

Energy

The MIT Energy Initiative

The MIT Energy Initiative (MITEI) aims to help transform global energy systems. It is a research, education, and outreach program that is without peer at U.S. academic institutions in its depth and breadth.

MITEI has more than 60 industry and public partners and has attracted over \$300 million in sponsored research and other support. It has funded 67 novel or early-stage energy research projects led by faculty from across MIT's five schools.

An Institute-wide initiative, MITEI pairs world-class research teams with key players across the innovation spectrum to help improve today's energy systems and shape tomorrow's global energy marketplace. It is also a resource for policy makers and the public, providing unbiased analysis and serving as an honest broker for industry and government.

Energy Education at MIT

MIT is a center of learning. One of MITEI's main goals is catalyzing student knowledge and enthusiasm in order to solve scientifically, politically, and technologically challenging problems.

MITEI's Energy Education Task Force (EETF), with faculty from all five schools, guides the development of energy education at MIT. In partnership with MITEI's energy research and campus energy management activities, the EETF and the MITEI Education Office seek to transform the MIT campus into a vibrant energy learning lab.

Energy Studies Minor

The Energy Studies Minor for undergraduates is an Institute-wide program that complements the expertise gained in any major with a broad understanding of the interlinked realms of science, technology, and social sciences as they relate to energy and associated environmental challenges. The minor curriculum

integrates these three domains in a multidisciplinary program.

The core of the Energy Studies curriculum provides an integrated perspective on energy and associated environmental challenges in three domains: Energy Science Foundations, Social Science Foundations of Energy, and Energy Technology/Engineering in Context. The core is complemented by a customized program of electives selected by each student in close consultation with Energy Minor faculty advisors.

Energy in the Classroom

The MITEI Education Office maintains an interactive directory of energy-related classes that are offered at MIT. Classes are selected and organized by an interdisciplinary group of faculty, students, and staff. The directory may be sorted by a number of categories, including department, level, and term. The directory allows students interested in energy to easily find classes at MIT that serve their needs.

“Walking the Talk” on Energy at MIT

The Campus Energy Program extends the impact of MITEI research and education by demonstrating and fostering sustainable energy practices on campus. The goal is to lead and educate by example. The Campus Energy Task Force includes students, staff, and faculty and guides MIT's green campus activities in energy and resource efficiency, renewable energy, sustainable design, and community engagement. In May 2010 MIT and its electric utility, NSTAR, announced an ambitious three-year partnership to reduce MIT's electricity use by 34 million kilowatt-hours — equivalent to 15 percent of its overall electricity use — through innovative building efficiency strategies; substantial student, faculty, and staff engagement; and by piloting new technologies and approaches.

Student Campus Energy Project Fund

MITEI has established a grant program for student energy projects that promote sustainable energy and environmental practices and advance the broad objectives of the Campus Energy Task Force. Each semester a committee of faculty, staff, and students review student project proposals for seed funding and score them on merits of impact, community engagement, educational opportunity, and cost effectiveness. New proposals are always welcome.

Undergraduate Research Opportunities

MITEI works with the UROP office to support undergraduate participation in energy research and to encourage undergraduate interest in the energy field. UROPs can be conducted in any academic department or interdisciplinary laboratory. Funding for MITEI UROPs in summer 2011 was provided by individual donors and by members of the MIT Energy Initiative, including inaugural founding member BP, founding member Shell, and individual affiliate members with a particular interest in supporting undergraduate research. Undergraduate research topics may address any aspect of energy systems and related environmental challenges, such as energy sources and supply (solar, wind, geothermal, nuclear, fossil fuel, etc.); conversion, storage, and distribution; technology and use (transportation, buildings, etc.); policy; efficiency and demand-side management; and campus energy management.

Student Groups

Many student groups on campus organize and participate in creative activities related to energy and associated environmental topics. Events include lectures and discussions, community service and public awareness, extracurricular design projects, and academic work. Clubs include both graduate and undergraduate students. The MITEI Education Office serves as a resource for student groups focusing on energy, environment, and sustainability, including:

- Biodiesel@MIT
- Electric Vehicle Team
- MIT Energy Club
- MIT Transportation Group
- Solar Electric Vehicle Team
- Sustainability@MIT
- UA Sustainability Committee

Freshman Pre-Orientation Program

The Discover Energy: Learn, Think, Apply (DELTA) FPOP acquaints new students with the energy-related opportunities at MIT, introduces them to important energy topics, and helps them get to know each other and current MIT students active in energy. The FPOP includes tours and discussions about MIT's energy use, CO₂ emissions, and environmental management strategies, including an energy audit within MIT's buildings. In addition, leading faculty and excellent students highlight key themes in energy and climate, providing both an overview and the opportunity to ask questions.

Energy Futures Week

Energy Futures Week is a set of events coordinated by MITEI during Independent Activities Period to educate, inspire, and engage the MIT community in all things energy. Energy Futures Week 2011 was kicked off by Neal Elliott, associate director for research at ACEEE, who led a lively discussion on energy use in the built environment. Other events included tours of the new Sloan building and a career panel featuring MIT alumni working in a range of energy-related positions.

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2011