

Description of 2012 Unit-level Data Using the eGRID Methodology

The unit-level emissions and generation data derived using the eGRID methodology was relied upon for determining state-level totals ultimately used in the goal calculation. One notable difference is that published editions of eGRID match emissions and generation at the plant level, while the development of the state-level data matches emissions and generation at the unit level in order to filter out units that are not likely subject to the Rule's applicability criteria. Also, the state-level data for goal setting were limited to the following elements at the unit level: CO₂ emissions, nameplate capacity, net generation, state location, and information used to place the unit in each category. The data sources are from reports from units that submit data to the EPA under 40 CFR Part 75, and Energy Information Administration data from forms EIA-860 and EIA-923. The data were assembled at the unit level and were aggregated to the state-level generation totals, capacity totals, and emission rates for the following categories: coal steam, Oil Gas Steam (O/G steam), Natural Gas Combined Cycle (NGCC) and Simply Cycle Combustion Turbines (CTs), and Integrated Gasification Combined Cycle (IGCC). The year 2012 historical values for these categories were then modified for each state to derive the state goal emission rates as described in the main body of the Goal Computation TSD.

Industrial units that are not grid connected are excluded. Units for which fossil fuel was less than 10% of the heat input in year 2012 were also excluded.

For units that report to the EPA under 40 CFR Part 75, reported CO₂ emissions were used. These emissions are either determined from continuous emissions monitors that measure CO₂ concentration and stack gas volumetric flow or, for units that combust certain gaseous and liquid fuels, fuel flow meters and fuel testing as required under appendix D and E of 40 CFR Part 75.

For units that do not report to the EPA under 40 CFR Part 75, CO₂ emissions are calculated from fuel use reported in the EIA-923 and emission factors under EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks or The Climate Registry Default Emission Factors. If no unit level fuel use exists in the EIA-923 dataset and prime mover fuel data exists, and there is more than one unit at a plant that has the same prime mover (e.g. steam turbine, combustion turbine, etc.), then prime mover fuel level emissions are distributed to each generator in the prime mover proportionally by nameplate capacity. For most cases (where all units in the prime mover would likely be covered by the rule), this apportionment does not matter because emissions are summed to the state level. However, if there is a smaller unit in the prime mover that would not likely be covered by the rule, then this apportionment may not exactly match the amount of fuel actually burned and the associated emissions for each unit. Fuels categorized as "other" that could not be defined and assigned an emissions factor were excluded from this task.

Net generation is taken from EIA-923 data. If no unit-level net generation exists in the EIA-923 dataset and prime mover fuel data exists, and there are more than one unit at a plant that have the same prime mover (e.g. steam turbine, combustion turbine, etc.), then prime mover fuel level net generation is distributed to each generator in the prime mover proportionally by nameplate capacity.

Logic for determination of source CATEGORY:

CATEGORY	Category Name	Includes
COALST	Coal Steam	Coal is designated as primary fuel. Nameplate capacity 25 MW or greater or if heat input capacity is 250MMBtu/hr or greater
OGST	Oil Gas Steam	All steam units not in "Coal Steam" category that have oil or gas primary fuel. Nameplate capacity 25 MW or greater.
NGCC	Natural Gas Combined Cycle Units -Duct burners and heat recovery steam generators are included with combustion turbines that are 25 MW.	NG is primary fuel or if actual fuel use is >90% NG. Combustion turbine parts having nameplate capacity 25 MW or greater. Any associated duct burners and heat recovery steam generators are included.
SST	Simple Cycle Combustion Turbines – 25 MW	Nameplate capacity 25 MW or greater & 33% capacity factor & 219,000MWh
IGCC	IGCC	IGCCs at: Wabash, Polk, Edwardsport