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George Shultz – an environmentalist and technologist ahead of his time

Less discussed than his foreign policy experience is Schultz's no less important role as a visionary problem solver in the interrelated issues of climate change and technology.

By Susan Hockfield and Ernest J. Moniz Updated February 23, 2021, 3:00 a.m.

In 2006, we established a campus-wide, cross-disciplinary energy program, the MIT Energy Initiative, to develop new solutions to climate change. The success of our outsized ambition to accelerate academic discovery that translated into industry applications required a commensurately ambitious external advisory board. We audaciously reached for the stars and invited George Shultz to be the inaugural chair. We had an edge, in that he was a student and faculty member at MIT in the 1940s and 1950s. His enthusiastic endorsement augured well for the enterprise, and little did we know that he would continue undiminished in that role, with our appreciation and affection, into his 99th year.

Many have noted since George's death, on Feb. 6, the wisdom he brought to national security and foreign policy over many decades. He was instrumental in ending the Cold War as President Ronald Reagan's secretary of state and shaped nuclear arms control discussions from the 1980s to today. However, much less well known are his passions for the environment and for game-changing technology, recognizing the daunting dual potential for great civilizational progress and substantial harm.

George was pragmatic. As secretary of state, he followed the scientific debate about the

shrinking ozone layer and the anthropogenic source of the problem: emission of chlorofluorocarbons from refrigerants and other common products. He recognized that while the science was compelling, acceptance was not assured. In 1987, George advised Reagan that the United States [needed a climate insurance policy](#), a low-cost strategy to provide protection against catastrophic harm, and he had confidence that science would yield an alternative. That message persuaded the president to support the Montreal Protocol that phased out CFCs.

George saw a parallel with climate change: The United States again needed an insurance policy through the transition to clean energy technologies that would drive down greenhouse gas emissions. He developed a strategy, along with Jim Baker and others, that had the mark of a superb negotiator. Their "Republican plan" started with a substantial fee on GHG emissions, reflecting the economists' view that markets drive the most efficient solutions. Then, all the fee revenues would be returned to households as a carbon dividend, appealing to social progressives. With the fee in place, certain duplicative industry regulation and financial incentives for clean energy could be eliminated, appealing to conservatives. Finally, carbon border adjustments on imports from countries with less stringent

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emissions reduction programs would guard against leakage of industries and jobs.

While many might disagree with some specific element of the plan, George captured the essence of a good negotiator's position: a coherent set of proposals with elements appealing to the multiple stakeholders needed to build a political coalition. The Shultz proposal, since its inception, has generated bipartisan discussion, at least as a starting point for complex negotiations to reduce carbon emissions.

George forcefully encouraged clean energy technology breakthroughs to enable climate solutions at low or no net cost. He embraced MITeI's premise of inventing clean energy technology in partnership with industry. He was an effusive champion of the faculty, staff, and students dedicated to finding solutions — particularly at MIT, the University of Chicago, and Stanford, his academic faculty homes over the arc of his long career. George sought game changers, technologies that would transform energy services and markets: natural gas, solar, energy storage, efficient lighting, electric vehicles. He delighted in his own two electric vehicles: "We're driving on sunshine, and it's free!"

He kept an eye out for applications that would help his favorite constituency, the battlefield soldier, who depends on long and vulnerable supply lines. George knew that energy technologies would transform military operations, and he reveled in unrolling his photovoltaic blanket, showing how a soldier in the field could recharge the advanced electronics that could save his or her life and help execute the mission.

In his last years, George increasingly turned toward thinking about how the clock-speed of technology innovation — gene editing, artificial intelligence, 3-D manufacturing, and more — would challenge governance in the 21st century. While he marveled at the possibilities for good, he recognized the potential for catastrophic harm if misapplied. We will miss George's penetrating wisdom as we navigate these treacherous terrains that do not respect national borders. His second century was much too short.

The full measure of George Shultz adds technology and the environment to his focus on national security and foreign affairs. He understood the critical and delicate interrelationships among them. His full measure also must include his humanity, the twinkle in his eye, and his great sense of humor. George was masterful in bringing together people and ideas from disparate disciplines to find new kinds of solutions to daunting political, technological, and organizational problems. He created communities of shared concern, which he recognized was the way to get things done and to have lots of fun doing so, frequently reminding us, "If you want to land together, you better take off together."

We, along with many others, are infinitely grateful for the privilege of taking off with George Shultz on one of his many expeditions to a better future.

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