

REACHING OUR GOAL



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 has enabled the construction of a roughly 650-acre, 60-megawatt solar farm on fallow farmland in North Carolina. Through the purchase of 87,300 megawatt hours of solar power, MIT was able to offset over 30,000 metric tons of greenhouse gas emissions (MTCO₂e) from our on-campus operations in 2019. The Summit Farms PPA model has been credited with inspiring a number of similar projects around the country putting additional renewable energy onto the power grid.



Innovating for GHG Mitigation

MIT is home to numerous lab facilities where energy consumption is typically high due to the conditioning of outside air for ventilation purposes, coupled with high air change rates. MIT is currently exploring the development of an innovative laboratory ventilation procedure program to minimize energy consumption while also ensuring the safety and integrity of lab experimentation.

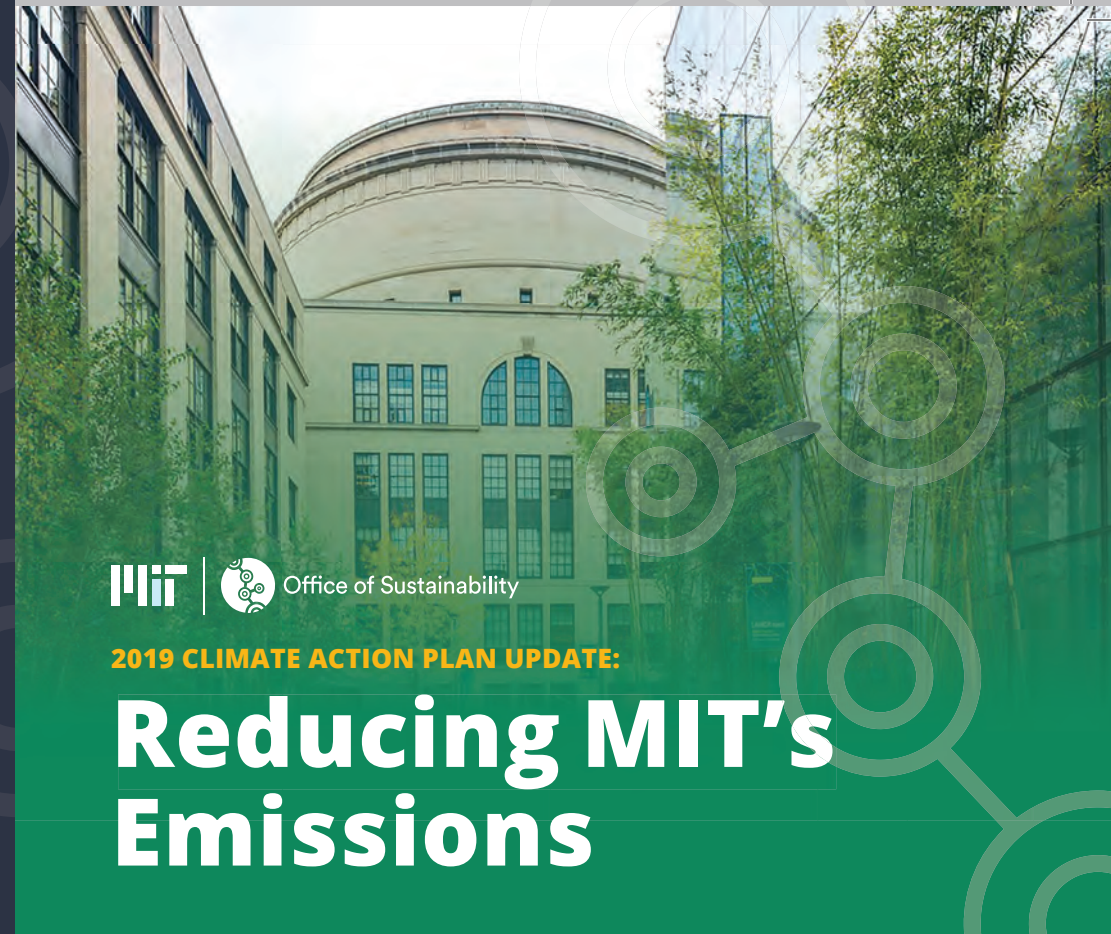
The use of specialty gases in research across campus contributes a small yet potent source of greenhouse gas emissions at MIT. As MIT.nano is expected to use substantial amounts of these gases, the research facility is testing a new system to neutralize these emissions through abatement solutions at point of use—reducing emissions and providing a model for altering the emissions potential of similar research and manufacturing facilities around the world.



Partnership

Building on the success of MIT's partnership enabling the Summit Farms solar facility development, MIT is actively exploring new ways to leverage additional renewable energy production through creative aggregation strategies with local partners.

