

GHG GOALS & STRATEGIES

The Facilities Department will assist the Institute in reducing greenhouse gas (GHG) emissions from the core campus to 1990 levels by the year 2020.

Strategies:

- Update and maintain an accurate greenhouse gas inventory annually
- Execute mitigation projects identified by the GHG Reduction Committee
- Procure compliance instruments in accordance with AB32 regulations

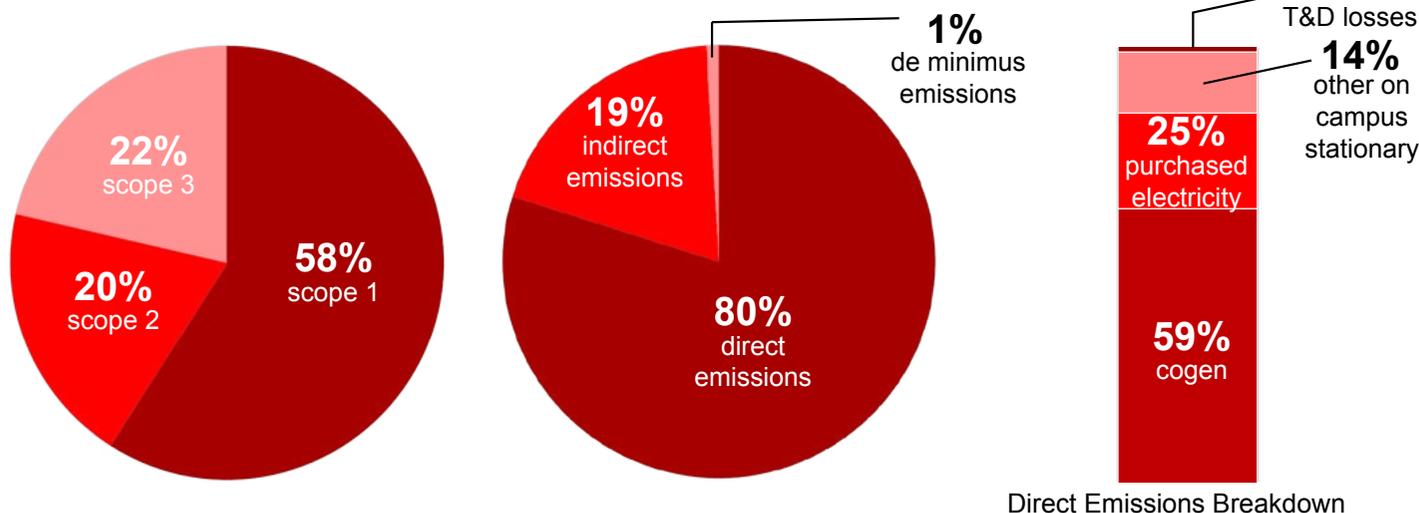
EMISSIONS INVENTORY

Caltech utilizes a combination of the Clean Air-Cool Planet (CACP) GHG emissions calculator, EPA models, and third party verification of on campus stationary sources to compile its emissions footprint. The CACP model was chosen since it was designed to model university emissions, has been widely used by other universities, and is endorsed by the Association for the Advancement of Sustainability in Higher Education (AASHE). Details on our inventory methodology can be found [here](#).

The Institute inventories the following emissions sources for the core campus in Pasadena, California:

- **Scope 1:** on-campus power generation, stationary source combustion, fleet vehicle emissions, refrigerants and chemicals, fertilizers
- **Scope 2:** purchased power from Pasadena Water & Power (PWP)
- **Scope 3:** faculty, staff and student commuting, Institute sponsored air travel, solid waste disposal and electricity transmission and distribution losses.

