



Summary from May 6 Stanford Climate Conference

Thanks for helping make Stanford's May 6th conference on "Setting the Climate Agenda for the Next U.S. President" such a success. We had a full house at Stanford, and hundreds more watching online.

The terrific line-up of speakers advanced important observations and recommendations about how our next President might approach climate change-related issues and advance a successful agenda. All of the speakers agreed that, regardless of who wins the election, he or she will need to forthrightly address the impact that climate change already is having on our environment and our economy. He or she should advance a thoughtful agenda that engages key stakeholders in energy, infrastructure, land use, and many other sectors, as well as impacted state and local governments and, importantly, the international community.

Availability of Conference Presentations

All of the presentations made at the conference are now available online, including both the speakers' individual presentations (which averaged about 15 minutes in length and are well worth your time) and in the provocative, moderated discussions that followed all of the individual presentations (also worth your time!). Here is the link:

<https://www.youtube.com/playlist?list=PLVC5RXohm34X63ZOPzsin7zplyzpNXlhF>

By way of reminder, the presentations that you can find online include all of the speakers involved in the conference, along with moderated discussions, listed here in the order of their presentations:

Former Governor **Jennifer Granholm**

Former Secretary **George Shultz**

Arun Majumdar – Co-Director, Stanford Precourt Institute for Energy; former Acting Undersecretary for Science and Energy, U.S. Department of Energy; former Director, ARPA-E, DOE

Jagdeep Bachher – Chief Investment Officer, University of California system; representing the UC system in Bill Gates' Breakthrough Energy Coalition

Reed Hundt – Former Chairman, Federal Communications Commission; CEO, Coalition for Green Capital

Andy Karsner – Managing Partner, Emerson Collective; Senior Strategist, Google X; Stanford Precourt Energy Scholar & Former Assistant Secretary for Efficiency and Renewable Energy, DOE

Michael Picker – Chair, California Public Utilities Commission; former Senior Advisory for Renewable Energy for Governor Jerry Brown

Nancy Pfund – Founder and Managing Partner, DBL Partners

Dan Reicher— Executive Director, Steyer-Taylor Center for Energy Policy and Finance; former Assistant Secretary of Energy; former Director, Climate Change and Energy Initiatives, Google

David J. Hayes – Visiting Lecturer in Law, Stanford Law School; former Deputy Secretary, Department of the Interior

Kate Gordon – Vice Chair for Climate and Sustainable Urbanization, Paulson Institute; former VP for Energy Policy, Center for American Progress

Jim Connaughton – President and CEO, Nautilus Data Technologies; Board, former Chairman, White House Council on Environmental Quality

John Podesta, former Chief of Staff for President Clinton and former Counselor to President Obama

William K. Reilly – Senior Advisor, TPG Capital; former Administrator, Environmental Protection Agency

Steven Chu – Professor of Physics and Molecular & Cellular Physiology, Stanford University; former Secretary of the Department of Energy

[Discussion moderators included **David J. Hayes** (Stanford Law School); **Michael Wara** (Stanford Law School), **Sally Benson** (Co-Director of the Precourt Institute for Energy), **Buzz Thompson** (Co-Director of the Woods Institute for the Environment), and **Bruce Cain** (Director of the Bill Lane Center for the American West).]

Key Conference Take Aways

I have summarized below some of the key take aways from the conference. There was some divergence about how the next President might most effectively approach the climate issue (which is not surprising, given that experienced hands from both sides of the aisle participated in the conference), but there was a remarkable degree of coalescence around a number of key themes.

Caveat: The conference was not designed to provide a comprehensive list of recommendations for the next President. Indeed, speakers were encouraged to lean into creative ideas, and give less attention to proposals that are commonly identified for consideration.

Note also that several of the most important observations and recommendations will be fleshed out by the speakers, and other contributors, in written papers that will be

presented and discussed at a Stanford-sponsored event at the National Press Club on September 15, 2016. Mark your calendars for that date.

