

Toward 21st Century Environmental Protection: Policies, Technologies, and Institutions

Executive Summary of the Discussions

On November 14-15, 2019, the Center for Environmental Policy at American University in partnership with the Yale School of Forestry and Environmental Studies convened practitioners and thought leaders to address the critical issues for advancing environmental protection in the future. Major themes were:

1. Managing the environment requires greater issue integration—across water, air, land, waste, climate change, conservation, biodiversity and others — as well as linkages with broader issues like energy, the economy, and equity.
2. Emerging technologies offer both challenges and opportunities for progress toward a sustainable future.
3. Progress going forward will require efforts not just by federal officials, but also by state and local governments as well as business and civil society.
4. New policy frameworks and tools will be essential for greater environmental progress, especially a shift toward more use of market mechanisms, information technologies, and other breakthroughs.
5. Greater focus on incentives, investments in environmental progress, and innovation will be required.

Over the day and a half symposium, a series of keynote addresses and panels grappled with the issues identified above, among others.

Opening Keynote Address: Nse Obot Witherspoon, Executive Director, Children’s Environmental Health Network

- Nse Witherspoon presented an overview of various environmental threats to children's health and the status of various policy actions that affect children.

Panel 1: Applying Innovative Strategies and Solutions

1. Moderator: Daniel Fiorino, Director, Center for Environmental Policy, American University School of Public Affairs
2. Erin Fitzgerald, Chief Executive Officer, U.S. Farmers & Ranchers Alliance
3. Jennifer Silberman, Founder and President, Creative Disruption
4. Jonathan Wiener, William R. and Thomas L. Perkins Professor of Law, Professor of Environmental Policy, Professor of Public Policy, Duke University

Key Points from the Discussion:

- We have seen an evolution from entirely technology-based solutions to use of market incentives and information disclosure. The solutions of the 1970s cannot be the same as solutions for the 2010s.
- In addition to rethinking specific tools, we need to move toward a more adaptive, learning-based approach that recognizes the complexity and dynamism of problems. A static approach will not work.

- Within the business sector, there are opportunities in supply chain management, use of and alignment with science-based targets, and in moving from linear to circular business models. We should seek ways of linking these trends to the public policy tools available for achieving policy goals.
- Information and metrics are critical in any area of problem-solving. Effective policy requires good data and measurement; nutrient trading is one such example if it is to be done well.
- We need to be more creative and innovative in addressing opportunities in the agricultural sector. Not only are many issues focused in that area there are multiple economic and business opportunities. How will we grow food in the face of climate change?
- Economic tools like a carbon tax have value, but they need to be designed to be adaptive, efficient, and based on sound data and metrics. Tools matter, but so do ways and contexts in which they are applied.

Panel 2: Strengthening Environment and Energy Linkages

1. Moderator: Janet Peace, Senior Vice President of Policy and Business Strategy, Center for Climate and Energy Solutions
2. Stephen Harper, Global Director, Environment and Energy Policy, Intel Corporation
3. Karl Hausker, Senior Fellow, World Resources Institute
4. Sarah Ladislaw, Senior Vice President and Director and Senior Fellow, Energy and National Security Program, CSIS

Key Points from the Discussion:

- These linkages have always existed, but with a larger scale of impacts, they are on a more global scale, with social and economic consequences. Many problems and solutions lie with energy systems.
- Managing the impacts of climate change means at least getting below 2 degrees Celsius by 2050, net zero emissions by then, and negative net emissions after that. We are currently not on that path.
- Renewable energy will have to be augmented by nuclear, hydro, biofuels, and carbon capture, utilization and storage (CCUS). We need ambitious but realistic goals.
- Climate and environment clearly intersect with national security. Major powers are renegotiating their power in the context of a changing energy landscape. Climate change is a national security issue.
- The narrative of energy scarcity is gone; the issue now is the many consequences of energy production and consumption. This means that many fossil fuel resources will have to be left in the ground.
- Governance of energy systems is increasingly important.
- Electrification will place major demands on energy systems—perhaps two to four times as much. We need to use grid infrastructure (the smart grid), technology, and capabilities as solutions.

Lunch Keynote: William K. Reilly

Bill Reilly offered his thoughts on the major trends in environmental issues and where we are likely to be globally within the next few decades.

Panel 3: Communicating about the Environment

1. Moderator: Monica Medina, Founder and Publisher, Our Daily Planet; former General Council, NOAA
2. Paul Bledsoe, Adjunct Professorial Lecturer, Center for Environmental Policy, American University
3. Thomas Easley, Assistant Dean of Community and Inclusion, Yale School of Forestry & Environmental Studies
4. Maggie Stogner, Director, Center for Environmental Filmmaking, American University

Key Points of the Discussion:

- Any approach to environmental and climate communication must appreciate the role of culture and the need to be sensitive to the audience.
- We need to think in terms of communicating with different generations, social groups, perceived self-interest, and levels of expectation.
- Communicating about the environment is about storytelling; many formats (including film) may be used so communicate successfully about the environment. We should not rely only on elites to communicate on these issues and need to be sensitive to the audience we are communicating with.
- The key is not only to inform people or make them aware but to *activate* them to change their behavior in needed ways.
- A positive messaging approach will usually work better than one based on fear. Optimism (we can solve problems and create opportunities) is more effective than a doomsday approach.
- It may make sense to disaggregate the climate issue and see it in terms of a series of small, manageable problems. Climate is not just an environmental issue but one of safety, costs, and national security.

