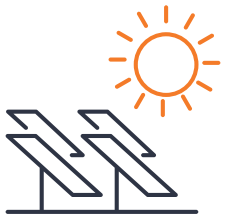
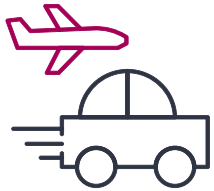
Deep Energy Audits

Energy audits of existing campus buildings enable significant energy and emissions savings. The Department of Facilities continually tracks building energy use to prioritize these audits for buildings with the greatest potential for energy and emissions impact and, in turn, reduction. The energy audit follows a process of study, design, and implementation with energy usage and emissions reductions often realized one to two years following the beginning of the project. As such, many reductions that were realized in FY20 commenced years prior.



Summit Farms Solar Facility

MIT continued to benefit from the Institute's 25-year commitment to purchase electricity generated through its Summit Farm Power Purchase Agreement (PPA). The agreement, set in 2016, enabled the construction of a roughly 650-acre, 60-megawatt solar farm on fallow farmland in North Carolina. Through the purchase of 87,320 megawatt hours of solar power in 2020, MIT offset over 28,000 metric ton of greenhouse gas emissions (MTCO2e) from on-campus operations in 2020.



Scope 3 Emissions

In 2019, the MIT Office of Sustainability (MITOS) expanded upon a multi-year effort to build a preliminary picture of the Institute's Scope 3, or indirect, GHG emissions. This is done to inform MIT's total greenhouse gas emissions activities (Scopes 1 + 2 + 3) and explore where strategic opportunities may exist to reduce emissions beyond what MIT is currently tracking. This effort is developing additional emissions data associated with MIT's purchased goods and services, MIT-sponsored travel, commuting, and capital goods (furniture, fixtures, tools, etc.) using the WRI & WBCSD GHG Protocol for Scope 3 framework.

