented thus far. These needs will be a subset of the needs for a final CEF. The product will identify any additional specifications and documentation needed to ensure the CEF will successfully meet the needs of the pilot SLT (including the handling of facility data). The objective is to specify a minimally viable product targeted at the pilot state.

3. *Workplan for development of a CEF* – Collaborate with the EPA IT lead (availability pending resource approval) to develop a checklist of the documentation needed to create the CEF. The items in this list will be those necessary for a pilot and will aid in the management of the pilot development process. The goal of this next step is to (1) assess the gap between what specifications have been developed or are underway and what is needed to specify a system that is fully functional for the pilot SLT and (2) specify what work is needed to fill that gap. This task must inherently address SLT/NEI needs for collecting facility data. The results would be used to organize a procurement process. The work should also document the specifications needed for a more broadly usable CEF where they are identified during the work (although the full CEF requirements will result from a longer iterative agile process). The objective of this project is inherently limited because the final requirements of the pilot itself will be subject to an agile development approach. However, the point of this phase of the project is to ensure that, prior to expenditure of funds on a pilot contractor, the process and documentation needed to make the work of such a contractor efficient has been substantially completed.

***Project Deliverables:***

* Database of data element specifications for use in CEF.
* Assessment report on specific needs as the relate to a specific pilot state compared to the data elements as compiled in first phase and step 1 of second phase.
* A workplan with CEF specifications and requirements that could be used for IT vendor procurement for developing a CEF prototype for use in pilot.

***R&D Project # 8****: Analysis of National SLT GHG emissions data needs and cross-walk to EPA’s GHG Reporting Rule requirements – Phase 2*

***Milestone 1 Task Area(s)****:*Defining business processes and operations

***Description of Project Scope****:*

1. Collect and review existing GHG reporting requirements for SLT’s emission inventory programs and permit requirements (e.g. Title V). Develop a state survey form that will provide information for the following:
   * Identify states with GHGRP programs
     1. Mandatory, voluntary, or no reporting
   * If there is a GHGRP program
     1. Purpose & use
     2. Pollutants covered
     3. Level of details for reporting
     4. Calculation methods
     5. Where and how it maps to Part 98 (EPA GHGRP)
2. Conduct the survey nationwide for all states.
3. Based on information from the survey, and information on the federal GHGRP, compile a summary report that will:
   * Identify which SLT’s have mandatory, voluntary or some combination of GHG emission reporting requirements
   * Identify relevant SLT regulatory references and sources of GHG emissions calculation methodologies
   * Identify which GHGs are included, and whether the expected emissions are mass-based and/or CO2-equivalent based
   * Include any activity/throughput data that are collected to support GHG emissions calculations and whether the SLTs label as CBI
   * Identify level of reporting (i.e. corporate, facility, unit, process etc.)
   * Identify any threshold requirements (including source category specific thresholds) for reporting emissions under the SLT program
   * Identify timelines for GHG emissions reporting
   * Identify the uses of GHG emissions data for the SLT programs—e.g., emissions fees, state-level inventory purposes, etc.
   * Compare state vs federal GHG reporting data requirements and methods
4. Based on the Phase 1 PDT GHG Project, map one or more additional source category sectors between State and federal GHGRP, using results from the survey to identify and recruit appropriate state partners. Include results in item 3. Summary report above.

***Project Deliverables:***

* Summary report of the state survey, including comparisons with EPA reporting requirements. Final report would include commonalities and differences across states and Federal programs and identify potential changes necessary for common form reporting/usage. Detailed tabulated results would also be included, in a format to be decided by the team.
* Identification of future work for the pilot study.

***R&D Project # 9****: Study of SLT and EPA program business cases and practices for handling confidential business information (CBI) as it relates to emission reporting information*

***Milestone 1 Task Area(s)****:*Defining business processes and operations, Define business rules

***Description of Project Scope****:*

If the common emissions form (CEF) is to be used by certain SLTs (either as a full replacement of or a supplement to their current emissions data collection mechanism), these SLT agencies may or may not have a need to collect information that they classify as confidential. It is therefore possible that the CEF will interact with data that an SLT would consider CBI. Also, the definition of what exactly constitutes CBI may differ between SLTs and across SLT and EPA programs. In order to design and implement the CEF, the PDT needs to fully understand what exactly defines CBI data (in the context of emissions reporting), the role CBI data plays in meeting SLT needs, and the possible limitation and constraints CBI data imposes on the CEF. The project steps are initially envisioned as follows:

1. A workgroup will study the phase 1 data model survey results in detail and follow-up with particular SLTs to define the practices and business cases for handling CBI.
2. For each SLT that handles CBI information in their emission inventory reports, collect the following information:
   1. Language of rule/regulation that defines what constitutes confidential information
   2. List of data items that can be classified as confidential
   3. Are certain data items always considered confidential or do facilities need to specifically claim confidentiality?
   4. SLT procedure for handling confidential data
      1. Do they store confidential data separately? Or do they label/tag it as confidential?
      2. When a public request is made for emissions data, how do they handle removing/redacting the confidential items?
3. Prepare summary report of collected information. This report should include a draft procedure for how a common form would handle confidential information.

***Project Deliverables:***

* Develop/document current CBI business cases and practices in use at SLT and EPA programs
* Document draft specifications for a common solution, and recommend the path forward for addressing CBI as part of the CEF approach. This could possibly take the form of draft procedures and/or options for how CAER could address the need for CBI to be used but not collected by a CEF.

***R&D Project # 10****: Development of a State-Local-Tribal Emission Factors Compendium*

***Milestone 1 Task Area(s)****:  Supporting Services and Applications*  

***Description of Project Scope****:*

1. Begin development of a compendium of State-Local-Tribal (SLT) emission factors (EF) that states could share and use for their emissions development needs. Data will be compiled from EF data provided by SLTs from the previous SCC/EF project’s Phase I Survey, and database development will be iterative.
2. Develop compendium business rules and guidelines, including: data elements to be included (level of detail, data sources and documentation, state-specific parameters); database maintenance (who contributes and how), electronic venue for the repository of the database for potential leveraging via web services; and limits on EPA involvement in database maintenance and data vetting.
3. Explore if and how the compendium can be used with the common emissions form (CEF). The CEF is a conceptual design under development in the CAER project, which would provide reporters tools to share data across reporting programs, including EF data. Compendium data could be one input database to the CEF’s menu of EF. Additional business rules on compendium use with the CEF (e.g. state controls over EF presented to facilities) will be developed.
4. Explore venues for compendium updates and maintenance, including automatic EF data retrieval from SLT electronic reporting systems, and even potentially sending new EF data entered into the CEF to the compendium automatically.

***Project Deliverables:***

* Draft compendium of state emission factors (i.e. given the scope and time of this project, not all states or all factors available from the survey may be included in this first stage).
* Draft guidelines and business rules for the compendium entries and input information, CEF EF menu creation and general data retrieval and usage.
* Pilot study design for a next phase to allow a state to use compendium EF data in their existing system, and for the future application to a CEF approach under CAER. The long term goal being to develop CEF capability to retrieve EF information from many databases.