



Stakeholder Meeting Notes:

First Advanced Energy Stakeholder Group Meeting November 6, 2003

Overview of the Meeting

The first meeting of the Advanced Energy Stakeholder Group was held on November 6, 2003 at the Hotel Monaco in Washington D.C. The final agenda for the meeting is attached, including last minute changes to the list of speakers and activities. A roster is also attached which identifies all 44 Advanced Energy Stakeholder Group members, and identifies members that attended the meeting. About 35 participants attended the meeting of which 28 were Advanced Energy Stakeholder Group members.

The day began with introductory remarks by Stephen Piccot, the GHG Center Director, followed by around-the-room introductions and brief statements from all meeting participants. Following these introductions, a panel of experts was convened to discuss technical, policy, and other issues relevant to users and vendors of advanced energy technologies. Speakers included: Bruce Poole, Office of Markets, Tariffs, and Rates – Federal Energy Regulatory Commission (FERC); Tom Basso, NREL/IEEE SCC21 Standards Coordinating Committee; Roger Ballentine, President, Green Strategies, Inc; Bob Simon, Democratic Staff Director for the Senate Committee on Energy and Natural Resources; Steven Greenberg, RealEnergy; and Andy Skok, Fuel Cell Energy.

Mark Meech, GHG Center Deputy Director, hosted a series of sessions to focus the group on important GHG Center business areas. He first gave a background presentation describing the GHG Center, then facilitated a technology area prioritization exercise, the results of which are intended to help guide the Center's technology focus for several years to come. A session was also facilitated by Tim Hansen, engineer at the GHG Technology Center, to prioritize technology performance measurement protocols and general testing strategies for advanced energy technologies. The results from both the technology area and testing protocol prioritization exercises are described in more detail below.

Following these exercises, the remainder of the day was spent interacting with senior managers of advanced energy technology demonstration programs. A wide range of technologies and experiences were discussed, and several opportunities for collaboration between these programs and the GHG Center were identified. Speakers included: Richard Drake – New York State Energy Research and Development Authority (NYSERDA); John Holt – National Rural Electric Cooperative Association (NRECA); Richard Handley – Northeast Regional Biomass Program (NRBP) of CONEG (Coalition of Northeastern Governors); Ed Lewis - Colorado Governor's Office of Energy Management and Conservation; and John Shea - New England Governor's Conference, Inc. (NEGEC).

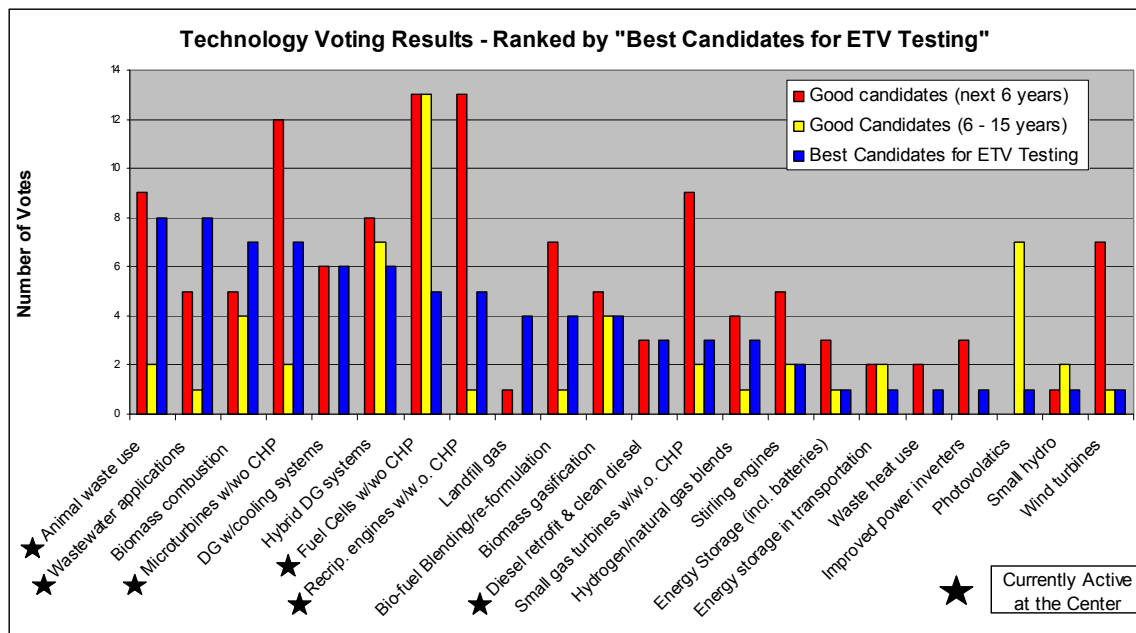
Technology Prioritization and Voting Exercise

