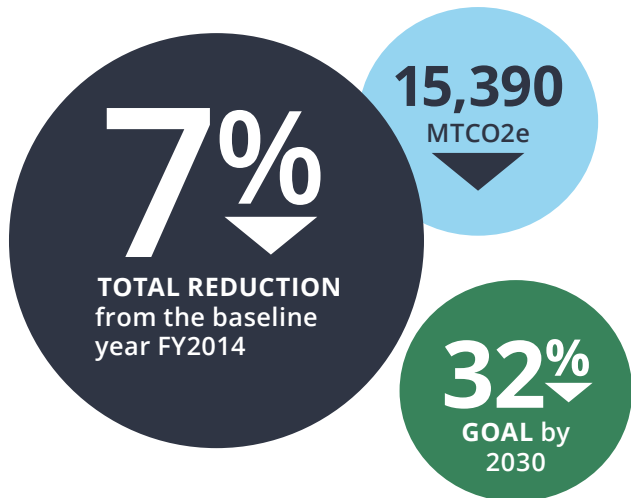


FROM PLAN TO ACTION:

Progress Towards MIT's Greenhouse Gas Goal



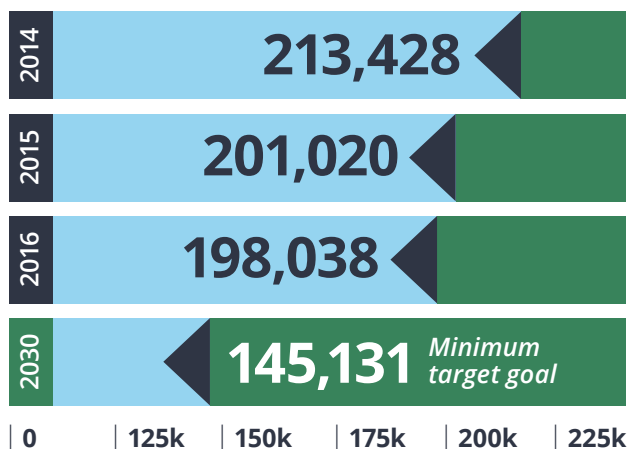
Using Our Community as a Test Bed for Change

In October 2015, MIT released the five-year *Plan for Action on Climate Change*, outlining the steps that the Institute will take to intensify its impact in advancing solutions to the urgent problem of global climate change. Leveraging MIT's research and education for climate solutions, the Plan embraces using our own campus as a test bed for reducing emissions.

OUR EMISSIONS INVENTORY

MIT's current greenhouse gas (GHG) emissions inventory includes emissions from three sources: Cambridge academic building energy use, fugitive emissions, and campus-owned vehicles.

Total Campus GHG Emissions By Year (MTCO2e)



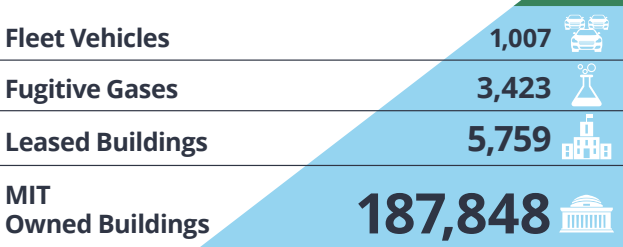
GHG Emission Sources

MIT Owned Buildings (94%) and Leased Space (3%): The largest source of campus emissions is the energy used to heat, cool, and power buildings. Ninety-seven percent of the Institute's emissions are associated with the operation of labs, offices, and facilities across campus. MIT leases approximately 515,000 gross square feet to accommodate departments off-campus in Cambridge. *Mitigation strategies:* advance energy efficiency and renewable energy investments, and partner with our leasing companies in non-MIT owned properties.

