

To: MIT Divest

From: Maria T. Zuber, Vice President for Research 

Re: Response to “Request for information to the MIT Administration regarding the Institute’s relations to fossil fuel companies”

Date: May 16, 2020

I am writing to provide a more complete response to your “Request for information to the MIT Administration regarding the institute’s relations to fossil fuel companies.”

Part 1:

**MIT’s definition of and goals for engagement from the 2015 MIT Climate Action Plan**

1. Per the Dec. 2017 Report of the CAP Review Committee: “The Review Committee believes it is important for the MIT administration to clarify the intent of ‘engagement’ and ‘working with industry and government leaders.’ Does the administration intend to go beyond normal outreach to the community, sponsors, government officials, and the public to proposing and advocating policy actions as an institution?”

As a general matter, “proposing and advocating policy actions as an institution” has not been a major element of our engagement.

Opinions differ throughout our community – faculty, students, administrators and staff, alumni – regarding the degree to which MIT should raise its institutional voice in the public square, which issues it might choose to speak out on, and which positions it should take. With respect to climate specifically, to date we have chosen to weigh in publicly only in response to what seemed to be particularly egregious instances of public officials or entities ignoring clear scientific evidence about climate change. Two examples that come to mind are President Reif’s 2017 statement opposing the United States’ announcement of its intent to withdraw from the Paris Climate Agreement and MITEI Director Bob Armstrong’s 2018 testimony opposing the Trump Administration’s proposed regulatory changes that would relax greenhouse gas emissions standards for electric utility plants.

Notwithstanding the occasional decision to enter the fray on public policy controversies, this is not our core competence, and it seems to me not likely to be the avenue by which MIT makes

its most effective contribution to solving the problem of climate change. Furthermore, if we were to become a frequent commenter and advocate on issues of climate policy, we would risk becoming perceived as just another partisan voice. A reputation as a trusted source of objective, evidence-based information is an invaluable asset in today's communications environment, especially on critical issues at the intersection of science and policy such as the climate crisis and the Covid-19 pandemic.

2. Since 2015, what has MIT's climate-related engagement activity looked like? Generally, what have the nature of these engagements looked like and what groups has MIT engaged with?

As we began to discuss earlier this semester at a meeting in my office, MIT's climate engagement with external actors takes many forms. The most numerous are our research grants from the federal government and our research partnerships and contracts with dozens of private firms. Since the advent of the Climate Action Plan, the preponderance of these grants, partnerships, and contracts, whether measured by number of projects or expenditures, have been primarily aimed at improving our understanding of the Earth's climate in order to better protect it or developing low- and zero-carbon energy solutions to climate change. This is the case both within MITEI and for MIT as a whole.

Departments, laboratories, and centers across the Institute host a wide range of external speakers and panels on topics relating to climate change, support internships, and facilitate student research placements. MIT students work with and learn from numerous researchers and practitioners in energy- and climate-related enterprises. Faculty members author opinion pieces, field and respond to frequent media requests for expert commentary, and testify before committees of Congress regarding climate science, the need for a transition to a low-carbon future, and possible solutions for achieving the needed change.

To cite just a few specific examples of our engagement: MITEI researchers have worked with experts from across the Institute to prepare and publish reports such as *Insights into Future Mobility* (2019), *The Future of Nuclear Energy in a Carbon-Constrained World* (2018), and *Utility of the Future* (2016), and shared them widely with governmental and industry audiences that have used the reports to inform policy and business decisions. MIT has partnered with BRAC, the Bangladesh-based international development organization, to develop a climate change early warning system to assist people and nations on the front-line of the climate crisis in their adaptation efforts. We have also convened regional climate leaders and citizens to inform and catalyze climate activism and hosted congressional staff members for fact-based sessions on the reality of climate change and the need for technological R&D to develop solutions.

Each of these activities, and many more like them, is conceived and propelled by faculty, students, and staff eager to advance knowledge about climate science and inform and develop possible solutions.

3. What has been the guiding purpose of engagement and what has it tried to achieve? Why was this choice chosen as a priority?

The overarching goal of our Climate Action Plan and the engagement that goes on within it is and has been “for the MIT community to address the escalating disruption of our global climate.” (CAP, p. 2) MIT’s climate plan is different from that of many if not most universities, in that its primary focus is on helping the world solve the problem, not just reducing our own carbon footprint. The plan is grounded in the belief that our uncommon strengths, particularly in science and engineering, and our unparalleled track record of working effectively with industry to scale up and deploy practical solutions and products, will be critical elements in MIT’s response to the climate crisis.

