

PRELIMINARY INVENTORY OF OCCIDENTAL COLLEGE'S GREENHOUSE GAS EMISSIONS

A preliminary inventory of Occidental College's annual greenhouse gas emissions performed by the **Environmental Stewards class (UEP246)** shows that the College is responsible for generating the equivalent of at least 11,871 metric tons of carbon dioxide each year. Because the inventory does not cover all sources of greenhouse gas emissions, this figure represents a partial accounting of Occidental's contributions to climate change. These preliminary results do, however, quantify several of the biggest sources of greenhouse gas emissions related to the College's operations, suggesting actions that Occidental can take to reduce its climate change impacts, use less energy, and save money over the mid to long-term.

RESULTS OF PRELIMINARY INVENTORY

The preliminary inventory examined greenhouses gas emissions from four major categories of energy and fuel use. The following figures show how much power and fuel are used **annually** and the resulting amounts of greenhouse gases that were emitted into the atmosphere. The emissions data is given as MteCO₂, which means a metric ton of carbon dioxide.

- The biggest source of emissions is associated with the use of **electricity** on campus.¹ **Occidental uses 13,024,784 kilowatt hours of electricity = 8,947 MteCO₂**
- The second highest contributing source is **natural gas** that is burned or co-generated on campus. **Occidental uses 36,457 million BTUs (British Thermal Units) of natural gas = 1,930 MteCO₂**
- The third highest source of emissions is a result of faculty and staff burning fuel in their vehicles as they **commute** to and from campus. **Staff and faculty commuting uses an estimated 89,465 gallons of gasoline and 543 gallons of diesel fuel = 805 MteCO₂**
- The final source examined in this preliminary inventory is the fuel used by Occidental's **fleet** of gasoline and diesel vehicles. **Occidental's fleet uses 20,131 gallons of gasoline and 869 gallons of diesel fuel = 189 MteCO₂**
- **Combined emissions from these sources = 11,871 MteCO₂**. This works out to almost 7 metric tons per student, or approximately 5.5 metric tons per member of the overall Occidental community (students, staff, and faculty).

JUST HOW MUCH IS 11,871 METRIC TONS OF CO₂?²

Occidental's annual emissions of almost 12,000 metric tons – which are only a partial accounting of our climate impact – is the equivalent of the amount of CO₂ emitted by driving a car more than 26 million miles (that's like circling the planet 1,044 times or 54 round trips to the moon)

To look at it another way, to offset the CO₂ emitted annually by Occidental, each student would have to plant 167 tree saplings every year and then, after graduation, keep coming back to make sure that all 304,385 new trees planted each year grow for at least another decade.

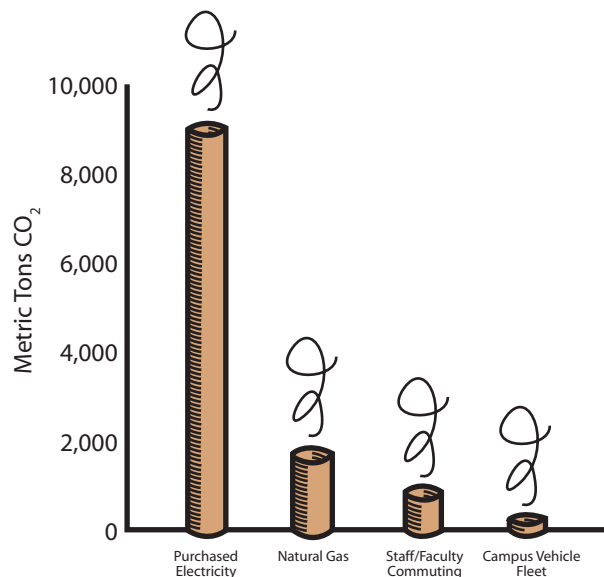


HOW WAS THIS PRELIMINARY INVENTORY OF EMISSIONS CALCULATED?

Occidental's greenhouse gas emissions were calculated using the most recent available annual data on Occidental's use of electricity, natural gas, and fuel in its fleet of campus vehicles. Estimates of fuel used in staff and faculty commutes were based on a 2005 survey of those constituencies' commuting habits. This information was entered into the Clean Air-Cool Planet Campus Carbon Calculator, which is an emissions inventory tool that has been used by numerous colleges and universities.³

WHAT SOURCES OF GREENHOUSE GASES HAVEN'T YET BEEN COUNTED?

There are additional sources of greenhouse gas emissions associated with Occidental's operations that could be measured to get a more complete inventory of the College's climate change impact. Air travel by faculty, staff, and students is likely to be the most significant additional source of greenhouse gas emissions. The Environmental Stewards class has requested data on waste disposal and refrigerants but this information is not yet available. Commuting by students living off campus is another source, but we lack survey data with which to estimate students' fuel use.



WHAT CAN OCCIDENTAL DO TO REDUCE GREENHOUSE GAS EMISSIONS?

As scientific consensus has emerged on the serious consequences of climate change, a growing number of colleges, universities, businesses, and other organizations are making commitments to reduce their greenhouse gas emissions. For example, the American College & University Presidents Climate Commitment⁴ has been signed by over 400 institutions of higher learning, including many of Occidental's peer colleges such as Pomona, Oberlin, Bates, Carleton, Claremont McKenna, Franklin & Marshall, Bowdoin, Hamilton, Macalester, and Trinity. Occidental should make a similar commitment, set a reductions target and adopt a plan for making reductions. The plan can be developed with input from staff, administration, students and faculty, and include a range of measures designed to reduce emissions in a cost effective manner. To reduce electricity use, the College could:

- **pursue energy efficiency measures** beyond those currently in place;
- purchase a portion of **electricity from renewable sources** through the Department of Water and Power's Green Power program;
- **follow the green building recommendations** in the new Campus Master Plan;
- install solar panels on campus as a demonstration project.

To cut emissions from transportation, Occidental can:

- adopt a alternative commuting plan to **give employees incentives to use mass transit**;
- accelerate provisions of the Campus Master Plan that call for a **more walkable and bikeable campus**.



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1. Occidental purchases electricity from the City of Los Angeles' Department of Water and Power, which in turn gets part of its power from generation plants that burn fossil fuels such as coal and natural gas.

2. Source: US Climate Technology Cooperation Gateway, Greenhouse Gas Equivalencies Calculator, <http://www.usctcgateway.net/tool/>

3. <http://www.cleanair-coolplanet.org/toolkit/content/view/43/124/>

4. American College & University Presidents Climate Commitment <http://www.presidentsclimatecommitment.org/>