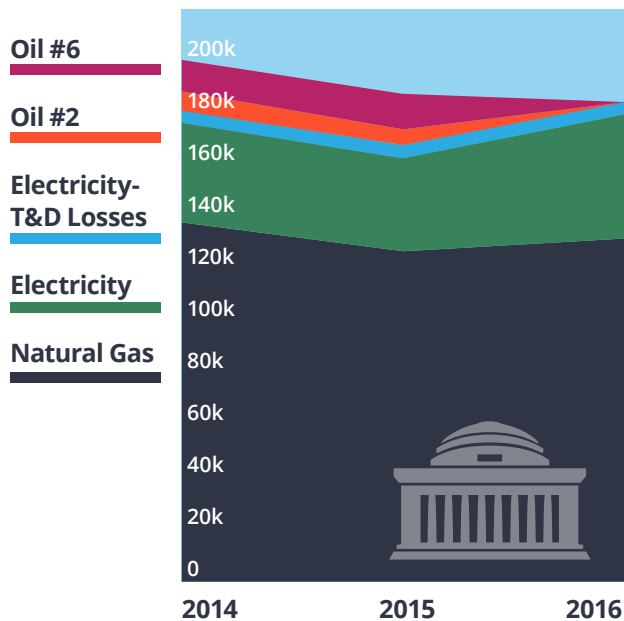
Fugitive Emissions (2%): Fugitive emissions are GHGs that are emitted on campus through non-combustion processes used in research, refrigeration and electrical insulation. *Mitigation strategies:* chemical substitution, enhanced material capture and reuse, and process redesign.

Campus-Owned Vehicles (1%): MIT's fleet comprises over 160 departmental vehicles, and shuttles and emissions are associated with their fuel combustion. *Mitigation strategies:* expansion of alternative fuels, optimizing vehicle use and size for required duty, and improved transit routing and scheduling.

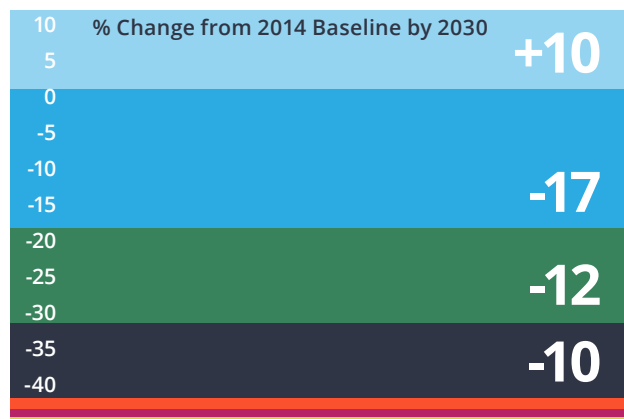
Total Campus GHG Emissions By Source, 2016 (MTCO2e)



MIT Owned Buildings: Changes by Fuel Type (MTCO₂e)



Planned GHG Reduction Strategies (Including campus growth)



MITIGATION

- Campus Building Growth
- Renewable Energy Procurement (off-site)
- Energy Efficiency Investments (existing buildings)
- Central Utility Plant Upgrades
- Fleet Vehicle Optimization
- Renewable Energy Production (on-site)
- Non-Combustion Source Reduction

PLANNING FOR OUR GHG REDUCTION GOAL

MIT GHG emissions declined between FY2014-2016 via investments in energy efficiency and use of cleaner fuels, and benefited from improvements in grid-purchased electricity. Successful energy efficiency strategies included investments in new construction and renovation, lighting, building retro- and monitoring-based commissioning, mechanical system upgrades, and utility system insulation. Reducing demand for fossil fuel sources of utilities on campus is being coupled with the development and adoption of increased sources of renewable energy produced on campus and in the region.

Looking forward, the pillars of our plan for mitigating emissions - informed by our past successes - include:

Scaling up campus-wide investments in energy efficiency across existing buildings, while making investments in new construction to maximize performance;

Renewing our Central Utilities Plant including replacement of our current combined heat and power system. Utility distribution system upgrades are expected to reduce our baseline emissions by 10 percent despite growth; and

Investing in renewable energy by deploying additional renewable energy systems on campus and enabling off-site renewable energy production. MIT recently formed an alliance for the development of a 60 megawatt solar photovoltaic farm in North Carolina that led to a long term power purchase agreement. MIT will purchase solar energy equivalent to 40 percent of its current electricity use, which will neutralize emissions by 17 percent.

PLANNING FOR CLIMATE RESILIENCY

Mitigating greenhouse gas emissions and adapting to climate changes are complementary strategies for reducing and managing the risks of climate change over time. With the impacts of climate change already manifesting in New England, MIT is simultaneously planning for a hotter and wetter future subject to more intense and extreme weather events. MIT has partnered with faculty, students, and staff to assess local climate vulnerabilities using newly developed, localized simulation models that are defining new approaches at the campus level.