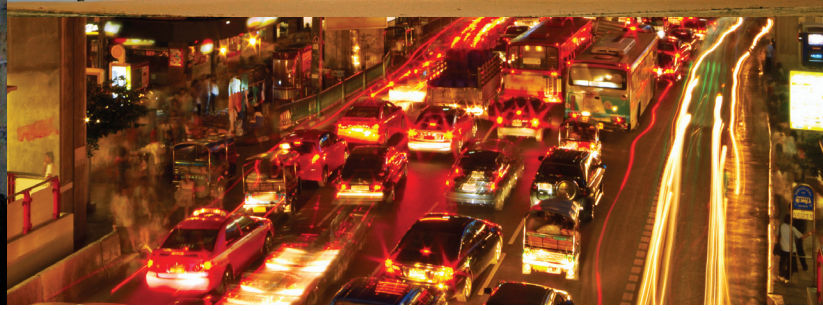
# THE STANFORD KYOTO TRANS-ASIAN DIALOGUE

## ENERGY, ENVIRONMENT, AND ECONOMIC GROWTH IN ASIA

### FINAL REPORT

NOVEMBER 2009



SHORENSTEIN APARC STANFORD

THE WALTER H. SHORENSTEIN ASIA-PACIFIC RESEARCH CENTER

STANFORD JAPAN CENTER

# The Stanford Kyoto Trans-Asian Dialogue:

# Energy, Environment, and Economic Growth in Asia

# Final Report

November 2009

**The Walter H. Shorenstein Asia-Pacific Research Center (Shorenstein APARC)** convened the first Stanford Kyoto Trans-Asian Dialogue in Kyoto, Japan, on September 10 and 11, 2009. The Dialogue addressed the critical theme of "Energy, Environment, and Economic Growth in Asia," and gathered participants from eight countries across the Asia-Pacific region: the United States, Japan, South Korea, China, Vietnam, Singapore, Indonesia, and India.

Through the Stanford Kyoto Dialogue, Shorenstein APARC seeks to build a new set of relationships across the Pacific, a network that can benefit all parties through exchange of information, analysis, interpretation, and original thinking. To develop such relationships, Dialogue organizers at Shorenstein APARC identified individuals from both a large number of different countries and a wide range of backgrounds—business, academe, media, and government—along with experts on energy and environmental issues drawn from the greater Stanford community and from countries across Asia.

Asia and the United States share deep concerns about energy—its generation, its sustainability, and its impact on the environment and the global economy. In confronting these concerns, the Stanford Kyoto Dialogue sought to facilitate not only new discovery but also the transfer of accumulated wisdom among the distinguished participants. The discussion was off-the-record, so that participants could freely express their views and engage in lively debate, but we present here a brief synopsis of each session.

**The Geopolitics of Energy in Asia**

- Ambassador Michael Armacost (Shorenstein APARC)
- Ambassador Hyun Cho (ROK Ministry of Foreign Affairs and Trade)

From the perspective of the United States, which is both a major consumer and a significant producer of energy, Ambassador Armacost explored the role America plays in the regional energy equation. He paid special attention to the U.S. role in ensuring the freedom of the seas and the smooth importation of oil from the Middle East. He pointed to the common interests that most Asian nations have with the United States in their roles as consumers and importers of energy, rather than as energy producers and exporters.

Ambassador Cho's presentation highlighted the maintenance of energy security in Northeast Asia, with China joining South Korea and Japan as a highly import-dependent economy. He discussed the value of regional cooperation in Northeast Asia to improve energy security and how energy cooperation could in turn invigorate the process of regional integration, pointing to the example of Europe's experience with the Coal and Steel Community. Ambassador Cho also discussed the increasing focus on "Green Growth" in South Korea and the need for Asian countries to cooperate regionally to deal with the common threat of climate change.

Discussion of this session ranged from U.S. activities in preserving stability in the Middle East—still the world's main source of petroleum—to Russia's emerging role as a supplier of energy to Northeast Asia. With all of Asia dependent on energy supplies from outside the region, the development of new sources of energy—whether diversified providers of petrochemicals or alternative domestic sources, such as nuclear and renewable energy—emerged as a strong common concern. Some participants identified the obstacles to such alternatives, including the opposition to nuclear power plants and concerns about their safety. Participants noted that though the global recession has dampened demand for energy, China and India continue to grow both in economy and population and with that growth comes the demand for ever-increasing supplies of energy. Such demand may drive prices up, which could in turn hinder global economic recovery.

