



**State Clean Energy-Environment Technical Forum
State Programs for Emerging Climate Protection Technologies
November 8, 2007
Call Summary**



Participants: 74 participants from 30 states and a number of regional and national organizations

Materials: The participant list, agenda, and all presentation materials from this call are available at http://www.keystone.org/Public_Policy/2007_8DOCS_CLEANENERGY/2007_8DOCS.html. Please refer to these documents for additional detail.

Key Issues Discussed

- Benefits of viewing emerging technology research, deployment, and policy as a parts of a continuum and not as separate stages in the development process
- Importance of collaboration in promoting and supporting emerging technologies
- Opportunities for states with limited resources to promote emerging technologies
- Value of assessing issues/conditions and technologies/projects before providing support to ensure the best use of funds and the highest impact from projects

Summary of Presentations

A. Welcome/Introduction – Julie Rosenberg, US Environmental Protection Agency (EPA)

- Today’s call builds on other conversations about climate protection technologies at EPA.
- The EnergySTAR program helps transform the market with proven technologies, but there is also a push to support emerging technologies that are earlier in development.
- States have a key role in advancing emerging technologies.

B. Overview of State Initiatives to Promote Emerging Technologies - David Terry, Association of State Energy Research and Technology Transfer Institutions (ASERTTI)

- ASERTTI has over 45 state and local institutions as members. These **members collaborate on emerging technologies** in the public interest.
- ASERTTI has observed that approaching **research, deployment, and policy on separate tracks exacerbates the problem of getting projects through the “valley of death”**—the gap between early public investment in a technology and longer-term funding and support from the private sector. Entities/efforts that do not make the distinction between research, deployment, and policy are more successful at promoting emerging technologies.
 - ASERTTI assumes that **there is a continuum, rather than discrete stages**. The continuum includes marketing, technology and product development, applied research, demonstration and fieldwork, dissemination, training, business assistance, market growth through incentives, etc.
 - **Several states have been successful in promoting emerging technologies** through their ability to tie research, development, and market growth together. New York’s promotion of kinetic turbines (powered by currents, not tides) and plug-in hybrid vehicles (PHEVs) are excellent examples of the impact states can have when they take the continuum approach.

- ASERTTI has also observed **the importance of collaboration in moving technologies forward**. This is ASERTTI's own approach, and it has worked well for others. **Collaboration allows partners to leverage resources, help ensure that the best minds are involved in a project, and demonstrate a broad, longer-term commitment to a technology**. Examples of technologies that have benefited or may benefit in the future from collaborative efforts are PHEV school buses, light-emitting diode (LED) lighting, and combined heat and power (CHP).

C. North Carolina Advanced Energy Initiative – Bob Koger, Advanced Energy

- North Carolina does not have a lot of resources, but the state still manages to promote emerging technologies.
- The Advanced Energy Initiative started because the state wanted to reduce energy demand and look at clean energy alternatives. Toward this end, the state set up **a small energy surcharge fund, which generates about \$4 million per year**. Additional funds come from outside the state and government contracts. These funds support 55 employees and **in-house technology testing**.
- The state helps technology firms in the several ways:
 - **Independent testing of technologies** by staff and outside experts
 - **Identification of technology deployment opportunities** with non-state entities.
 - **Multi-state collaboration on research and deployment (e.g. hybrid plug-in school bus project)**
 - **Assistance for companies in obtaining grants** from federal agencies
 - **Short-term financial assistance in limited cases** to promote development, deployment, and efficiency
- **In the summer of 2007, North Carolina passed the southeast's first legislation to create a renewable energy efficiency portfolio standard (REPS)**. The REPS is going to bring in funds to support emerging technologies and should help increase demand for energy efficiency and renewable technologies in particular.
- The North Carolina legislature also created a **commission to study climate change**. The resulting report may create more demand for emerging technologies.

Questions

Has North Carolina looked at policies that stand in the way of emerging technologies?

Interconnection policies can create barriers. We are going to look at the development of a smart grid, where you can plug in distributed generation units without the harm that some people fear. In another area, the North Carolina Utilities Commission has made emerging generation technologies more competitive, more energy efficiency, and more cost effective by eliminating the declining block rates in the retail rate schedules. Some parties before the Commission now support increasing block rate schedules where you would pay more per kilowatt-hour the more you use.

Participant Comment via Email

State public utility commissions need to evaluate how their regulations may impact advancements in conservation and new technologies. For example, California forbids utilities to advertise items that can increase energy usage, thereby preventing the advertising of electric cars. Many commissions that have not deregulated have language that discourages

distributed generation, which is critical for potential subdivision/home sized clean energy sources.

