

Chapter 2. Creating an Initial Emissions Inventory

This chapter explains the EI process, including how to prepare an EI for the first time, and defines key terms associated with this process. For any unfamiliar term or concept, please consult the Glossary, or contact the EAS for assistance.

The Emissions Inventory Process

TCEQ annually collects statewide data on emissions from industries that meet the EI reporting requirements and stores the data in its STARS database. The emissions data is collected in a standard format to ensure consistency among types of data collected and to facilitate data upload into, and retrieval from, STARS. The data collected identify the company, site, point of contact, emission source, abatement device, emission point, and path emissions.

Every EI is currently identified with and indexed by a site-specific, air-regulated entity reference number (RN), a unique identification number assigned by TCEQ. A site's air RN will also uniquely identify its EI.

Requirements for Submitting an Emissions Inventory

TCEQ requires emissions inventories from regulated entities that satisfy the applicability requirements (also called *reporting requirements*), as set forth in 30 TAC Section 101.10.

The reporting requirements for emissions inventories will vary depending on:

- site location
- the type and quantity of emissions

The *attainment status* of the county where the regulated entity is located will impact the EI reporting requirements that concern both emissions type and quantity. Specifically, the county's attainment status for a particular pollutant will affect both the **potential** and **actual annual** emissions level reporting requirements for this pollutant. Thus, a regulated entity located in a county designated as nonattainment for ozone will be subject to more stringent annual emissions level reporting requirements for ozone-precursor pollutants than a regulated entity located in a county designated as attainment for ozone.

The term *actual emission* is defined in 30 TAC Section 101.10 as the actual rate of emissions of a pollutant from an emissions unit as it enters the atmosphere. *Potential emissions* from a specific unit are referred to as its potential to emit—as defined by 30 TAC Section 116.12 (the definition is also available in the Glossary). Note that, while both actual and potential emissions are defined above in relation to an emissions-generating source or unit, the EI reporting requirements are based on site-wide actual annual (routine) and potential emissions.

The owner or operator of the regulated entity must determine the attainment status of the county where the site is located. The map located on the [EAS webpage](#) contains a table that provides the EI reporting requirements by listing the actual annual and potential emissions levels for all counties in Texas. For more information, consult 30 TAC Section 101.10.

Note: The map and associated table are intended to clarify reporting requirements and do not supersede or replace 30 TAC Section 101.10. To determine both the actual annual and potential emissions level reporting requirements for a specific county, consult 30 TAC Section 101.10. For major-source thresholds please consult 30 TAC Section 116.12.

The owner or operator of a regulated entity must identify every emission source present at the site. For additional information consult both this chapter and “Identifying Emission Sources” in Chapter 3. After identifying all emission sources at the site, the owner or operator must determine each source’s actual annual and potential emissions. To determine the quantity and type of actual annual and potential emissions, consult Chapter 4. Finally, the total actual annual emissions, as well as the potential emissions, for the entire site must be calculated.

Based on the reporting requirements associated with the site’s location and the actual annual and potential emissions, the owner or operator must determine whether submission of an EI is required. If so, the owner or operator must report the actual emissions. Representing sources within the EI is termed *emissions inventory structure* and it is explained in the following section.

Understanding Emissions Inventory Structure

The EI is used to report the quantities of emissions at a site. This information on emissions, which is loaded into STARS, is not just associated with a site’s air RN, but is specifically tied to individual sources. Associating emissions to a particular source in this manner assures the quality of data and enhances statewide emissions modeling.

The way the EI ties emissions data to particular emission sources is called *structure*. The key concepts associated with structure are discussed in the following sections.

Facilities and Emission Points

In EI terminology, a source capable of generating emissions (for example, an engine or a sandblasting area) is called a *facility*. Thus, *facility* and *emission source*, or “source” for short, are synonymous.

The actual physical location where the emissions enter the atmosphere (for example, an engine stack or a sandblasting yard) is called an emission point. Emission points are currently classified into three different types:

1. *Stack*-type emission points, such as boiler stacks or building vents.
2. *Fugitive*-type emission points, such as sandblasting yards or marine loading areas.
3. *Flare*-type emission points that only include flares.

Thus, an emission point's type can range from a smaller, more precise location (such as a glycol still vent) to a larger, wider area (such as an outdoor lot where surface-coated metal pieces finish drying).

For EI purposes, a facility (emission source) must be linked to at least one emission point, and vice versa; this allows the inventory to capture the maximum amount of data about a source. For example, an internal combustion engine with one stack is represented as the facility and emission point, respectively.

The engine's burn type and design capacity will be captured in the facility data, and the stack height, diameter, exhaust exit velocity, and exhaust temperature will be captured in the emission point data.

Emission Paths

As stated in the previous section, a facility must be linked to at least one emission point. This association of one facility to one emission point is termed a *path*. A path essentially traces an air pollutant's origination, from its creation by the facility to its entrance into the atmosphere via the emission point. If a control device is involved, the path traces an air pollutant's origination, from its creation by the facility, to its abatement by the control device, to its entrance into the atmosphere via the emission point.

It is important to note that a path represents **one** facility linked to **one** emission point; in other words, a path traces **only one** route in a facility's emissions travel to reach the atmosphere. If one facility is linked to **more than one** emission point, then multiple paths exist. For example, if a paint booth has three exhaust vents, then three different paths exist, since there are three different routes the facility's (source's) emissions can travel to enter the atmosphere.

Thus, when actual emissions data are reported in the EI, the data will be associated with a path—in other words, the emissions data will be associated with the facility (emission source) that created the emissions, and the point where they entered the atmosphere. If a control device is involved, it will also be associated with the path.

The site's EI will consist of a collection of paths that will allow for the submission of detailed emissions data, as well as detailed facility and emission point attributes. These collective paths, facilities, emission points, and any associated control devices will form the *EI structure*.

These key elements of EI structure are important because they allow emissions data to be tied to specific sources. Chapter 3 discusses in detail how to establish the EI structure.