

CEQA Significance Thresholds for GHGs - Questions and Answers

What is CO₂e?

CO₂e refers to Carbon Dioxide Equivalent, a measurement that expresses units of different greenhouse gases as equivalent to units of carbon dioxide in the ability to affect global warming.

Carbon dioxide (CO₂) is one of six widely accepted and frequently monitored greenhouse gases (GHGs) contributing to climate change. The other five common GHGs are nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and methane. Each of these has a specific global warming potential (GWP), a measurement of the quantity of heat that a substance can trap in the atmosphere over time, i.e. the substance's potential to contribute to global warming. (California Air Resources Board uses a 100-year time for calculating GWP). The base for the GWP measurement is CO₂, which is assigned a GWP of one. All other GHGs have a number higher than one representing a multiple of the GWP of CO₂. For example, the GWP of a given quantity of nitrous oxide over 100 years is 310, meaning it is 310 times more potent in affecting global warming than the equivalent quantity of CO₂. If a gram of nitrous oxide has a GWP of 310, then the CO₂e for this gram of nitrous oxide is 310 grams of CO₂.

Is Santa Barbara County Air Pollution Control District (District) required by CEQA to adopt a GHG threshold?

No, the District is not required to adopt a GHG threshold. The District proposes GHG thresholds for stationary sources of 10,000 MTCO₂e per year to provide a standard methodology for GHG impact analysis.

How are GHG impacts currently evaluated under CEQA?

As required by the March 2010 revisions to the CEQA Guidelines drafted and issued by California Natural Resources Agency, all projects that are subject to CEQA review must include an analysis of climate change/greenhouse gas impacts. This analysis must include a determination as to whether the project's impacts are significant and, if they are significant, must include mitigation. Currently, analysis of GHG impacts is conducted project by project with individual jurisdictions applying varying methods to assess impact significance under CEQA. A standard methodology for GHG impact analysis, as proposed here by the District, would provide uniformity across projects. This approach is consistent with the District's adoption of thresholds for criteria pollutants such as nitrogen oxides (NO_x) and reactive organic compounds (ROC) (District Environmental Review Guidelines, revised November, 2000).

Have other air districts adopted GHG thresholds? If so, when did they adopt them and what were the specific thresholds adopted?

Yes, other air districts have adopted thresholds. On December 5, 2008, South Coast Air Quality Management District (SCAQMD) adopted an interim threshold for stationary sources. Regulated sources that emit over 10,000 metric tons of CO₂ equivalent (MTCO₂e) per year are considered a significant impact under CEQA.

The Bay Area Air Quality Management District (BAAQMD) also adopted a 10,000 MTCO₂e per year threshold for stationary sources on June 2, 2010. Additionally, BAAQMD adopted a 1,100 MTCO₂e per year threshold for other land use projects.

What are the benefits of adopting a GHG threshold?

A threshold provides consistent analysis of GHG impacts, ensuring equal treatment of all applicants and project types. It provides certainty and the ability to forecast planning costs with greater accuracy. A threshold provides greater legal defensibility of a project's environmental analysis, which provides additional security to project approvals.

There are currently no statewide standards for GHG significance levels. There are risks inherent in the CEQA process when thresholds are not applied. The status quo does not provide industry with certainty in the permit review process and leaves projects legally vulnerable. Without standardized GHG significance thresholds, a project's environmental analysis may be challenged as inadequate at discretionary approval. Lead agency CEQA documents have been challenged, and in some cases rejected, due to inadequate GHG impact analysis.

A GHG threshold is consistent with the requirement of CEQA to limit potential impacts. There is also an established precedent for this method. This type of threshold approach is similar to the approach that is currently used for determining significance for ozone precursors and particulate matter.

How are GHG thresholds applied by lead agencies?

When serving as a CEQA lead agency, the District would apply the GHG threshold to stationary source projects that require District permits. By adopting GHG thresholds, the District as a lead agency could assess significance and mitigate adverse impacts from GHG emissions from new projects in a fair, objective, and legally defensible manner. As a responsible agency under CEQA, District staff regularly comments on environmental analysis for discretionary decisions requiring CEQA review (EIRs and Negative Declarations), and supports the use of thresholds for determining significance of impacts.

A District-adopted GHG threshold could be used by lead agencies other than the District, such as Santa Barbara County. But other CEQA lead agencies are not required to use District thresholds. Land use decisions are generally outside the District's regulatory authority, and county jurisdictions may choose to apply other thresholds of significance for GHGs.

What emissions data was analyzed to support the 10,000 MTCO₂e threshold?

The District analyzed GHG (CO₂e) emissions from District-permitted combustion sources, looking at both actual and permitted emissions at a stationary source level. In addition, we assessed permitted GHG emissions from proposed combustion source projects over a five year period. Only data for combustion sources was used in the District threshold analysis because the majority of GHG-emitting stationary sources are combustion sources. Our analysis leads to the conclusion that the proposed 10,000 metric tons threshold will capture a small percentage of sources, but result in capturing a substantial amount of new GHG emissions.

Our analysis also included an evaluation of the BAAQMD and SCAQMD threshold analyses, which both focused on CO₂e emissions from stationary combustion sources subject to district permit requirements.

How many stationary sources in the county might be covered under the proposed GHG thresholds?

The proposed stationary source GHG thresholds would only affect the highest emitters, the vast majority of which are subject to CEQA analysis already for other impact areas. Based on an analysis of 74 new District permits for combustion sources issued from 2005 to 2009, less than 7 percent of these projects exceeded 10,000 MTCO₂e per year.