The key observations and recommendations highlighted by speakers in the conference fall into two buckets:

- Substantive Observations/Recommendations for the next President; and
- A Potential Organizational/Governance Agenda for the next President.

I. SUBSTANTIVE OBSERVATIONS/RECOMMENDATIONS FOR THE NEXT PRESIDENT

General Themes

Innovation and Job Creation

- Several speakers made a strong, optimistic and non-partisan case for viewing the climate change challenge through the positive lens of unleashing U.S. competition, innovation, and job creation.
- The President should rally the U.S. innovation economy -- the U.S.'s "bread and butter" -- as being particularly well suited to take on the climate challenge.
- The demand side of the equation, and the economic opportunity that it provides to the U.S., is enormous.
 - Climate change puts the need for innovation in a global market context, providing global opportunities for U.S. innovators, financiers, and job-creators.
 - In addition to tackling the carbon-heavy existing energy infrastructure in the U.S. and around the world, the global need to provide electricity to the 1.3 billion people who currently are without it will provide significant new demand for U.S. products.
- Here in the U.S., several states already have seen substantial job growth in the energy sector due to the implementation of clean energy.
- The next President can accelerate job growth by providing financial incentives for states that exceed clean energy goals, and by facilitating the siting of new ventures and industries that match the states' needs and existing industrial eco-systems. States might be measured for awards based on advances in workforce development, permit streamlining, access to capital, and the like.

(See generally Granholm; Shultz; Majumdar; Connaughton)(note: speakers identified under subject areas in this outline were among the speakers who addressed some aspects of the area during the conference.)

Establishing an Effective R&D and Deployment "Ecosystem"

- Mission Innovation, the Breakthrough Energy Coalition, and other initiatives to increase R&D in the energy area were applauded. Speakers emphasized, however, the importance of closely tying government-sponsored R&D activities with private industry research investments, potentially through a new Presidential initiative that would establish joint

research collaboratives that are supported by both private and public entities and that have, from the outset, the goal of **bringing** promising clean energy innovations to scale.

- A deployment-oriented ecosystem will need strong private sector support, both from sponsoring companies, and from institutional investors who have the wherewithal to invest the billions of dollars needed to bring clean energy to scale. The President has an opportunity to promote partnerships and bring together a strong community of interests from across the private and public sectors to create a successful ecosystem that can scale up clean energy. The traditional approach of “handing off” R&D for private sector up-take will not meet the clean energy challenge on an acceptable timeframe.
- Adopting an R&D focus that emphasizes scalability and deployment will require “innovation” in more than technology. Innovation also will be needed in finance, institutional structures and regulatory systems so that barriers to bringing clean energy solutions to market can be removed.
- The next President should work with the R&D community to promote the development of small, modular systems that can be deployed and improved in an iterative basis. This will accelerate innovation and lead to quicker scale-up of new systems.
- The President should turn to the “A” list of government players, including the Department of Defense, to serve as “early adopters” and facilitate the deployment of new technologies.

(See generally Majumdar, Bachher; Connaughton; Shultz.)

Incentives and Tax Reform

- Several speakers from both sides of the aisle expressed support for a revenue neutral carbon tax as a means of enabling the market to more accurately reflect the true costs of fossil fuels and facilitate increased competition and innovation. Because a carbon tax is unlikely to be adopted in the near term, several speakers recommended that the next President focus on providing support for clean energy tax incentives – including for storage -- and the removal of legacy fossil fuel incentives.
- One speaker recommended that the next President revise the corporate tax rate, repatriate the trillions of dollars that corporations have parked overseas, and reinvest proceeds in clean energy. Bringing dollars back to the U.S. for reinvestment here also should reduce the “export” of carbon emissions that are generated overseas, and financed by U.S. companies.
- Another speaker recommended that the new President advocate for the application of long-standing grant and incentive programs to emerging clean energy applications (e.g., the Community Reinvestment Act’s applicability to low-income solar installations).

(See generally Shultz; Majumdar; Chu; Podesta; Connaughton; Pfund; Reilly)

Addressing Economic Dislocation

- The next President should forthrightly address economic dislocation caused by changing energy markets with focused retraining programs and providing assistance in locating new, clean energy jobs in stressed communities.

