

Science and policy can catalyze each other, EPA head says

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EPA Administrator Lisa Jackson. Image courtesy of the Environmental Protection Agency

Technological innovations have the ability to change environmental policies just as much as those policies can affect innovation, U.S. Environmental Protection Agency (EPA) Administrator Lisa P. Jackson said during a visit to MIT on Friday, Apr. 15. In delivering the annual Henry W. Kendall Memorial Lecture, Jackson urged students and faculty at the Institute to look for sustainable solutions to environmental problems.

Jackson, a chemical engineer, addressed the relationship between science and environmental policy, and spoke about the chicken-and-egg nature

of her job. “How do we implement the laws we have, and try to make sure we don’t stifle innovation ... but also ultimately realize we need legislation to get there?” she said.

She noted that environmental policies often act as incentives for scientists to develop new technologies. At the same time, new inventions can spur changes in environmental laws. “We catalyze each other,” she said.

A symbiotic relationship between science and environmental policy is especially crucial for the issue of climate change, Jackson said. Earlier this month, members of Congress drafted measures that would have prevented the EPA from regulating carbon dioxide and other greenhouse gases under the Clean Air Act, a “fairly draconian move,” according to Jackson. The Senate failed to pass the measures, and President Barack Obama has said he would veto any similar bills in the future.

But the issue is likely not dead, Jackson said, and when it comes time for Congress to draft the federal budget for 2012, “we’ll probably see this battle played out again.” In the meantime, provided the EPA’s authority remains intact, the agency will start to set milestones for industries — the energy sector in particular — to curb greenhouse gas emissions, she said. Looking ahead, Jackson said she would like to see the conversation on climate change shift from politics to science, to focus on developing technologies to minimize greenhouse gas emissions. Such innovations, she hopes, could ultimately push climate change policy forward.

“I think we do have policy cobwebs all over the place right now,” Jackson said. “I will admit I have a bias that leads me to believe — partly as an engineer — that we have to not settle for standards that are not progressive enough.”

Dispelling doubts

Jackson said some elected officials and industry members cast the EPA as the bad guy when the agency attempts to revamp environmental regulations — a reaction that often reminds her of a scene in the 1980s cult classic “Ghostbusters,” in which an EPA official pays a visit to the Ghostbusters office and arrests the team for allegedly storing hazardous chemicals in their basement. The EPA orders the Ghostbusters to shut down operations, which inadvertently frees hundreds of ghosts to spread mayhem throughout New York City.

“Oftentimes in this country, any environmental or clean-energy idea or policy is met with one sort of knee-jerk reaction,” Jackson said, often of “doom and gloom” relating to cost; industries claim that meeting stricter environmental standards is exorbitantly expensive, she said.

Jackson said the antidote to such knee-jerk reactions may be technological innovation, and she called on scientists at MIT and other research institutions to develop sustainable and cost-effective solutions to help meet the country’s environmental and clean-energy goals.

MIT President Susan Hockfield, who introduced Jackson, noted how the EPA administrator, just days before Hurricane Katrina hit, drove to New Orleans to transport her mother to safety.

"So she knows, in the most direct way, what we risk when we fail to manage our relationship with the forces of nature," Hockfield said.

Jackson’s work addressing the country’s environmental and energy issues mirrors work underway at MIT, Hockfield said, citing research by MIT faculty that provides cost-effective and sustainable solutions to [climate change](#), including technology that prints solar cells on waterproof paper, an innovation that may significantly reduce the price of installation, a key cost of harvesting solar energy.

“I applaud MIT’s commitment to making sure solutions don’t cause one problem by fixing another,” Jackson said.

Early intervention

According to Jackson, another area in which scientists and policymakers can work together is in the arena of toxic chemical control. She said the EPA uses the country’s Toxic Substances Control Act, established in 1976, to regulate the development of new chemicals, but described the act as “widely considered fairly toothless.”

“The laws in this country say, ‘I’ll develop whatever chemistry you need,’ and that’s a good thing, we want more innovation,” Jackson said. “But it relies on government to oversee the end result ... and it doesn’t push innovation on the front end so it is greener from the beginning.”

Jackson said the country needs a new toxic chemicals law that encourages “green chemistry,” in which substances are specifically developed to be safe and sustainable from the start.

“Even though we don’t face the same kind of bread-and-butter [environmental problems](#) with the air and water and land pollution we had 40 years ago, we have to think about solutions that are as transformative as the Clean Air Act or the Clean Water Act was for our country,” Jackson said. “The ideas will start with technology and will end up with public policy.”

The Kendall lecture, sponsored by the Department of Earth, Atmospheric and Planetary Sciences and the Center for Global Change Science, honors the legacy of Henry W. Kendall, a MIT physics professor who received the Nobel Prize in 1990 for providing experimental evidence for quarks. Kendall founded the Union of Concerned Scientists in 1969 and throughout his life was deeply

committed to finding scientific solutions to environmental problems.

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