LEARN MORE: sustainability.mit.edu
web.mit.edu/facilities

Office of Sustainability

2020 CLIMATE ACTION PLAN UPDATE:

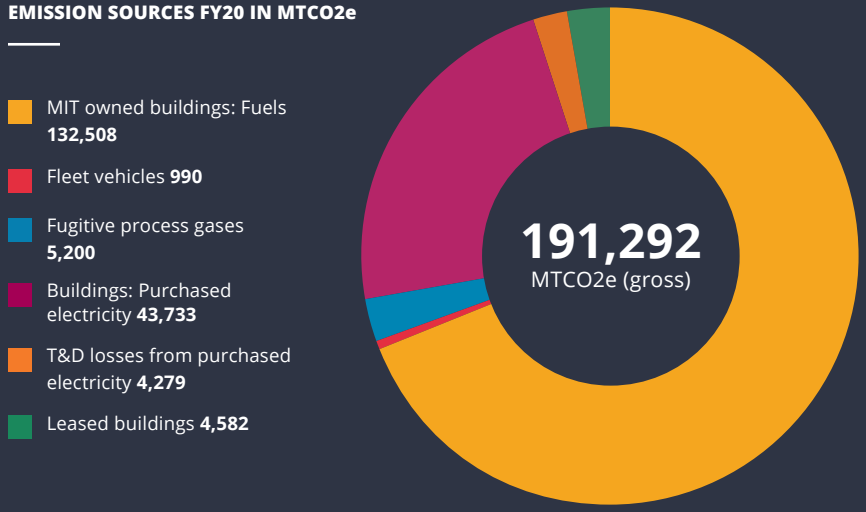
Reducing MIT's Emissions

PROGRESS TOWARDS 32% CAMPUS GOAL

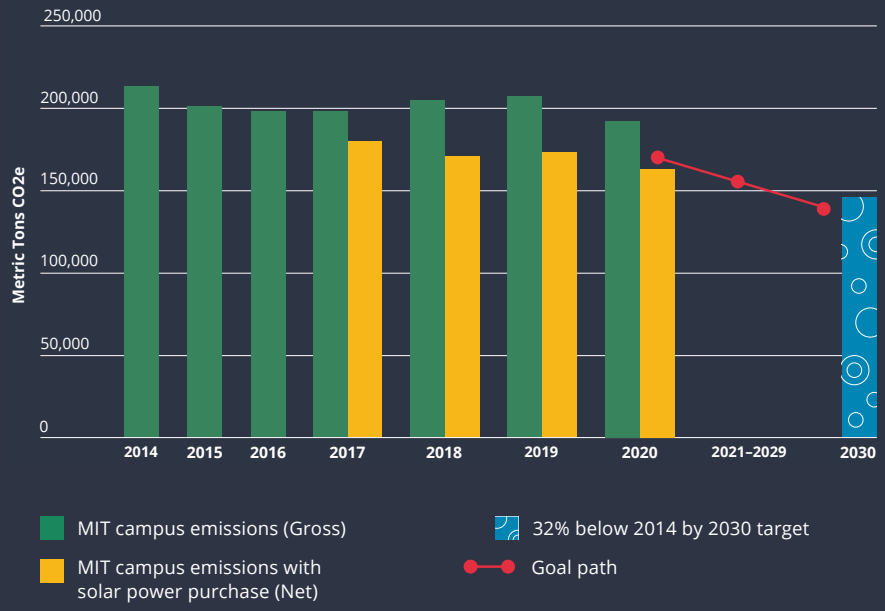
In 2020, MIT continued to advance toward its goal of a minimum 32% reduction in greenhouse gas (GHG) emissions by 2030. Overall net emissions are now 24% below MIT's 2014 baseline, with emissions on campus reduced 6% over the previous fiscal year. This reduction was driven in part by gains in building-level energy efficiency investments, operational efficiency of the Central Utilities Plant (CUP), improvements in the New England regional electricity grid, a less intense heating season, and a temporary de-densification of campus due to COVID-19.

CAMPUS SOURCES OF GREENHOUSE GAS EMISSIONS AND EMISSIONS TRENDS

MIT'S ON-CAMPUS GREENHOUSE GAS EMISSION SOURCES FY20 IN MTCO2e



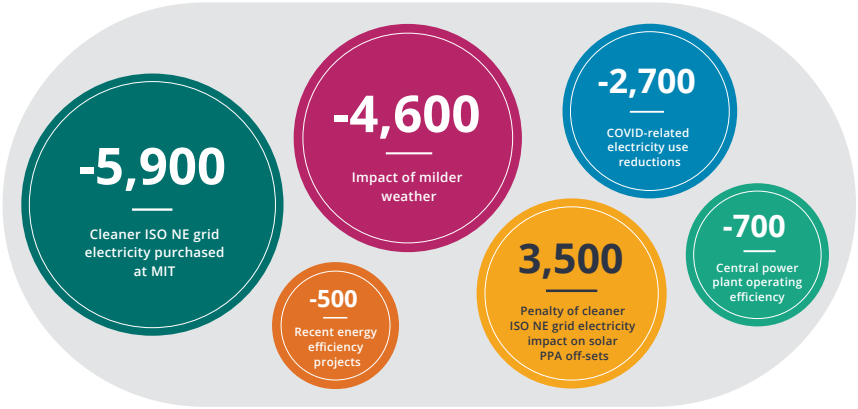
MIT CAMPUS GREENHOUSE GAS EMISSIONS



REACHING OUR GOALS IN UNIQUE TIMES

Sources of Reduced Emissions

In FY20, MIT realized a net reduction of nearly 11,000 metric tons of GHG emissions from the previous year. These net changes were driven by several primary factors as highlighted below. Preliminary efforts to develop data on the Institute's Scope 3, or indirect, GHG emissions continue. This data will inform MIT's total GHG emissions activities and enable MIT to explore opportunities to reduce emissions beyond what is currently being tracked.



Weather-Normalized CUP Output

MIT has completed weather normalization analysis to model the CUP's output of chilled water driven by days needing cooling and the CUP's output of steam as being driven by days needing heating — each due to weather.

The need for cooling in FY20 was similar to a baseline average of the need during the previous three years, and in turn, the model expected CUP output of chilled water in FY20 to be close to its average over those three years. However, the actual output of chilled water during FY20 was about 3.6 percent lower than the prediction, suggesting that factors such as increased efficiency played a role. The need for heating in FY20 was about 6 percent less than a baseline average of the heating need during the previous three years. As a result, the model expected CUP output of steam in FY20 to be lower than it was during the baseline period. Actual steam output was about 0.4 percent lower. This result suggests that most of the decrease in CUP steam output during FY20 was due to weather.