Other participants focused on the security dimension of growing energy demand, such as territorial disputes over where oil and gas deposits are located, and conflicts over the diversion of rivers to generate hydropower. In the discussion of the possibilities for regional cooperation, there was both skepticism about its practicality and optimism about areas of emerging mutual interest, such as promoting energy efficient industry and power generation technology. There are, one participant emphasized, areas of both complementarity and competition in the energy field.

**Energy Efficiency**

- Dr. James Sweeney (Precourt Center for Energy Efficiency)
- Dr. Yoichi Kaya (Research Institute for Innovative Technology for the Earth)
- Dr. Phillip Lipscy (Political Science/Shorenstein APARC)

The shocking truth is that the vast majority of energy use in the United States—despite the huge attention paid to alternative sources of energy supply—remains carbon-based, that is, coal, oil, and natural gas. Even exceptionally fast growth of the alternative energy sector will take years to make a significant dent in the total U.S. carbon footprint. Increased energy efficiency, however, can have a much larger impact, much more rapidly. The three presenters in this session explored mechanisms to increase the adoption of energy efficient technology in the residential sector in America and the industrial sector in China.

Dr. Sweeney discussed a particular innovation designed to improve American consumers' efficient use of energy. The key, he noted, is to enhance their awareness of their own energy use; when consumers do not face the cost of energy directly then there are significant market failures. Dr. Sweeney went on to argue that the most effective strategy will be to provide more accurate and timely information to consumers about how much electricity they are using, correcting the gaps that lead to market failure. A real-time metering system is currently being tested in California, to allow users to understand the financial impact of different devices.

The case in China, by contrast, is much more a matter of government regulation. Dr. Kaya remarked that China's power generation sector is characterized by a large number of small facilities. Increasing efficiency will require state intervention to consolidate the

industry and foster the appropriate scale at which firms will engage in investment for efficiency gains.

The ensuing discussion focused on how best to promote greater energy efficiency and the adoption of new technologies. In China, for example, the system has tended to provide incentives for increased power production without regard for the environmental and climatic cost of that growth (particularly based on the use of coal). Some participants pointed to the debate over the role of prices—that China and the United States resist setting energy prices higher while Europe and Japan tend to use price to discourage energy consumption. One participant argued that we must subsidize the adoption of new technology now, rather than wait twenty to thirty years for its gradual adoption. This could be done on both a domestic and an international basis—through development assistance, for example. Dr. Sweeney and others presented powerful arguments that energy efficiency must be seen as economically viable or it will not be widely adopted.

Dr. Lipscy presented his current research project at Shorenstein APARC, "Japanese Energy Efficiency Policy in Comparative Perspective." His ongoing work seeks to identify which components of Japan's relatively energy efficient economy are the result of policy—as opposed to endowments such as geography or industrial structure—and further, which of those policy-related efficiencies are transferable. Japanese industrial policy has frequently relied on incentives rather than strict regulation, but whether developing countries will be similarly able to intervene to exploit market mechanisms remains unclear. This is particularly true because many of the major engines of economic and industrial development are associated with foreign capital.

**Clean Tech**

- Ms. Lauren Bigelow (New Energy Finance)
- Dr. Kejun Jiang (Energy Research Institute, National Development and Reform Commission, PRC)

Ms. Bigelow described the state of clean tech venture capital financing in the United States, and Dr. Jiang explained the elaborate modeling employed to produce recommendations for Chinese policy on technology that increases efficiency and reduces carbon emissions. The two presentations revealed a stark contrast between the U.S. market-based system and the Chinese command economy, and highlighted divergent responses to the challenge of technology development, particularly for coping with climate change. On the one hand, the United States can allocate enormous sums to high-risk, high-return new technologies, but funding has been vulnerable to the current economic downturn. On the other hand, the Chinese system involves the central government in choosing winners, which leads them to be generally steadier but more risk-averse.

China has been producing new technology patents for coal-fired power plants and aims to exploit those to vastly reduce the amount of carbon it releases in generating its electricity. The key element is the hand of the state, which can close power plants by fiat and control the implementation of new technology in replacement facilities. Various informal mechanisms, including corruption and simple noncompliance, are mitigating this unlimited power, but Dr. Jiang argued that the central government is extending its control with increasing effectiveness. Further, the introduction of new technology, for emissions reduction in particular, is seen as an important growth industry for China. Without developing its own technology to increase energy efficiency and reduce pollutants (including carbon dioxide), China will not only be dependent on technology created abroad but will also lose an important possible export market.