(See generally Shultz; Reilly; Pfund.)

Sector-Based Observations/Recommendations

Electricity/Utilities

- In some areas of the country, the electricity/utility sector has been facilitating the pivot to a cleaner energy economy through renewable portfolio standards, net metering, etc. However, the record is decidedly mixed and many incumbent utilities are pushing back against market trends and opportunities (e.g., distributed energy; customer choice, etc.). The regulatory structure is not keeping up with the pace of innovation and change.
- Several speakers emphasized that the utility monopoly's reach beyond the transmission system (the "wires") into generation (before the wires) and an exclusive customer relationship that can limit consumer choice (behind the meter) is inhibiting competition and innovation, and is ripe for disruption.
 - Strong parallels were drawn to the successful, government-led antitrust litigation strategies that led to the break-up of "Ma Bell." Three speakers argued that the next President should consider pursuing a similar path and initiating antitrust litigation against utilities that may be engaged in restraint of trade on the generation or end-user sides of the business as a means of opening up more fair competition and innovation in the electricity sector.
 - Reference was made to moderator Michael Wara's recent publication relating to this subject: "*Competition at the Grid Edge – Innovation and Antitrust Law in the Electricity Sector.*" http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2765502
- Several speakers emphasized that the President has an opportunity to lay out a vision for increasing competition in the utility sector, and diminishing the application of monopoly power beyond the wires business. The next President should facilitate a "transition by design" approach for the sector, rather than continuing in the industry's and regulators' current fragmented, reactive mode. The President should not seek to supplant the states' traditional role in energy regulation, but to lay out a vision and pathway for change.
- Along these lines, one speaker recommended that the next President more actively promote the identification and adoption of best practices in how states are approaching competition and accommodating new entrants like rooftop solar providers. The next President could help the states work through these important issues by acknowledging the national implications of state-based decisions and promoting a dialogue that brings together a diverse set of interested stakeholders.
- Speakers noted that the President should put equity and the development of a "social compact" in terms of providing all Americans with cost-effective access to clean energy at the heart of reform in the electricity/utility space. The universal service charge used in the telecom industry was referenced as a potential template for addressing the equity issue.
- Major infrastructure investments are needed to upgrade the existing electrical grid, which was not designed to address today's emerging electricity system. The smart grid should have open source availability of key data to facilitate innovation and competition in demand reduction opportunities, the availability of distributed energy, efficiency upgrades, etc.

- Several speakers expressed concern about the potential loss of nuclear capacity in the U.S. and the importance of investing in next generation nuclear power solutions – both technical and regulatory.

(See generally Hundt; Karsner; Picker; Connaughton; Majumdar)

Steel, Cement, Infrastructure

- While significant attention has been directed at decarbonizing the electricity sector, more attention needs to be directed at other large energy users associated with major infrastructure (e.g., steel, cement, and other industrial applications).
- Cement and steel are global industries that are tied to infrastructure development and will continue to grow. Low carbon technologies – including carbon capture -- are urgently needed in these large, infrastructure-heavy categories.
- U.S. companies in these industries could gain a global competitive edge by successfully innovating in this space, with cost-effective carbon capture being the biggest prize for U.S. companies. Also, carbon capture in these industries could dramatically lower emissions in developing countries whose steel and concrete production is growing quickly to meet expanding infrastructure needs. For these reasons, the next President should press for low carbon solutions in these industries. Given the recognized need to increase investment in U.S. infrastructure, this is an arena in which there is an opportunity for the next President to lead a bi-partisan initiative.
- As a related point, one speaker emphasized that infrastructure also needs to be built intelligently – in the right places, as well as in the right (lower carbon) way – to improve resilience to climate impacts. In some cases, for example, some traditional, centralized infrastructure might give way to more distributed infrastructure. Projects should be built away from coasts and flood plains, etc.

