

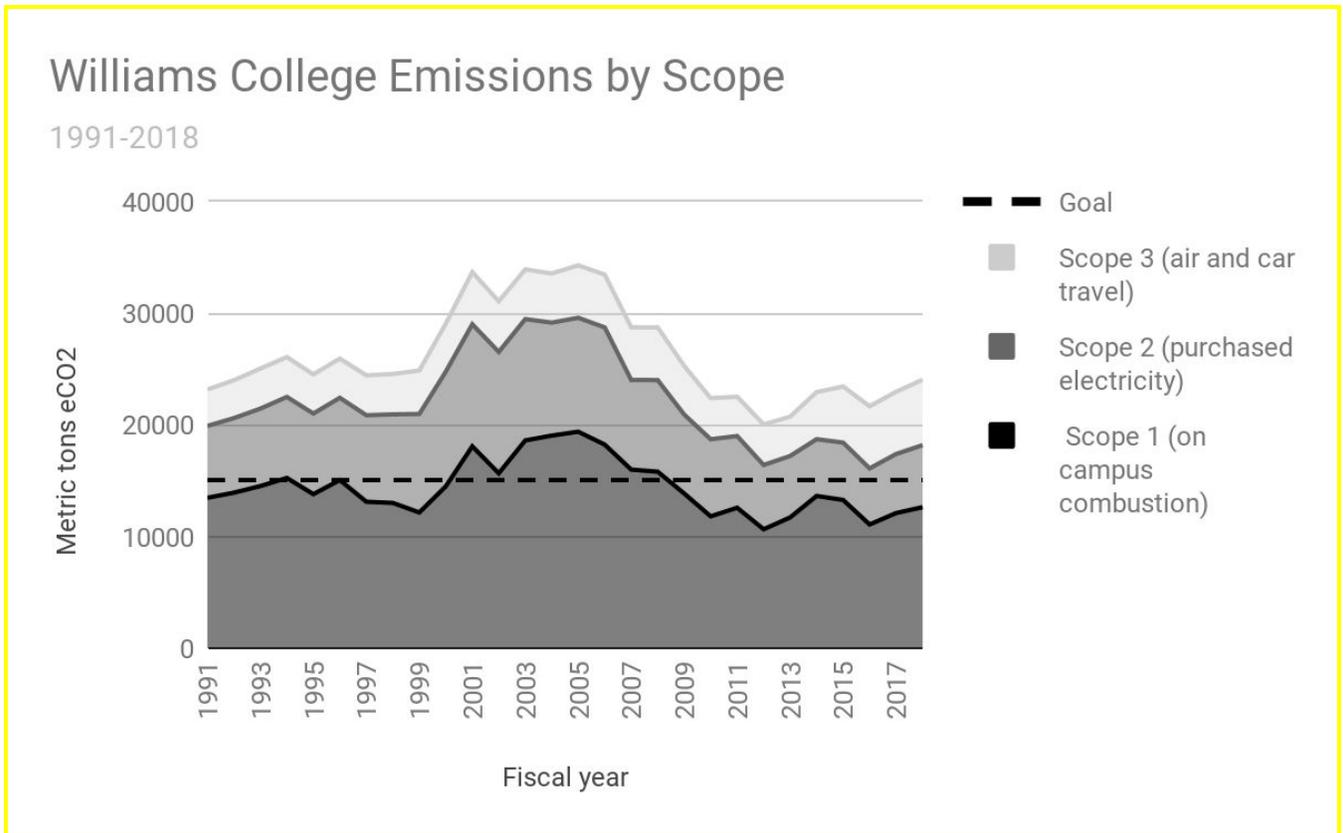
Report on Greenhouse Gas Emissions during Fiscal Year 2018

Williams College

Summary: As of FY18, Williams is approximately 54% of the way toward reaching our current greenhouse gas emissions goal of 35% below 1990’s level by 2020. Concerted efforts to reduce energy consumption and emissions starting in FY07 lowered annual emissions to 24,045 tons in FY18. This is not the lowest point for emissions – in FY12, emissions were 20,039 tons.

Figure 1 shows how three broad scopes of greenhouse gas emissions have evolved over the past 25 years. Scope 1 includes all direct emissions from the central heating plant and other campus boilers, including co-generated electricity. Scope 2 includes indirect emissions from purchased electricity. And Scope 3 includes other indirect emissions, mostly from air travel by faculty, staff and students.

Figure 1: Greenhouse gas emissions by scope 1991-2018



Note: Greenhouse gas emissions calculations exclude emissions associated with off-campus properties, such as faculty/staff housing, commercial rental properties, and properties located outside of Williams, as well as greenhouse gas emissions associated with goods and services purchased by the college, other than electricity and fuels consumed on campus. The college closely tracks emissions related to its direct expenditures, but the data for tracking other impacts is often less available. Furthermore, other impacts could reasonably be attributed to other companies or individuals, and those companies or individuals may have more control over reductions in those areas.

Why did emissions rise after a low in 2012?

Much of the increases can be attributed to construction of new buildings – both the emissions released in the construction process itself and in heating, cooling, lighting, and ventilating new square footage.

There has also been a steady increase in air miles from 2013 through 2018, likely due to the capital campaign. The college's methodology for tracking air miles has improved over the past three years, which may mean that some of the increase is due to increased monitoring and more accurate reporting, not due to increased travel.

The combination of increased emissions due to construction, new square footage and increased air travel has largely counteracted the energy efficiency improvements that the college has made in the past ten years. The switch to cleaner fossil fuels at the central heating plant now accounts for the majority of emissions savings when compared to business-as-usual. Total campus energy use is still down approximately 20% from peak, but the increased emissions from air travel have negated some of those gains.

What are the plans and risks for reaching our 2020 goal?

- 1. Renewable Electricity.** To meet our 2020 goal, Williams will need to generate or procure 100% renewable electricity while retaining the environmental attributes. The college has signed a 20 year contract to support a utility scale solar project in Maine, including the environmental attributes. This will reduce the college's scope 2 emissions by 80-90%. The remaining emissions related to electricity will be either reduced through energy conservation, future on-site solar projects, and/or shorter term purchases of renewable electricity off campus.
- 2. Impact of construction on emissions.** The more construction the College undertakes, the more we will need to reduce emissions through on-campus conservation or purchasing or creating carbon offsets in the local economy. Furthermore, the ongoing impact of additional square footage will need to be carefully controlled. Buildings that are currently under design must not increase emissions. This can be accomplished by removing other buildings (as in the case of the science project), designing net zero energy buildings (as in the case of the CDE Annex), or by doing an addition/renovation that decreases overall energy use while satisfying program needs.
- 3. Impact of air travel.** Air travel is currently an unavoidable part of the College's business, but the entire campus community should challenge itself to reduce air travel when possible. Business travel on the east coast, for example, can take advantage of train travel, which has lower emissions per mile traveled than air travel.

Carbon Offsets

Williams has committed to purchasing carbon offsets at the end of fiscal year 2020 to reach carbon neutrality, and the college needs to establish criteria and strategies for those

purchases. The college is in the process of establishing a task force that will work on those criteria in anticipation of a test purchase of carbon offsets in the current fiscal year.