

Greenhouse Gas Background

Greenhouse Gas Emission Inventory Background

A GHG emission inventory is a report that documents the total GHG footprint, in metric tonne carbon dioxide equivalents (MTCDE), for which the College is either directly or indirectly responsible.

GHG emissions arise from the consumption or use of carbon-

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Results

During fiscal year 2013, Skidmore emitted approximately 16,972 MTCDE with 6,167 MTCDE in Scope 1, 5,719 MTCDE in Scope 2 and approximately 5,086 in Scope 3 (Figure 1).

Figure 1: Total GHG emissions by scope for fiscal year 2013. The chart shows three categories: Scope 1 (6,167 MTCDE), Scope 2 (5,719 MTCDE), and Scope 3 (5,086 MTCDE). The total emissions are 16,972 MTCDE.

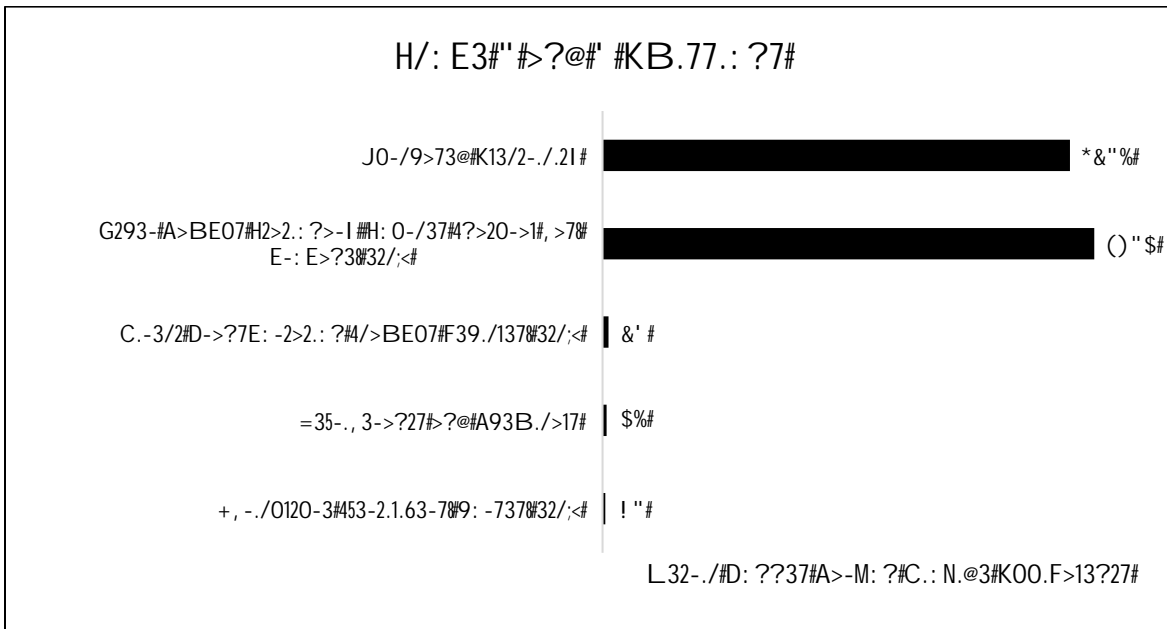


Figure 2. This graph depicts the Scope 1 and 2 emissions by source. It is clear that Skidmore’s use of electricity and other campus stationary sources produce the largest quantities of greenhouse gas emissions of the Scope 1 and 2 sources.

Discussion

This GHG inventory reveals a relatively even split between the College’s Scope 1, 2 and 3 emissions: 36, 34, and 30 percent, respectively. However, it is important to note the distinct difference in data confidence and data types among the three Scopes. Scope 1 and 2 data came primarily from utility bills, so we can be relatively confident about their accuracy.

For Scope 3 emissions, some of the data came directly from sources: study abroad air travel, travel agency- booked faculty/staff academic/business air travel, chartered bus travel and athletic air travel so, as with scope 1 and 2, we can have confidence in the accuracy of these data. The scope 3 emissions calculated for faculty/staff commuting, non-travel agency-booked air travel, faculty/staff train travel and student travel to and from home were collected from the survey and then extrapolated to the community. Although this methodology is well within the boundary of compliance with the Greenhouse Gas Protocol and Clean Air Cool Planet Campus Carbon Calculator, the results should be treated as a grosser approximation than those from Scope 1 and 2. Additionally, the College has less control over scope 3 emissions and in some cases there are fewer mitigation strategies (for example, for air travel). Lastly, as more and more entities begin to account for their carbon emissions, Scope 3 emissions have the potential of being “double counted”. For example, if an administrator takes the train to New York City for a business meeting, the emissions of the trip could potentially be counted within Skidmore’s GHG inventory as well as the train company’s. As a result of the decrease in data confidence and the possibility of “double counting”, Scope 3 emissions are treated differently than Scope 1 and 2.

The completion of the GHG inventory begs the question, “how does Skidmore’s GHG inventory compare to other Colleges’?” One of the added complexities of GHG accounting in higher education is the lack of consistency in the methods institutions employ to arrive at their GHG baseline such as the

gathering and presenting of the data, the various different dates of the reports, particularly for Scope 3 emissions. These differences in methodologies (such as estimating faculty and staff commuting, student travel to and from home) does not allow for productive institutional comparisons at this time. It is our hope that over time GHG accounting methodology will become more rigorous and standardized to allow for productive comparisons.

As the College looks forward at carbon reduction strategies, it is important to honor the good work the College has already done, and, indeed, we have seen a 48% reduction in GHG emissions (Scope 1 and 2) between our baseline year of 2000 and this inventory. A few examples of GHG reduction projects include the College's geothermal heating and cooling systems, the residence hall electricity metering project, occupancy sensor installations, light efficiency projects, re-insulation projects, motor upgrades, increased fuel efficiency in our fleet, the reduction of fertilizer use, the installation of independent boilers, etc. Please note that in 2014 Skidmore installed a large solar field, several solar thermal projects, and entered an agreement for

Definitions:

Greenhouse Gas / Gases (GHG)

Carbon Dioxide Equivalent (CDE)

Tonnes

Tons