(See generally Gordon; Chu; Picker; Reilly)

Transportation; Buildings; Energy Efficiency

- To meet the nation’s climate goals, it will be important that the next President push for electrification of the transportation fleet by, for example, focusing on infrastructure development (charging stations) and other incentives.
- The next generation of CAFE standards should be a priority for the next President. One speaker suggested moving toward a “feebate” system for improving fuel efficiency in the transportation sector.
- The next President should advocate for additional investments in energy efficiency, including in the federal building stock, as typically the most cost-effective way to reduce GHG emissions. Jim Sweeney’s (Director of Stanford’s Precourt Energy Efficiency Center) forthcoming book entitled “Energy Efficiency: Building a Clean, Secure Economy,” received a shout-out; it will be published in August.

(See generally Shultz; Podesta; Picker; Reilly; Chu; Connaughton)

Land Use and Conservation

- The next President has an opportunity to emphasize, and capitalize on, the U.S.'s forests and rangelands and the carbon sequestration stronghold they represent. A relatively modest investment by the next President in developing consistent measurement and monitoring methodologies and processes can lay the groundwork for significant additional mitigation associated with increased carbon sequestration from natural landscapes, forest restoration and improved rangeland and ag land stewardship.
- The public lands provide an opportunity to pilot test carbon sequestration strategies and potentially to develop market-based opportunities to invest in low-cost sequestration options in the U.S.
- If the U.S. invests in measuring and enhancing carbon storage in our own forests and other landscapes, the U.S. will be well positioned to renew and reinvigorate global attention and strategies to reduce emissions associated with tropical deforestation – a major source of emissions in the developing world.
- Given the significant GHG emissions associated with the agriculture industry, the next President should focus on assisting farmers and ranchers to apply methane reduction strategies and enhance soil management and other carbon-friendly strategies. U.S. leadership in the sector has the potential to reap global benefits.
- Additional land use-related climate change opportunities available to the next President include:
 - Developing leasing strategies for extracting coal and other fossil fuels from public lands that take into account the carbon-related costs of such activities, and ensuring that leasing activities conform with national climate change budgets and policies.
 - Facilitating the deployment of renewable energy projects and related transmissionlines by improving both the speed and the quality of federal permitting processes.
 - Emphasizing the positive role of coastal wetlands and other natural and restored landscapes on enhancing resilience against climate impacts.

(See generally Hayes; Podesta; Chu)

Finance

- One speaker persuasively demonstrated that private investment interest in clean energy continues to grow and attract both U.S. and global investors. In addition, “impact investing” is gaining in currency among key financiers, and will help inject capital in the clean energy sector.
- Large institutional investors also are beginning to invest in the energy innovation space. President Obama has used his convening power to help spawn the Breakthrough Energy Coalition, the Aligned Intermediary project, etc.; the next President should continue to embrace this convening role.
- Increased federal funding of research and development is an important form of financial help for clean energy. In addition, the next President should consider administrative and legislative changes that would make REITs, Master Limited Partnerships, and Private Activity Bonds available for clean energy projects.
- As noted above, tax credits will continue to be vitally important for the renewable energy industry in the U.S., pending progress on instituting a broad-based carbon tax.

- Federal tools, including procurement, can be more effectively consolidated and used to help finance clean energy projects.
- The next President should explore how to reinvigorate DOE's loan guarantee program and utilize its remaining authority wisely. A couple of speakers expressed caution about the relative competence of governmental decision-making in evaluating new business opportunities.
- Establishing an infrastructure bank, and promoting more public/private partnerships, has the potential to free up large amounts of capital that can be invested in clean energy infrastructure projects.

(See generally Pfund; Reicher; Bachher; Podesta; Shultz)

Potential Regulatory Priorities (in addition to sector-specific initiatives identified elsewhere)

- Several speakers emphasized the importance of having the next President continue to implement the Clean Power Plan as a foundational element of the U.S.'s commitment to reduce GHG emissions.
- One speaker suggested the potential "simplification" of clean energy mandates and their conversion into technology neutral, performance based, and cost capped requirements.
- Methane controls on existing oil and gas exploration and distribution systems should be a top priority for the next President, given the GHG intensity of methane and new information about the nature and scope of methane venting and leakage.
- The next President should rally the international community to address HFCs and other "super emitters" under the Montreal Protocol.

