



A Plan for Action on Climate Change

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A joint statement

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Executive Summary

This statement outlines a plan for the MIT community to address climate change. This plan is the result of intensive discussions in our community led over the last year by the Climate Change Conversation Committee. It embodies the broad, fundamental agreement across our community that climate change demands society's urgent attention; that MIT has a responsibility to lead; and that MIT's moment to act is now. The plan describes risks presented by climate change and MIT's record as a leader on climate science and energy innovation. It then describes our plan for action over the next five years. Finally, the plan responds to a campus petition that we divest from fossil fuel companies. We choose not to divest. We believe that divestment is incompatible with the strategy of engagement with industry to solve problems that is at the heart of this plan.

I. What is the problem, and what is our stand?

Overwhelming evidence shows that the Earth is warmer than it was in the pre-industrial age and that most present-day climate change is associated with human activity—the emission of greenhouse gases (GHG). Primary energy use worldwide is projected to increase 60% by 2050. This will drive further warming, which could lead to unplanned migrations, competition for food and water, and societal conflict. A warming of about 2°C (3.6°F) above pre-industrial levels marks a threshold after which the resulting damage to societies and natural systems becomes increasingly grave. Protecting against this risk is known as “the 2°C challenge.” To avoid the 2°C threshold in the long term, human-driven emissions must decrease greatly by 2050 and must eventually reach zero. The world needs an aggressive but pragmatic transition plan to achieve a zero-carbon global energy system.

Our mission charges us to advance knowledge, educate students, and bring knowledge to bear on the world's great challenges. Our community is equipped to make important new contributions on climate change. Our mission tells us we must.

From MIT's inception, it has collaborated with industry (including, since the 1920s, the fossil fuel industry) to solve complex problems. Today, we support development of low- and zero-carbon technologies, guide the design and regulation of new power systems, and help MIT entrepreneurs bring clean energy solutions to market faster. The Institute has also worked closely with governments around the world on projects of great consequence. Our engagement with industry and government puts us in an effective position to accelerate climate progress.

II. What has MIT done so far?

For decades, MIT has built a record of influential climate research and of advancing the communication and policy of climate science. The MIT Energy Initiative (MITEI), launched in 2006, is one of the world's largest and most successful academic energy programs. More than two-thirds of MITEI's research portfolio focuses on renewables and energy efficiency. MIT's contributions extend far beyond MITEI to include building energy efficiency; industrial energy efficiency; transportation and mobility; and economic policy analysis and design.

III. How will MIT intensify its impact?

Academia, industry and government will need to work together to imagine the future as informed by research; to establish the policy and economic incentives to achieve that future; and to develop clear technological goals that will focus and accelerate the research and development required for success. We hope MIT can make a significant contribution to designing and jumpstarting this crucial convening work. The objective of our plan is to minimize GHG in the atmosphere and to devise pathways for adaptation to climate change. Our plan outlines the direct actions MIT will undertake to achieve this objective. Through broad consultation across the MIT community, we found these actions, described below, to have consensus support.

Improve our understanding of climate change and advance novel, targeted mitigation and adaptation solutions

As part of our Environmental Solutions Initiative (ESI), MIT is providing \$5 million to seed new research and will seek outside support for promising new work. Going forward, ESI will fast-track a portfolio of projects focused on novel solutions for mitigation and adaptation. In addition, ESI's Jameel World Water and Food Security Laboratory will provide grants to support technologies, programs, and policies for supplying water and food for the world's growing population.

Accelerate progress towards low- and zero-carbon energy technologies

MIT will collaborate with a diverse group of companies to launch eight Low-Carbon Energy Centers, enabling close to \$300 million in new energy research over five years. The eight centers are: Solar; Energy Storage; Materials for Energy and Extreme Environments; Carbon Capture, Use and Sequestration; Nuclear Energy; and three others to be developed over the next year focused on nuclear fusion, energy bioscience, and the electrical grid. We will also advance research on power systems, mobility, air transportation, and cities, and conduct an ambitious study on how best to overcome the challenges of staying within the 2°C limit.

Educate a new generation of climate, energy and environmental innovators

MIT will develop an Environment and Sustainability degree option; develop an MITx Climate Change and Sustainability credential; and explore ways to inject principles of "benign and sustainable design" throughout MIT's engineering and design curricula.

Share what we know, and learn from others around the world

MIT will provide new short courses and executive seminars for leaders in industry and government; create a public web portal to provide accurate and timely information on climate change; expand the capacity of MIT's Climate CoLab to crowdsource priorities and solutions and engage MIT alumni;

accelerate the activities of the ESI; and pursue solutions through “Solve,” an effort to convene influential thinkers and doers to drive progress on a set of great global challenges.

Use our community as a test bed for change

To improve campus sustainability and provide ways for faculty, students and staff to use the campus as a test bed for their ideas, MIT will reduce campus GHG emissions at least 32% by 2030; actively pursue new carbon-cutting strategies in campus design, construction and rehabilitation projects; eliminate the use of fuel oil in campus power generation by 2019; enact “carbon shadow pricing”; deploy an open data platform for campus energy use; and activate our campus as a living lab.

IV. The Question of Divestment

The student-led group Fossil Free MIT has presented a petition calling on MIT to divest any holdings in a group of 200 fossil fuel companies whose identified reserves, if burned, would send the global climate over the 2°C limit. We conclude that divestment and its core tactic of public shaming are incompatible with the strategy of engagement that forms the heart of today’s plan. In our judgment, a symbolic public move to divest is not the most effective way for MIT to drive progress on climate, and pursuing it would interfere with two promising strategies: active engagement and bold convening.

We find that the best way for MIT to accelerate action on the climate challenge is active engagement with organizations of many kinds, including industry partners that range from the most disruptive solar start-ups to fossil fuel giants that have mastered the challenges of delivering energy to millions of households. Furthermore, acceleration will depend on our ability to help industry and government understand each other, on the road to designing sound policy incentives. We also see a unique opportunity for MIT to serve as a convener of widely different voices and sectors to help shift the public dialogue from deadlocked argument to a constructive conversation about solving problems.

We are not naïve about the pernicious role of some segments of the fossil fuel industry in creating the current policy deadlock. We deplore the practice of “disinformation,” through which some industry players and related groups have obstructed public understanding of the climate problem. We will continue to advocate frankly with industry allies as we all work together for climate solutions, including a price on carbon; such a policy shift would change the incentives for us all and make fossil fuel companies, a rich source of technical talent, a central source of progress. We judge that we may be seeing a tipping point in that policy dynamic now. This month, the CEOs of ten of the world’s largest oil and gas companies, including six MITEI members, declared their “shared ambition” for a 2°C future.

We step up to the climate challenge with this plan. We hope everyone in our community—including those who wish we had divested—will work with us to help this vital effort succeed.

V. Conclusion

Climate change and its many interrelated problems present risks too grave to gamble with. To solve this global problem, humanity must reorder the global energy status quo. To make a serious difference, we are eager to engage everyone we can.