The plan’s engagement strategy is also an acknowledgement that MIT cannot solve climate problems alone. The world urgently needs scientific and engineering breakthroughs, not only from MIT but from other research universities and technical institutes, and government and industry laboratories around the globe as well. Furthermore, the world also needs public policies that limit further emissions of carbon dioxide and other greenhouse gases, along with massive public and private investments in the development, scale-up, deployment, and distribution of zero-carbon energy sources and negative-carbon technologies. Thus, MIT’s engagement under the plan encompasses our relationships with governments, fossil fuel companies, other industrial firms, banks, public and private investment entities, insurers, other universities, NGOs, journalists, and anyone else who can help make a difference on climate.

It is important to note that when MIT announced the Climate Action Plan in October, 2015 it was with the expectation that the U.S. government would be a strong partner, indeed a leader, in the worldwide effort to halt climate change. It is an understatement to say that the policies and priorities adopted by the federal government since that time have not matched this expectation. To the contrary, they have reversed earlier progress on emissions reduction and provided support for recalcitrance, delay, and denialism by those who wish to slow the pace of the world’s transition to a decarbonized energy system.

Part 2:

**MIT’s efforts to engage the fossil fuel industry and the results of these efforts.**

1. Since 2015, how many meetings have occurred between MIT representatives and fossil fuel executives relating to climate disinformation, climate lobbying, and fossil fuel extraction practices? How many meetings are currently scheduled? Which companies have been represented?
2. Since 2015, how many informal conversations have occurred with fossil fuel executives and investor relations staff? Which companies have been represented?

3. What has been the purpose of each of these meetings? How many meetings have discussed:
  - a. Climate-related lobbying
  - b. Climate disinformation- can we trace MIT's engagement with these companies to a reduction in disinformation activities?
  - c. Development of new fossil fuel reserves beyond a 2-degree C carbon budget – can we trace MIT's engagement with fossil fuel companies to a more responsible stewardship of remaining fossil fuel resources?

As I said when we last met in person, MIT does not track the number of interactions, formal and informal, its community members have with fossil fuel executives related to these issues. We have, however, on numerous occasions, made known our dim view of lobbying against climate action, supporting climate denialism, and spreading disinformation about the gravity of the climate crisis. We have also made clear our refusal to aid, abet, or countenance any attempts by fossil fuel companies to use their work with MIT as a means to “greenwash” their activities. We will continue to do these things.

Let me speak personally on my own involvement. I regularly meet with representatives of MITEI members when they visit campus. On more than a few occasions I have conveyed messages from MIT to be delivered to the Executive Suites of these companies. In addition, I regularly meet with agencies and elected representatives in Washington. I have held appointments in both Republican and Democratic presidential administrations and meet with members of both parties. These meetings are respectful, frank and always seek common ground. While I do not deny that some days are better than others, my experiences convince me that engagement is the right approach for MIT.

4. What shareholder resolutions has MIT filed or voted on relating to:
  - a. Emissions reporting
  - b. Climate risk to company
  - c. Lobbying activities
  - d. Continued fossil fuel resource development
  - e. Development of company sustainability plans to commit to emissions reductions

The MIT endowment is invested to generate income to support its mission, including research, teaching, financial aid, operations, and maintenance. MIT has not used shareholder resolutions as a corporate engagement tool for many years. As is the case with many other large endowments, the great majority of MIT's investments are in the form of commingled funds overseen by external managers, rather than direct ownership of securities. The option to vote shares moved under the control of external managers as MIT's investment approach moved toward commingled funds.

5. How did the Shell Auditorium come to be?
  - a. What considerations are taken into account with regards to naming buildings or programs at MIT after corporations or people?
  - b. What processes exist to ensure community input and oversight?
  - c. How do individuals or corporations that give such large donations impact research decisions?

The term “Shell Auditorium” is a misnomer. Shell-USA made a gift to MIT to support the renovation of 54-100, with the new name of this lecture hall left undetermined. EAPS has developed a process for a naming contest, with a combination of open nominations from the entire EAPS community, a vote, and a committee (with majority EAPS faculty and student representation) that will select the name to submit for consideration to MIT’s Building Committee. The naming contest has not yet taken place.

