

A Turning Point for Climate: Initiative on Technology Innovation and Investment

Lewis Milford and Mary Jean Burer, Clean Energy Group

Clean Energy Group (CEG), a US based NGO, plans to work with other international partners to address a fundamental gap in climate policy strategy for climate stabilization. It plans to initiate an international collaborative movement to develop more aggressive technology-based climate measures and related low-carbon finance mechanisms needed to accelerate technology commercialization. This integrated technology and finance effort is needed for long-term stabilization of greenhouse gas emissions, approaches that complement the current Kyoto cap-and-trade system.

With the mounting recognition that much deeper cuts in emissions will be required beyond Kyoto measures to achieve climate stabilization, technology-investment-innovation-based approaches to climate mitigation are again in the spotlight. This call for innovative strategies has recently been echoed in the outcomes of the G8, as well as in statements and publications from other diverse parties, ranging from the British House of Lords to the European Environment Agency to one of the most conservative members of the U.S. Senate. Taken together, these events signal a sea change in the willingness of the international community to move toward such a technology-investment-innovation-based approach to climate.

Several models of clean energy investment, technology deployment and collaboration are already working at the sub-global level around the world --in states, provinces and regions—that could provide options for climate action going forward. In the U.S. alone over the last five years, state clean energy funds have invested and obligated more than \$1.5 billion through a growing variety of public finance instruments including grants, rebates, loans and equity investments to spur the development and deployment of clean energy technologies. In the coming decade, these state funds are currently budgeted to invest another \$2.5 billion. Some states are also focusing their technology investment activities to take advantage of related economic development and technology innovation opportunities by investing directly in clean energy companies.

We believe these emerging investment models could inform any future technology investment-innovation-based initiative, including new elements of a climate protocol – this could take the form of sub-global agreements based on collaborative investment and technology innovation for low-carbon technologies. However, we also recognize that far more discussion is needed, especially in the area of technology innovation, if we are to develop investment-innovation-diffusion strategies that will lead to climate stabilization.

Furthermore, we believe the complexity of the problem and the nature of the solutions requires that this debate should take place at various levels (international, sub-national, etc.) and within multiple frameworks (i.e., fora for sub-national stakeholders as well as the United Nations Framework Convention on Climate Change or the G8 Dialogue on Climate Change). To be clear, our aim is not to challenge the approach or institutions agreed to under Kyoto or the G8 action plan on climate change; rather, we believe there is a distinct role for sub-national actors to inform and shape these processes.

We aim to go beyond the climate and clean technology community to engage other fields, most notably experts in finance and technology innovation, to develop solutions to bring about the massive technology and economic transformation needed to create a low-carbon economy.

This discussion began in Montreal, Canada in late 2005 and is now continuing at the KyotoPlus meeting in Berlin in September 2006. We hope to have suggestions by the group meeting this year in Berlin to guide joint action by such a community. So far some general suggestions we have considered already are:

- Develop global networks of clean energy practitioners
- Understand processes of technology innovation for clean energy
- Organize federal, state, international and private sector activities to create complementary and synergistic relationships to the Kyoto process
- Create model structures for climate technology policies, such as were developed for CFC replacements in the Montreal Protocol (the Technology and Economic Panels)
- Create new public and private funding streams and investment vehicles

To move beyond Kyoto requires new market, technology and finance solutions that are firmly rooted in an economic development approach. In essence, we are looking at a massive technology innovation leap, and a parallel finance revolution to mobilize unprecedented levels of public and private capital.

However, no one has worked out a strategy for how that parallel process will happen. To begin those discussions, we want to bring together leading academics, clean energy funders, business innovation scholars and NGOs to join with us to cross-pollinate the current practice of clean energy funding with ideas of a technology-investment-innovation-based approach to climate stabilization.

We hope the group meeting in Berlin will help us to develop a framework to answer some fundamental questions, such as:

- How do we achieve mainstream commercialization of low-carbon technologies?
- How do we link commercialization strategies among various technologies to leverage deep emissions reductions?
- How do we integrate an economic development approach within technology-investment-innovation-based climate strategies to ensure success?
- How do we create a new technology innovation infrastructure that could be used to accelerate global commercialization of clean energy technology?

CEG proposes that a first step towards effective action with regard to technology agreements or technology-based protocols is developing a better understanding about the options, how existing efforts might relate to them, how parallel regimes might work, and the identification of legal, policy, and technical issues and conflicts that might affect specific parameters of a technology-based policy approach.

The next challenge of the initiative would be the exploration with a small group (e.g. 15-20 people) of which technology and finance solutions could be used together to mobilize unprecedented levels of public and private capital, and finally the development of a strategy for how this could happen. We hope that this side-event at the KyotoPlus event in Berlin will help us in developing a framework for this work within a small group of initial partners.

In the enclosed papers that have been developed for our upcoming Berlin meeting (a side event to the KyotoPlus conference), we illustrate some of the current knowledge on this topic originating from well-developed academic literature on technology-investment-innovation-based approaches to achieve climate stabilization. This work comes from various scholars and diplomats. In Berlin, we aim to discuss existing understanding on this topic and obtain expert advice on next steps for the initiative.

- Ambassador Richard Benedick will discuss various possible complementary approaches such as parallel regimes (Benedick, 2006)
- Tim Foxon will address the true obstacles to technology innovation and systems thinking which one could argue should rather be the main driver of both short and long-term climate policy choices, such as technological and institutional lock-in (Foxon, 2002).
- Lew Milford will discuss the options for technology innovation on a larger scale.
- Other panellists will explore other options for the longer term.

Finally, we aim to facilitate a dialogue which will not end, but begin in Berlin, with the goal of developing a suggested model agreement for low-carbon technology deployment and implementation recommendations to advance the use of such complementary climate policy tools.