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While the Window is Open on Global Warming....

Politics is a process whereby policy entrepreneurs attempt to link three separate conversations about problems, policy ideas, and political conditions [1]. Given the right conditions, a window of opportunity opens. Suddenly it becomes possible to elevate an issue on the policy agenda and link a plausible solution to the problem

We have reached such a moment for global warming. Over decades, the “problems” conversation has built momentum so that the each successive scientific assessment by the Intergovernmental Panel on Climate Change asserts more confidently that human-caused global warming is real and worrisome [2]. Spectacular events like Hurricane Katrina have not yet been fully incorporated into the story line, but unequivocal temperature trends and visibly melting glaciers are galvanizing activism

The “solutions” conversation is loud and crowded, more like a trade show than a discourse. Solar, wind, biomass, and nuclear energy advocates are all there, as are the boosters of carbon sequestration, hydrogen, energy efficiency, and market efficiency. Economists have weighed in with analyses suggesting that the solutions to global warming will cost something, but will not break the bank [3]

Political conditions also appear to be ripe, with the skeptical U.S. president now an isolated lame duck, worries over the Middle East focusing public attention on the risks of fossil fuel dependence, and energy prices still relatively high. Every expert with anything to say on the topic has more speaking invitations than they can handle.

Oscar winner and politician Al Gore is one who has stepped into the policy entrepreneur’s role. He’s certainly not alone. Outside the United States, leadership on global warming comes from many heads of state. Within U.S. borders, leadership has come from the heads of

states. California’s governor set stringent greenhouse gas emissions targets in 2005, and the state legislature endorsed them in 2006. New Jersey’s governor announced equally strict targets in early 2007. Mayors all over the United States have established similar policies. Heads of companies and presidents of universities have pledged that organizations will reduce emissions.

These U.S. actions have been made easier because others in the industrialized world have already committed to the Kyoto Protocol. A low carbon future is easier to imagine now that a carbon emissions offset trading market exists and a global treaty is in force, however inadequate they may be

Some argue that public concern has reached a tipping point, so that the slow accumulation of scientific evidence has finally overwhelmed and changed the conventional wisdom. This may be true, but I am skeptical that it matters yet. Global warming has made it onto the systemic agenda but it is just beginning to climb the institutional agenda in much of the world. I believe that the policy window metaphor is more apt. Think of air pollution, or poverty, or even racism: people agreed that these existed long before politicians did anything about them.

So, then, how long will this current window of opportunity remain open? A drop in oil prices, a cold winter, or a moment of peace in the Middle East could quickly make people lose interest. Many politicians remain skittish because of implementation difficulties with Kyoto, slow improvements in the cost-competitiveness of fossil fuel alternatives, and the realization that there are both winners and losers to the global warming solutions game.

Indeed, the big problem right now is with the solutions. We do not agree on exactly what to do. Every non-fossil energy supply technology has drawbacks.

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Wind power is space-intensive. Solar power is very costly. Biofuels close the carbon loop but rev up the nitrogen cycle. Nuclear power is not yet proliferation-proof. Carbon sequestration works only in certain locations. We are left advocating applied research to improve the current supply options.

Two solutions that appear attractive today are on the demand side of the equation: energy efficiency and policy signaling. Efficiency takes high-tech and low-tech forms, and it brings both financial and environmental benefits. Policy signals help consumers and producers realign their expectations about the future, thereby diverting investment away from carbon emitting activities. The economy easily re-optimizes to new conditions, but we need to convince actors that new conditions have arrived

Also needed is basic research to develop scientific underpinnings for a disruptive new technology "X." With the problem of global warming emerging on a time scale of decades to centuries, some of the solutions

will also emerge at that time scale. A properly balanced policy portfolio will include bets on energy biosciences, energy materials sciences, and high energy physics

Truly aggressive government action right now is thus unlikely. But governments should be capable of signaling their general intent to constrain the growth of carbon emissions, especially by encouraging investments in energy efficiency and expanding research on solutions. I encourage you to get engaged, participate in the conversations about the problem and its solutions, and act when your moment arrives.

References

- [1] J.W. Kingdon, *Agendas, Alternatives, and Public Policies*, 2nd ed. New York, NY: Longman, 1995.
- [2] Intergovernmental Panel on Climate Change, Scientific Assessment: Policymakers Summary, 2007; www.ipcc.ch.
- [3] J.P. Weyant, F.C. de la Chesnaye, and G.J. Blanchard, "Overview of EMF-21: Multi-gas mitigation and climate policy," *Energy J.* (Special Issue on Multi-Model Analyses of Multi-Greenhouse Gas Mitigation Policy), pp. 1-32, 2007.

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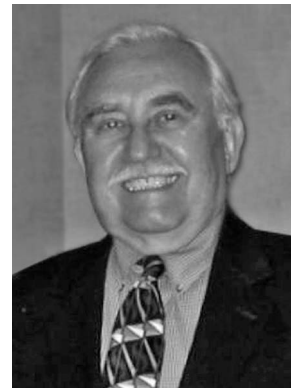
Long-Time IEEE-SSIT Volunteer Robert H. Brook Dies

Long-time IEEE-SSIT volunteer Bob Brook recently passed away. As an active member in the development, growth, and management of the Society for Social Implications of Technology (SSIT), he held numerous positions and posts from its inception, most recently as Membership Chair. Professionally, Bob worked as a communications engineer in the defense industry on Long Island.

Bob had a unique point of view on many topics and

a wry sense of humor. Although you might not always agree with him, he was a kind man and dedicated to the goals of SSIT. Always steadfast in his efforts to keep SSIT

focused on being a successful IEEE Society, his dedication and spirit will be missed.



Bob Brook

SSIT Members Create Web Logs

At least two SSIT Board of Governors members now write web logs (blogs) that may be of interest to *IEEE T&S Magazine* readers.

Steve Unger has recently initiated a blog primarily on technology and society issues. The first entry was about e-voting systems. "It appears to me that this is a case where the use

of high technology is not only unnecessary, but is counterproductive," says Unger. Unger's blog URL is: <http://www1.cs.columbia.edu/~unger/myBlog/endsandmeansblog.html>.

For about a year, Karl Stephan, IEEE-SSIT Treasurer, also has authored a web log, his on engineering ethics. That blog's URL is: <http://engineeringethicsblog.blogspot.com/>