Under the ETV Program, Stakeholders assist in specifying protocols, prioritizing technologies, reviewing important documents, defining and assisting outreach efforts, and serving as information conduits to their constituencies. Stakeholder groups can help steer ETV Centers to successful technology areas - a central role on the ETV Program. Successful ETV technology areas are often those that face compelling pressures or desires for new and improved technology, stimulating the markets that the ETV Program serves. If these areas have a high occurrence of new and poorly understood technologies, Stakeholders can help single out those areas that could be well-served by ETV.

As part of the Advanced Energy Stakeholder Meeting, a technology voting exercise was conducted to get secure stakeholder input on which technology areas the GHG Center should focus on over the next few years. The voting process began with a list of technologies developed by a subcommittee of the Advanced Energy Stakeholder Group in December 2002. Stakeholders were first asked to amend the list by adding specific technology areas. After that, they voted on the three questions below by placing colored stickers next to the technology areas that best met the conditions specified in the questions.

- **Red Stickers:** Pick eight advanced energy technologies with the best market potential 1 to 6 years out (good market potential exists if technology is cheaper, better, faster, and meets regulatory mandates).
- **Yellow Stickers:** Pick five technologies with the best market potential 6 to 15 years out.
- **Blue Stickers:** Pick the five best ETV verification candidates.

The voting exercise was conducted with about 20 Advanced Energy Stakeholders participating. The results, shown below, include 22 technologies that had one or more vote cast for them. Technologies are ordered starting with those that were most often identified as the Best Candidate for ETV Testing.



Technologies with names that are preceded by a star are already active at the GHG Center, and the chart shows that of the 12 top rated technology areas, six are already active. Other highly rated technology areas include: biomass combustion, DG-devices coupled with heat recovery-based cooling systems, and hybrid systems. All of these areas were rated as good ETV candidates, and many Stakeholders felt they could experience good market penetration within the next 6 years. Other technology areas the Stakeholders felt may exhibit good penetration in the next six years include bio-fuels (e.g., diesel and bio-diesel blends), small gas turbines with and without CHP, and biomass gasification. All six new areas listed above will be examined further by the GHG Center to identify specific technology testing needs, and to assess if the GHG Center could provide meaningful assistance to vendors, users, and others involved in these technology areas. Areas where ETV verification is most likely to significantly help increase the use of good environmental technology will be pursued by the Center.

Verification Protocol Prioritization and Voting Exercise

As part of the Advanced Energy Stakeholder Meeting, a technology voting exercise was conducted to identify which technology performance parameters are of greatest interest. These results will be used to guide future testing done at the GHG Center, but will also be used by the Association of State Energy Research and Technology Transfer Institutions (ASERTTI) to guide their efforts to develop national field testing protocols for DG equipment.

About 15 Stakeholders participated in this exercise. It began with a presentation by Tim Hansen in which the goals of the exercise were outlined. For Stakeholder consideration, Mr. Hansen then presented lists of seven technology performance categories which contained 52 specific performance parameters. For example, the operational performance category included equipment availability and reliability. The Stakeholders were first asked to rank all performance categories in decreasing order of interest. Results of that ranking were grouped according to the different types of stakeholders present (e.g., vendors, users, etc.), and the table below presents those results. Specifically, the table identifies the four most important categories of performance identified by each type of stakeholder.

Top Four Categories of Performance

Performance Categories Addressed	Mostly "user" focused	Mostly "regulatory" focused	Mostly "vendor" focused
Electric Generation Performance		2	4
Electrical Efficiency	4	3	1
Thermal Efficiency (for CHP)	3	4	3
Atmospheric Emissions	2	1	2
Operational Performance	1		
Response to Upsets			
Load Compatability			

Not surprising, "user" focused stakeholders were most interested in operational performance, followed by atmospheric emissions and energy efficiency performance (both electrical and thermal). Although all groups included atmospheric emissions as one of the most important areas, "regulatory" focused stakeholders rated this as the most important category, followed by electrical generation performance and energy efficiency performance. "Vendor" focused Stakeholders rated electrical efficiency and emissions as the two top rated areas, followed by thermal efficiency and electrical generation performance. None of these groups included response to upsets or load compatibility in their top four categories. The different performance data priorities seen among the different Stakeholder members reinforce the importance of having well balanced stakeholder groups that include all key constituencies.