LEARN MORE: sustainability.mit.edu



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2019 CLIMATE ACTION PLAN UPDATE:

Reducing MIT's Emissions

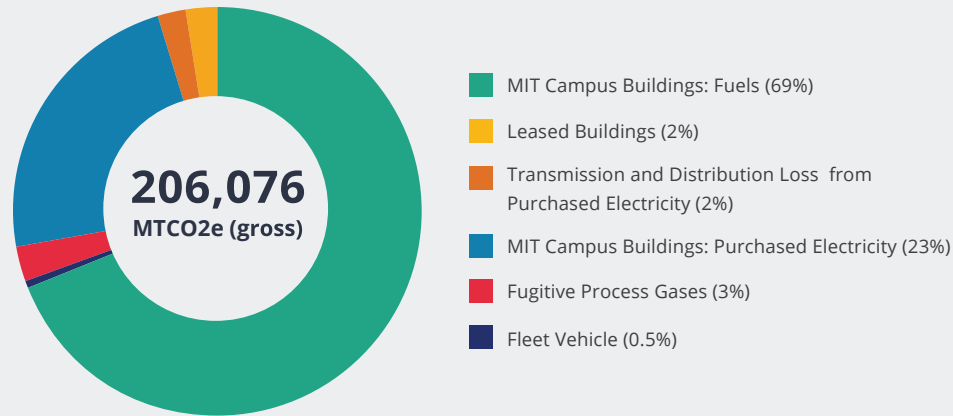
PROGRESS TOWARD 32% CAMPUS GOAL

In 2019, MIT continued to advance toward its goal of a minimum 32% reduction in greenhouse gas (GHG) emissions by 2030. Overall net emissions are 18% below our 2014 baseline, as on-campus greenhouse gas emissions increased slightly from 2018 levels. This 2% increase in 2019 was in part driven by growth in campus size—including the first fully operational year for MIT.nano, local weather, and the use of specialty research gases. Investments in energy efficiency projects offset a portion of the growth in energy demand.

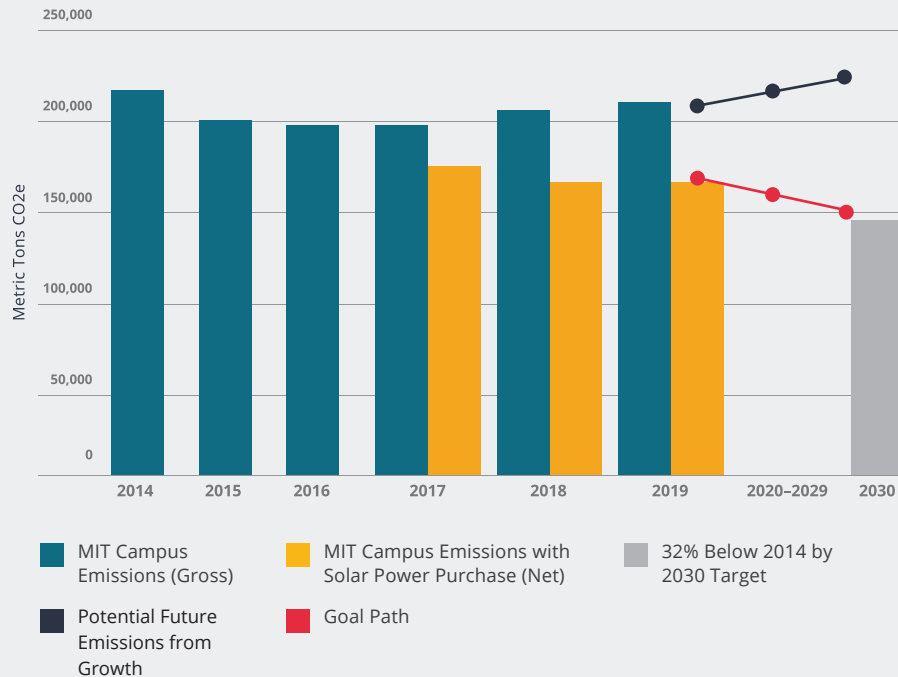
MIT CONTINUES TO TRACK TOWARD ITS MINIMUM 32% REDUCTION GOAL BY 2030.

CAMPUS SOURCES OF GREENHOUSE GAS EMISSIONS AND EMISSION TRENDS

MIT'S ON-CAMPUS GREENHOUSE GAS EMISSION SOURCES FY2019



MIT GREENHOUSE GAS EMISSIONS FY2014-2019



ENERGY EFFICIENCY

As MIT explores strategies for achieving climate neutrality in the future, a core component continues to be scaling up campus energy efficiency. Anchored by significant planned efficiency gains from MIT's expanded Central Utility Plant, the Institute is testing and implementing new complementary approaches to increase energy efficiency gains in buildings ranging from testing artificial intelligence to optimize building control systems, to wholesale mechanical system changes in labs that reduce air change requirements and create a more efficient and comfortable work environment.

Integrated with MIT's long-term capital renewal program, the Institute continues to implement comprehensive energy efficiency strategies throughout its existing building stock. These strategies help offset growth in other areas of campus.



Examples of Recently Completed Energy Efficiency Projects

PROJECT TYPE	ESTIMATED KWH SAVINGS	ESTIMATED THERM SAVINGS	ESTIMATED GHG MTCO2e AVOIDED	SAVINGS EQUIVALENT TO GHG EMISSIONS FROM *
Lighting Retrofits	1,944,451		582	233 homes' one year electricity use
Monitoring-Based Building Commissioning & Controls		19,718	105	258,878 miles driven by a passenger vehicle
Steam Trap Renewal		12,936	78	8.7M+ cell phones charged
Utility Distribution Insulation		57,053	302	64 passenger vehicles driven for one year
TOTAL	1,944,451	89,707	1,067	

Notes: Figures reflect examples of energy efficiency measures substantially completed in 2019 in existing building projects only and do not include GHG avoidance from new construction and renovation capital projects; all figures are based on Eversource approved calculations and not post-implementation measurement. GHG avoided emissions are calculated using MIT-specific emissions factors that reflect actual energy sources. * Figures via EPA Greenhouse Gas Equivalencies Calculator