(See generally Connaughton; Podesta; Hayes)

Resilience

- Climate change already is causing significant impacts that require the development of vigorous resilience/adaptation strategies in response to sea rise, storm surge, tropical disease, drought, and other impacts.
- Risks associated with climate impacts should be a centerpiece of the next President's agenda. Risk recognition and response is non-partisan. Companies are comfortable undertaking such reviews, and risk evaluations promote discussions about solutions, including support for mitigation.
- The nature and scope of the societal costs that climate change already are causing is underappreciated. The next President has an important opportunity to use the levers of the federal government to gather and disseminate data about the costs of climate impacts on infrastructure and on human and natural resources.
- The federal government also is well positioned to consolidate GIS-based mapping data from across the federal government and make it readily available for states and local communities who are eager to understand current and projected climate impacts on infrastructure and other resources in their area.

(See generally Gordon; Hayes; Majumdar; Podesta; Chu)

International

- Speakers emphasized the importance of continued U.S. leadership in the international arena, both in connection with implementing the Paris agreement, and in continuing bilateral dialogues and engagement with major emitting nations like China and India.
- Two speakers recommended that the next President also focus on, and take advantage of, a North American collaboration among the U.S., Canada and Mexico to facilitate the development of clean energy initiatives in the northern hemisphere.
- One speaker emphasized that developing nations will require support to reduce emissions and develop sustainable energy, and suggested that the next President lead the international community in acknowledging this need, and facilitating the delivery of such needed support.

(See generally Reilly; Majumdar; Podesta)

II. A POTENTIAL ORGANIZATIONAL/GOVERNANCE AGENDA FOR THE NEXT PRESIDENT

White House/Cabinet Relationship

- There was a broad consensus that the President and a senior advisor in the west wing should be personally and actively involved in developing climate change policy initiatives, working with appropriate White House offices and cabinet agencies, and then in supporting cabinet secretaries and their agencies in implementing agreed-upon policies.
- Speakers noted the importance of having a policy blueprint with specific benchmarks that can be used by the White House to work collaboratively with the relevant cabinet agencies to measure progress in meeting such benchmarks. Active, top level White House engagement with cabinet and sub-cabinet officials can help identify budget resources and coordinate complementary efforts within the federal family, while pushing the agencies to implement the next President's climate plan. This model reinforces the importance of strong communication and shared accountability among the President and top White House officials and cabinet secretaries.
- One speaker emphasized the importance of having the President regard the cabinet and sub-cabinet as his "staff," as a way to inspire and gain access to the career officials in the agencies who will play an indispensable role in implementing new climate policies throughout the sprawling federal bureaucracy.
- Another speaker recommended that when seeking to coordinate activities that cut across several cabinet departments (as, for example in connection with the siting of transmissionlines), the President and his top advisors should identify a lead cabinet secretary who will be held responsible for ensuring that a unified implementation plan moves forward and that the required coordination occurs, backed up by the support of the White house.

Presidential Use of Soft Power

- Several speakers emphasized that the next President should recognize, and exercise, his or her enormous “convening power,” and actively use it to advance the President’s climate agenda. Using this soft power effectively is particularly important in the climate context, given the large number and type of actors in the public and private sectors that must work together to make progress on the complex and wide-ranging climate agenda.
- Effective outreach and convening should extend, for example, to state, tribal and city leaders who are on the front lines of climate issues; to regulators and industry participants who are grappling with specific issues such as modernizing the electric grid; and to governmental and private sector companies and financiers engaged in research, development and deployment of clean energy solutions.
- The next President also can exercise soft power by facilitating broad public access to important climate-related information that the federal government is in a unique position to identify and consolidate for interested governmental and private stakeholders. (See, e.g., the discussion above regarding GIS-based mapping data.)

(See generally Podesta; Hayes; Shultz; Granholm; Majumdar; Reilly; Chu)

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