D. Connecticut Clean Energy Fund - Keith Frame, New Technologies Clean Energy Fund

- The Connecticut Clean Energy Fund is **managed by a quasi-state entity. It is funded by an electric bill surcharge** that raises \$30 million per year in most years.
- One overarching **goal is to have different funds support technologies in the different stages of their development**, so that projects have funding in both the early and more advanced stages of development. The funds focus on creating a clean energy supply, fostering growth in clean energy technologies, and stimulating demand for clean energy.
- The Fund operates under the knowledge that **the resources generated by the public benefits fund (PBF) are vulnerable to the changes and demands of politics**. Recent budget crises have already impacted the Fund once, with PBF resources being diverted to meet non-energy budgetary needs.
- **Balance support for more mature and popular technologies with** newer, emerging technologies.
- Fund has a number of **different programs and projects that support both supply- and demand-side efforts**. These include providing purchase cost premiums to generation companies on renewable power generation (e.g. 5.5 cents/kWh no less than 100 MW), supporting renewable distributed generation (behind-the-meter grant program), rebates (solar PV program) and raising public awareness about renewable energy and energy efficiency.
- Through **grants, loans, and contracts**, the Fund supports demonstration projects, provides equity, assists in the development of business plans, funds research, and promotes education on renewable and efficient energy in area high schools.
- The Fund has a **stringent screening process to evaluate potential projects**. Its due diligence evaluation criteria assess financial viability, technical feasibility, costs and benefits to Connecticut ratepayers, cost effectiveness, market competitiveness, company and management experience, and regulatory requirements for the “host site.”
- Because resources are not infinite, the staff tries to **diagnose key problems and assess critical issues before they prescribe a solution or support a project**. For example, prior to funding a wind energy project, a study was done to assess wind resources and map wind patterns in the state. The subsequent wind project was carefully designed to maximize the benefits from the available wind resources. The Fund has done similar assessments for biomass, fuel cells, and other issues.
- The Fund tries **to help companies bridge the “valley of death,” assisting them with prototype demonstration** (often at full commercial scale).

Questions

How does the Fund’s quasi-governmental structure allow for different activities than a state agency could do?

Although the Fund is a self-contained entity, it is still owned by state, so the state can shut it down or can request a portion of the profits. However, unlike the state, we can reinvest profits and can pay employees more competitive salaries. The quasi-governmental status allows for more flexibility.

What do you see as the major challenges the Fund has faced regarding emerging technologies?

The greatest hurdle is the market itself—the cost of developing emerging technologies versus the cost of using existing technologies. All we can do is subsidize emerging technology projects through grants. For instance, we are beginning to look at the potential for energy storage in high cost power regions. We would like to help companies get over the high capital cost and long payback period of an advanced fuel cell or other storage technology. This would help companies that cannot afford to operate at high-cost periods.

E. Questions and Discussion

Has there been any discussion about coordinating the technology screening efforts of different entities or states?

- ASERTTI does its technology screening through a collaborative effort. In DG and CHP, we go through a common testing protocol to compare each unit on performance for several factors. Evaluation data is then consistent and can be compared across technologies.
- North Carolina uses criteria that address technological feasibility, whether a project adds value, and a project's ability to demonstrate advanced services and products. There could be a national testing group that asks those same questions, but North Carolina utilities are going to want to test the technologies in their own laboratories before they install them.
- The Connecticut Clean Energy Fund is working with national organizations that help provide some commonality to evaluation, but these common approaches really need to be applied on a local basis to make decisions. The Fund also assembles teams of experts to do a final, independent analysis that, in conjunction with the Fund's internal analysis, informs decision making.

Are there other entities that do open-bid solicitations for emerging technology proposals?

The New York State Energy Research and Development Authority (NYSERDA) does open-bid solicitations, although they do have some deadlines. The Connecticut Clean Energy Fund prefers not to have deadlines because it does not want to miss new technologies that may not be ready to submit according to annual deadlines.

EPA has been talking about whether or not there could be a formal match-making role that connects states with funding opportunities to innovative project ideas. Is this a resource people need?

ASERTTI does that now informally through its members and meetings, so there is a lot of sharing and collaborating across state lines. However, a more formal process would be helpful.

The California Energy Commission has a small international technology transfer program. Does ASERTTI have a similar program?

No, we are not export-oriented, but it would be a very valuable thing if someone would do it. Oregon has had a lot of success in this area, as has California. It can be a boon for both energy and for economic development.

<p>NEXT TECHNICAL FORUM CALL: December 13th, from 2:00 p.m. to 3:30 p.m. ET TOPIC: The Role of the Public Utility Commission in Promoting Clean Energy</p>