More broadly, as you know, the issue of how MIT relates to external entities has been the subject of considerable thought and discussion across the institute in recent months, not only on matters relating to climate or fossil fuel companies. As a result, academic leadership convened the Ad Hoc Faculty Committee on Guidelines for Outside Engagements, chaired by Professor Tavneet Suri, and the Ad Hoc Faculty Committee to Review MIT Gift Processes, chaired by Professor Peter Fisher. These committees are developing principles, guidelines and processes for accepting outside funding. The Administration will carefully consider these reports and their recommendations, both generally and with regard to MIT’s ongoing climate-related engagements.

6. Since 2015, what concrete outcomes have come of MIT’s engagement with fossil fuel companies in influencing their activities?

As stated above, MIT’s engagement strategy is motivated by our desire to help the world solve the problem of rapid, unsustainable, and dangerous climate change. The principal way MIT’s engagement with fossil fuel companies has influenced their activities is by working with them to pursue promising ideas for decarbonizing the energy sector – encompassing power generation and transmission, transportation, industry, and buildings – with the companies providing significant funding for MIT’s research and development in this sphere.

### ***Decarbonization R&D at MITEI***

Advancing our practical knowledge of how to decarbonize the world’s economy is the goal of Pillar 2 of the Climate Action Plan. This work has been carried out primarily through MITEI and its Low Carbon Energy Centers (LCECs). Since the advent of the plan in 2015, of the 177 PIs who worked on MITEI projects, 129 were funded by fossil energy companies that are MITEI members. This research, and the dollars that support it, are at the beginning of an innovation supply chain that, over time, we expect to yield breakthrough discoveries, technologies,

methods, and products that will lead to reduced emissions, net-zero emissions, and ultimately negative emissions.

The Low Carbon Energy Centers figured significantly in the 2015 MIT climate plan; the Centers are dedicated to tackling the most pressing energy challenges related to climate change from a range of key technological and economic perspectives. The design of the LCECs was partly in response to students' and other stakeholders' question about why MITEI worked predominantly with large fossil fuel companies: the Center model enables smaller companies along different parts of the energy value chain to collaborate with MITEI, providing financial support and diverse industry perspectives to help advance these technology areas.

To date there have been at least three dozen energy-related start-ups that MITEI has supported at an early stage: eighteen projects received MITEI Seed Fund support (three of which also include students MITEI supported); fifteen are additional start-ups that students founded (including UROPs, Energy Studies Minors, Graduate Energy Fellows, and postdocs); others received different kinds of MITEI support including mentorship and connections to external funding sources. Here are just a few examples:

- Infinite Cooling, a company founded by Professor Kripa Varanasi and his research group, has developed a technology to capture and reuse water evaporating from cooling towers at power plants. The company received early support through MITEI's Seed Fund and the Tata Center for Technology and Design, and has gone on to secure additional funding. As part of MIT's commitment to having the campus become a "living lab" of climate innovation, a pilot version of this technology has also been installed at MIT's Central Utility Plant.
- The MITEI Seed Fund, the Carbon Capture, Utilization, and Storage Low-Carbon Center, and individual MITEI sponsors have supported substantial research in new carbon capture ideas. One outcome of this support is a novel electrochemical cell, developed by Sahag Voskian PhD '19 and Professor T. Alan Hatton, that can capture and release CO<sub>2</sub> with just a small change in voltage. They have founded Verdox, Inc., to demonstrate how the technology can be scaled. Voskian is now co-founder and chief technology officer at Verdox.
- Form Energy, co-founded by Professor Yet-Ming Chiang and William Woodford, a former Energy Fellow, is developing a new class of ultra-low cost, long-duration energy storage systems. Form Energy has just announced its first grid-scale pilot demonstration.
- Khethworks, founded by Katherine Taylor SM '15, Tata Fellow Kevin Simon, Victor Lesniewski SM '15, and Professor Amos Winter, an MIT startup that emerged from the Tata Center and has developed an ultra-efficient irrigation pump powered by a small, portable, and very inexpensive solar generator—optimized to serve the 30 million farmers in India's vast Gangetic Plain. Taylor is the company's CEO.