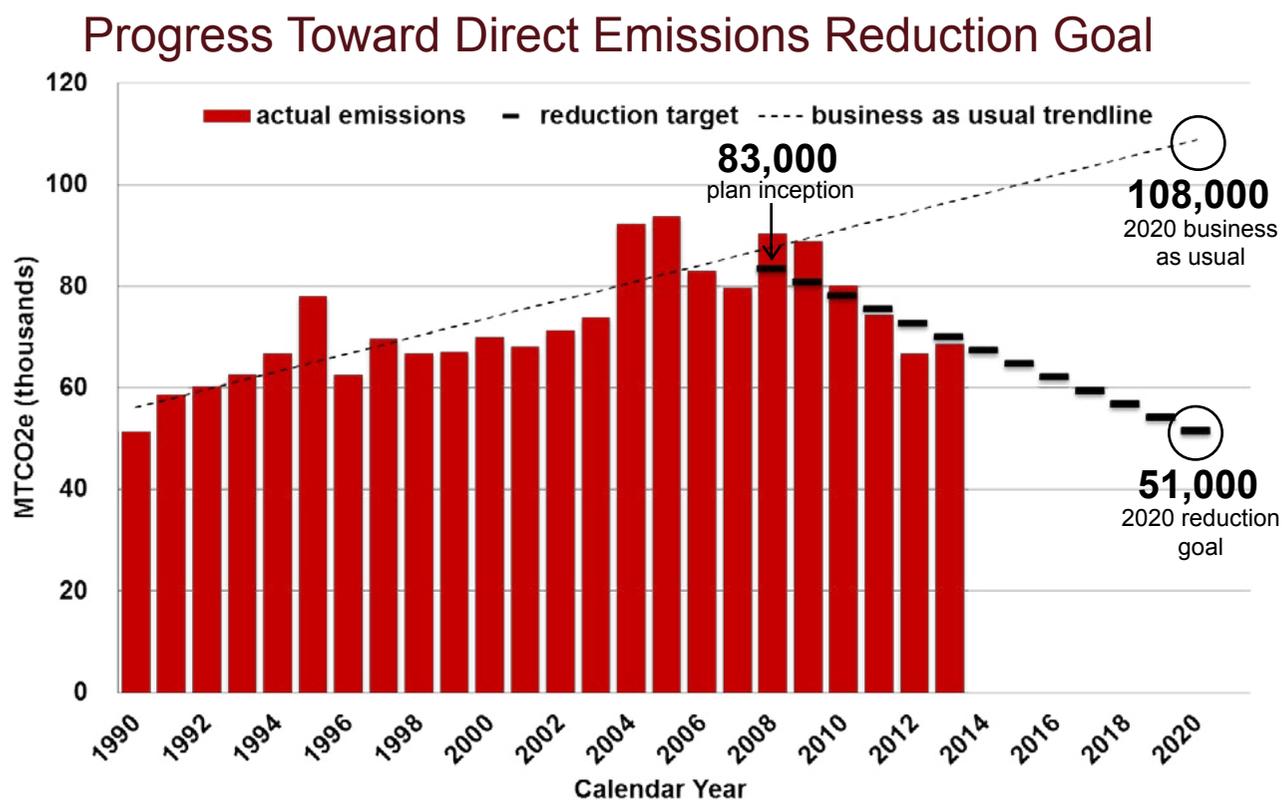
2013 Total Emissions: 86,100 MTCO₂e



EMISSIONS INVENTORY

A detailed analysis of the Institute's emissions reveals that roughly 80 percent of the core campus emissions are direct emissions¹ (see figure above). Accordingly, the Greenhouse Gas Reduction Committee advised the Institute to focus reduction efforts on those emissions that arise from operational decisions. To enable accurate measurement and assessment, direct emissions are tracked separately from indirect² and *de minimus*³ emissions. The latter two sources are tracked, but due to their dependence on factors outside the Institute's control, they are not used to assess progress toward reaching the reduction goal. Additionally, this method of tracking emissions follows the California Air Resources Board AB-32 reporting requirements.

The Greenhouse Gas Reduction Committee has identified approximately 20 mitigation projects to aid in achieving the reduction goal, which also will result in substantial financial savings for the Institute. These mitigation projects are outlined in the Institutes Climate Action Plan. Since inception of the Climate Action Plan in 2008, direct emissions have been reduced by 24 percent. In 2013, direct emissions were 2 percent below the reduction target.



1 Direct emissions are those from sources that are owned or controlled by the Institute. Caltech's direct emissions inventory includes on-campus stationary sources and purchased electricity. Purchased electricity is included in this category because the amount of electricity purchased is a direct result of operational decisions and campus activities.

2 Indirect emissions are a consequence of the activities of Caltech, but occur at sources owned or controlled by another entity. Caltech's indirect emissions inventory includes faculty and staff commuting and directly financed air travel.

3 Emissions that comprise less than five percent of the Institute's total scope 1, 2 and 3 emissions are considered *de minimus* emissions and are not traditionally inventoried on an annual basis. These emissions can be direct or indirect but are not included in either category; they are tracked separately. Caltech's *de minimus* emissions include those that result from university owned fleet transportation, refrigerant and chemical use, agriculture/fertilizer use, student commuting, and solid waste disposal.