The gap between China's state-led, long-term, pragmatic process and the United States' market-driven, short-term, speculative approach should not be seen as contradictory; rather, the two are complementary. China lacks the wherewithal to develop breakthrough technologies, Dr. Jiang argued, but it is well suited to improving process technology at low cost. This affinity might materialize more fully once the economy recovers, but Ms. Bigelow pointed out that the current situation in clean-tech finance is dire. Even firms that have passed the speculative stage and posses proven technology are having trouble raising the funds they need to survive, let alone to complete their transformation.

**Emissions Post-Kyoto Protocol**

- Dr. John Weyant (Precourt Center for Energy Efficiency)
- Dr. Prodipto Ghosh (The Energy and Resources Institute)

The message from Kyoto to the world was inspiring: urgent action must be taken to reduce the emission of greenhouse gases. The message from Copenhagen to Kyoto was measured: consensus on concrete actions to be taken, however desirable, will be

difficult to achieve. Dr. Weyant presented findings from the climate change model to show that, even with drastic action, the likelihood of achieving a two degree Celsius increase in global mean temperature is extremely low. Leaders will need to consider what target to set as an acceptable trade-off of different costs.

Dr. Ghosh firmly articulated the Indian official position on climate change: industrialized countries created the problem and they are therefore entirely responsible for correcting it. India and other developing countries will require "emissions space" in order to improve their standard of living. That said, he noted that Indians' patterns of energy use and consumption show great moderation and that Western countries' energy usage will continue to dwarf that of India on a per capita basis, even if its rapid growth continues. Further, India's economy has grown in sectors that have relatively low energy intensity, and the country's emissions per unit of output are therefore correspondingly low, on a par with Japan. Dr. Ghosh reiterated the view that developed nations must take responsibility for cumulative global emissions, since they crossed over the industrial threshold first.


Other views from participants knowledgeable about the state of negotiations in Copenhagen revealed bleak prospects for any binding agreements on greenhouse gas emissions. Without such agreements, the Copenhagen Agreement will fall short of the commitment reached in Kyoto. The same participants pointed to the confrontational

nature of the negotiations to date and the lack of clear commitment by the governments involved to take the necessary steps. The United States, for example, has returned to the negotiations under the Obama administration, but is struggling to formulate concrete positions at Copenhagen, partly due to U.S. Congressional delays in passing climate change legislation. Developing countries resist setting firm numerical targets for carbon mitigation and seek financing for technology transfer to achieve that goal. Without such assistance, they argue, they cannot commit to any particular mitigation actions. Even major developed countries, such as South Korea, ask for special treatment due to their historical path to development. The Copenhagen talks, some participants said, are now hovering around a number of issues and it may be a challenge to create a new protocol.

Another issue raised in the discussion was the lack of capacity in developing countries to implement measures to slow or mitigate the effects of climate change, for example by combating deforestation.

**Sponsors**
Shorenstein APARC expresses profound gratitude to the City of Kyoto, to Yumi and Yasunori Kaneko, and to the Freeman Spogli Institute for International Studies for vital support of the Stanford Kyoto Trans-Asian Dialogue.

**Public Event**

Dr. Masahiko Aoki (Freeman Spogli Institute for International Studies) moderated a panel discussion with Ambassador Armacost, Dr. Ghosh, Dr. Lan Xue (Tsinghua University), and Ambassador Ton Nu Thi Ninh (Tri-Viet University Project).

For the citizens of Kyoto and other interested parties, selected participants of the Stanford Kyoto Trans-Asian Dialogue engaged in a panel discussion on "Energy, Environment, and Economic Growth in Asia." The panelists covered issues addressed during the two-day private event, providing a U.S. perspective on energy, a Chinese perspective on clean technology, an Indian perspective on climate change, and a Southeast Asian perspective on the interaction among all of these. Officials of the Kyoto city government, led by Mayor Daisaku Kadokawa, as well as representatives of local Kyoto firms and citizens' groups, attended both the public event and the reception that followed.


THE WALTER H. SHORENSTEIN
ASIA-PACIFIC RESEARCH CENTER

Stanford University
Freeman Spogli Institute
for International Studies
Encina Hall
Stanford, CA 94305-6055
Phone: 650.723.9741
Fax: 650.723.6530
http://aparc.stanford.edu