### ***Accelerating the development of zero-carbon fusion energy***

The case of Commonwealth Fusion Systems (CFS) merits a longer discussion. CFS was founded in 2018, the product of twelve years of MITEI's engagement with leaders of the Italian energy company Eni S.p.A. This new fusion start-up was able to launch out of MIT with \$50 million from Eni, much of which is being channeled back into MIT laboratory research—as well as \$8 million from Eni for fusion research projects run out of the MIT Plasma Science and Fusion Center (PSFC)'s newly created Laboratory for Innovation in Fusion Technologies (LIFT). It is important to note that the engagement here is about much more than funding – although the funding has been vital for this effort – MITEI helped Eni explore the need for diversifying their portfolio into low-carbon sources of energy, which led to their interest in fusion and the investment in CFS. CFS became the first of a new class of start-up MITEI members which further strengthens the research ties between the company and MIT. Eni's initial investment was crucial for securing additional investments in CFS. During this time, Eni also launched a new business arm, Eni Next, to focus on investing in low-carbon start-ups.

I should note here that an additional source of support for MIT's fusion research has been the federal government. MIT and other research universities have relied heavily on federal funding for energy research and development for decades. Such funding is, of course, subject to governments' shifting priorities over time. Private investors and major philanthropists have also increased their commitments in this field, but ensuring an adequate stream of funds for the research community to conduct enough promising projects to ultimately produce the breakthrough innovations the world needs continues to be one of the central problems we face.

### ***Improving the disclosure of the financial risks of climate change***

Another way we expect to influence the activities of fossil fuel companies is the increasingly active role MIT is playing in the movement to obtain more accurate and publicly available information from companies, and fossil fuel companies in particular, about financial risks related to climate change. My office convened a workshop to explore these issues in late 2018 that included representatives of investment firms, fossil fuel companies, climate scenario producers, NGOs, and academics. An MIT team then published a report in the fall of 2019 (*Climate-related Financial Disclosures: The Use of Scenarios*) that identified shortcomings in oil and gas companies' current climate-related disclosures and made recommendations for making their disclosures more complete, more comparable across companies, and more transparent. This work is continuing under the leadership of researchers at the Joint Program on the Science and Policy of Global Change.

A final thought about engaging with and influencing fossil fuel companies: During the last few years, several fossil fuel companies have committed to increasingly aggressive levels of decarbonizing their operations. In addition, some companies have dropped their membership in some of the most extreme anti-climate organizations such as the American Legislative



Exchange Council (ALEC). We have good reason to believe that continuous work and dialogue with MIT has played a role in bringing about these actions, but how much our contribution has been is impossible to say. We are also aware that some companies have continued to lobby for reduced regulation of carbon emissions and against taking stronger action to halt climate change. We will continue to express our disapproval for this conduct, and to make clear to our community and the broader world that working with a company on particular projects does not constitute a blanket endorsement of that company's activities or positions.

Part 3:

**MIT's financial involvement with the fossil fuel industry.**

1. What funds did MITIMCo have invested in fossil fuel equity in calendar 2019 and 2018?
  - a. Public equity.
  - b. Private equity.

As noted above (Part 2, Q 4) the vast majority of MIT's investments are in commingled funds overseen by outside managers. MIT currently has holdings in well over 5,000 different public and private securities across hundreds of different funds.

2. What activities are fossil fuel companies funding at MIT?
  - a. Lab groups receiving funding from fossil fuel companies, groups inside and outside of MITEI
    - i. Breakdown of the end use of this funding. I.e., Is fossil fuel funding going towards low carbon energy research, computational methods, novel fossil fuel extraction techniques, etc.?

Of more than five dozen organizations supporting research at MITEI, twelve fossil energy companies have funded projects over time. The research areas these companies have funded include basic energy science, climate and environment, sustainable energy access for the developing world, energy efficiency, improvements to existing energy technologies, fusion energy, nuclear fission, power distribution and energy storage, renewable energy, and transportation.

- b. Funding to other initiatives and departments not included in research funding.

A full compilation of this information across the entire Institute does not exist; we will update this information should more become available. Here is the information we currently have:

MITEI Education Program:



- Approximately \$20 million for 343 Energy Fellows since 2008
- 170 UROP students from summer 2010 – January 2020 (funding ranges from \$1,000 to \$6,000 per project, depending primarily on the length of the UROP supported; amounts on the higher end of the range are more common)

Center for Energy and Environmental Policy Research (CEEPR): Approximately \$2 million since 2008

Joint Program on the Science and Policy of Global Change: Approximately \$9 million since 2008