What types of projects might exceed the threshold?

The amount of CO₂ that a combustion device generates depends on the power rating of the device (generally expressed as British thermal units per hour or Btu/hr) and the emission factor for CO₂ (generally expressed as kilograms of CO₂ per million British thermal units or kg CO₂/MMBtu). Projects that could exceed the threshold of 10,000 metric tons of CO₂e per year might involve use of equipment such as production flares, steam generators, thermal oxidizers and furnaces with an individual or combined project power rating of 20 MMBtu/hr or greater.

It is important to note that, as required by CEQA, only increases of emissions over existing baseline emissions would be considered against the 10,000 MTCO₂e significance threshold for new equipment or facility improvements.

What do I do if my project exceeds the threshold?

Three options exist for projects that initially exceed the 10,000 MTCO₂e threshold:

1. The applicant may reduce GHG emissions on the proposed project site by incorporating efficiency improvements into the project (such as electricity conservation through building efficiency, or efficiency upgrades to combustion equipment) and other types of emission reductions. The proposed reductions must not be required by regulations, must be quantifiable, and are subject to verification.
2. If the project is part of a larger array of District-permitted facilities under the ownership of the applicant, efficiency measures or other emission reductions may be implemented at facilities other than the project site. Emission reductions would be required for any proposed project GHG emissions in excess of the 10,000 MTCO₂e threshold.
3. If emission reductions cannot feasibly be integrated into the project or other permitted facilities under the permit applicant's control, then the applicant may obtain CO₂e emission reduction credits (also referred to as offset credits or offsets). The emission reduction credits serve as off-site mitigation to reduce impacts to below the significance threshold of 10,000 MTCO₂e.

What are emission reduction credits?

Emission reduction credits are actual ("in the air") GHG emissions that have been quantified and then permanently reduced or removed through enforceable means. The quantity reduced or removed is

certified and can then be used to compensate for (i.e. “offset”) GHG emissions generated from activities at regulated sources.

How are emission reduction credits generated?

Emission reduction credits are generated through an emission reduction credit application/registration process that validates emission reduction projects and issues emission reduction credits equivalent to the CO₂e reduction achieved by a given project. An emission reduction credit registry program uses rigorous standardized quantification and verification criteria, generally referred to as protocols. In partnership with the Climate Action Reserve, the California Air Resources Board (CARB) has recently adopted four protocols for generating emission reduction credits in the United States, US territories and tribal lands (with certain restrictions):

- Livestock Manure Management
- Ozone Depleting Substance Destruction
- Urban Forestry
- Forest Management

The District also has a process for generating emission reduction credits under Rule 806. The process for generating and certifying GHG emission reduction credits parallels the process in place for criteria pollutants, and allows for the creation of GHG emission reduction credits at existing permitted sources within the jurisdictional boundaries of the District.

What type of GHG emission reduction credits (offsets) can be used for off-site mitigation of GHG impacts?

There are many registries and exchanges that can be utilized to obtain GHG emission reduction credits. In the interest of providing regulatory certainty to affected sources, the District recommends the use of an emissions registry with protocols that have undergone extensive review and include rigorous procedures for review, verification and issuance of credits. In addition, the GHG emission reduction credits should be part of a program that includes ongoing enforcement of operational conditions to ensure that the GHG reductions are real and permanent.

It is anticipated that the carbon trading market will expand as a result of the December, 2010 approval of the California Air Resources Board’s (CARB’s) Cap-and-Trade program and other state, regional, federal and international GHG reduction initiatives. Additional protocols for generating GHG emission reduction credits may be developed and approved by CARB and/or the Climate Action Reserve, and additional registries and trading platforms may surface. The District will consider these new protocols and registries and will revise recommendations as necessary.

At this point in time, the following programs for generating GHG emission reduction credits are considered by the District to be of an acceptable quality to be used as off-site mitigation for GHG emissions related to CEQA projects:

- District-certified GHG emission reduction credits generated by stationary sources under District Rule 806
- Climate Reserve Tonnes (CRTs) generated under the Climate Action Reserve protocols
- CRTs generated under the CARB Cap-and-Trade Program approved protocols

- GHG emission reduction credits certified under the South Coast Air Quality Management District's "SoCAL Climate Solutions Exchange" (SCAQMD Rule 2701)
- GHG emission reduction credits generated under Sacramento Metropolitan Air Quality Management District's "Rule 250 Sacramento Carbon Exchange Program"
- Credits registered with the American Carbon Registry

Alternatively, a project applicant may propose additional options for off-site mitigation of GHG impacts for consideration by the CEQA lead agency; however, the proposed mitigation should include a mechanism to ensure that the GHG reductions are real and permanent. Ultimately, it is the decision of the CEQA lead agency as to what type of off-site GHG mitigations are considered adequate and feasible for a specific CEQA project.

How do I purchase emission reduction credits? What is available and how much do they cost?

The procedure to acquire emission reduction credits through a registry listing usually includes the following steps.

- An applicant approaches a registry-listed credit owner.
- A bidding process involving two or more parties sets the price of the emission reduction credits and general contract conditions. A transaction confirmation document with general terms is issued.
- The terms of the contract are refined with details such as duration of credits, verification documentation, unique registration numbers, etc.
- Emission reduction credits are then surrendered by the buyer to the regulatory agency for compliance.

The price of GHG emission reduction credits is variable. Many factors affect price such as available supply and speculator trading. Credits generated through different registries and protocols may vary in price.