Panel 4: Using New Technologies

1. Moderator: Jo Anne Shatkin, President and Founder, Vireo Advisors
2. Amy Jaffe, David M. Rubenstein Senior Fellow for Energy and the Environment and Director of the Program on Energy Security and Climate Change, Council on Foreign Relations
3. David Rejeski, Director, Technology, Innovation and the Environment Project, Environmental Law Institute
4. Sally Tinkle, Senior Advisor, Science and Technology Policy Institute

Key Points of the Discussion:

- Technology transitions have extremely long lag times. We need to recognize this and incorporate this into our thinking about technology innovation.
- Technology is more decentralized than in the past. Assessing technologies is challenging but essential.
- We will be relying more on methods like artificial intelligence. Who writes/controls the algorithms? There are big issues of who will control the technologies and how that affects innovation processes.

- Specific technologies will play a role; additive manufacturing, nanotechnology, synthetic biology, and blockchain are only a few of many.
- If the US continues its' planned withdrawal from the Paris Agreement on climate change and other such international forums, other nations will increasingly set standards for US firms; countries in Asia are adopting EU, not US standards. This is a major lost opportunity for US firms and technology.

Panel 5: Strengthening and Engaging Institutions

1. Moderator: Neil Kerwin, President Emeritus; Professor of Public Administration and Policy, American University
2. Leah Allen, Founder, Mobilize Green
3. Derry Allen, EPA Alumni Association
4. Tracy Mehan, Executive Director, Government Affairs, American Water Works Association

Key Points of the Discussion:

- What changes must we make in institutions? What kind of collaborations across sectors and levels of government will be needed? How do we develop needed skill in the next generation?
- Policies are only as good as the institutions devising and managing them. The range and complexity of the issues discussed in this program will challenge institutions in novel ways.
- The workforce is changing rapidly, young people entering the environmental field look differently, think differently, and operate differently than in past generations; they must be motivated differently as well.
- Bottom-up adaptation of institutions is important; local government innovation and change will be an area of opportunity. Bottom-up watershed governance offers lessons and opportunities.
- One governance opportunity is in utilities; they can be an anchor for the future. Institutions need to be accountable politically but also must operate with some degree of insulation from political influences. Challenges to rate-setting by utilities are an illustration.
- Financing and accounting for the costs of environmental issues in prices and budgets are significant institutional issues. Innovative ways of financing will be important on the policy agenda.

Panel 6: Reframing Environmental Protection: Big Ideas for the 21st Century

1. Moderator: Juliet Eilperin, Senior National Affairs Correspondent, Washington Post
2. Dan Esty, Hillhouse Professor of Environmental Law and Policy, Yale School of Forestry & Environmental Studies and Yale Law School
3. Linda Fisher, former Vice President Safety, Health and Environment and Chief Sustainability Officer, Dupont; former Deputy Administrator, EPA
4. Jason Grumet, President, Bipartisan Policy Center

Key Points of the Discussion:

- Big ideas for this century include building in systems approaches; finding ways to account for externalities; engaging non-governmental institutions and actors in problem-solving; and thinking in appropriate time scales.

- Public policy faces challenges in balancing between stringent goals and flexibility, certainty and the ability to adapt, and short-term and long-term planning and implementation.
- Solutions will need to be bipartisan if they are to be durable.
- Goal setting must be realistic as well as ambitious. Getting to agreement on any issue is powerful but we must be realistic as well.
- Environmental and energy policies should be ambitious and effective but equitable: How do we engage affected communities? What is the role of citizen science?
- State and local governments are leaping ahead. Some industry leaders are also going beyond EPA and other agencies.
- Transparency is critical—what if corporations had to publicly disclose externalities? The Toxic Release Inventory (TRI) is a good starting place. A modernized TRI could provide incentives for managers to reduce risks and vulnerabilities.

Closing Keynote: Richard Newell, President Resources for the Future

- Richard Newell gave an overview of major trends in energy and the kinds of actions that are needed in a carbon-constrained world.

Closing Discussion: Conclusions and Path Forward

1. Dan Esty, Hillhouse Professor of Environmental Law and Policy, Yale School of Forestry & Environmental Studies and Yale Law School
2. Daniel Fiorino, Director, Center for Environmental Policy, American University School of Public Affairs

Key Points of the Discussion:

- A top priority should be to engage future leaders in addressing the challenges discussed over the last day and a half. They have the most at stake.
- Public engagement could be enhanced through better use of technology with tools like the TRI.
- Gridlock remains a significant barrier, however, government and others should adopt sustainability as a framework for better policies and programs.
- Rejection and misuse of science is a major challenge; we to strengthen science and technology education.
- Environmental issues and problems need to be connected to people's lives to stimulate action.
- Economic incentives and criteria are important; but in the end, these are moral issues.
- It is important to identify the moral values that motivate people to act on environmental issues.
- There should be efforts to democratize environmental protection: right-to-know, better data, justice.
- Discussions of technology innovation should give ample attention to bringing innovations to market.
- More effort needs to be paid to identifying, developing, and working with the next generation of leaders.

- Adaptation and resilience for climate and generally should be a larger area of focus and attention.
- Rural areas have an interest in the environment but often are not receptive; how do we engage them?
- Our policies should be designed to stress policies that emphasize opportunities for individual choice.
- A carbon tax would be valuable but will not be simple to design or implement.
- We should seek better ways of relating to the economic and other needs of depressed communities.
- Policies should be designed in general to set ambitious, stringent goals but allow flexibility on means.
- We need to learn from history, including the conservative case for environmental protection.