Stakeholders were asked to prioritize individual performance parameters within each Category, but most of those results are not presented here. Some Stakeholders expressed concern at the utility of such a ranking given that some participants were not technically oriented and unqualified to make judgments on many specific parameters. However, some notable trends were observed as summarized below.

- Most parameters were identified as well suited for both field and laboratory testing (exceptions below).
- Most Stakeholders felt flicker was not an important parameter to measure.
- The following parameters were generally identified as best suited for laboratory analysis only: impacts from exhaust back pressure and fuel pressure variance, load compatibility assessments, and equipment responses to upsets.

It is concluded that 35 parameters included in the following performance categories be considered critical to the stakeholder community: Electrical Generation Performance, Energy Production Efficiency, Operational Performance, and Atmospheric Emissions (Notebooks have complete listings of parameters).

ADVANCED ENERGY STAKEHOLDER GROUP MEETING



A G E N D A

Thursday, November 6, 2003 8:00 AM – 5:30 PM
Hotel Monaco - 700 F Street NW, Washington, DC 20004

7:15 – 8:15 Continental Breakfast

7:30 – 8:00 Registration (at the door)

8:00 – 8:45 INTRODUCTIONS AND WELCOME

- *Stephen Piccot, GHG Center Director* - Goals and Agenda
- Stakeholders and Meeting Participants – Introductions and Interests

8:45 – 11:15 PANEL SESSION: ISSUES AFFECTING THE USE OF ADVANCED ENERGY TECHNOLOGIES

- *Bruce Poole, Office of Markets, Tariffs, and Rates – Federal Energy Regulatory Commission (FERC)* - FERC's Proposed Rule for Small Generator Interconnections
- *Tom Basso, NREL / IEEE SCC21 Standards Coordinating Committee* - Impact of IEEE Interconnection Standards
- *Roger Ballentine, President, Green Strategies, Inc.* – Insights Into Advanced Energy Regulatory Drivers
- *Bob Simon, Democratic Staff Director for Committee on Energy and Natural Resources*- Impact of Energy Policy Act Legislation on Advanced Energy

MORNING BREAK

- *Steven Greenberg, RealEnergy* – Putting New Energy Technologies Into Service
- *Andy Skok, FuelCell Energy* – Wastewater Treatment Facilities – A Unique Opportunity
- All Advanced Energy Stakeholder Group Members – Q&A Session and Panelists

11:15 – 12:30 GHG CENTER BUSINESS SESSION 1 - TECHNOLOGIES

- *Teresa Harten, U.S. EPA* – The EPA's Environmental Technology Verification (ETV) Program
- *Mark Meech, GHG Center* – Overview of the Greenhouse Gas Technology Center
- Energy technology voting (facilitated session where stakeholders list and prioritize promising technologies the Center should focus on)

12:30 – 1:30 LUNCH BUFFET

A G E N D A

Thursday, November 6, 2003

Washington, DC

8:00 AM – 5:30 PM

1:30 – 2:30 GHG CENTER BUSINESS SESSION 2 – TESTING PROTOCOLS

- *Debbie Haught, U.S. DOE, Office of Distributed Energy Resources – Funding DOE Test and Verification Programs*
- *Tim Hansen, GHG Center (facilitator) – Discussion, commentary, and guidance from GHG Center Stakeholders on DG performance testing protocols*

2:30 – 3:30 FIRST MEETING OF THE ADVANCED ENERGY DEMONSTRATION COUNCIL

- *Stephen Piccot - GHG Center Director – Welcome and Introductions*
- *John Shea - New England Governor's Conference, Inc. (NEGC) - Facilitator*
- *Richard Drake – New York State Energy Research and Development Authority (NYSERDA)- An Overview of the NYSERDA Program*
- *John Holt – National Rural Electric Cooperative Association (NRECA) - Rural Electric Cooperatives and Renewable Energy*

3:30 – 3:45 AFTERNOON BREAK

3:45 – 5:15 ADVANCED ENERGY DEMONSTRATION COUNCIL (CONTINUED)

- *Richard Handley – Northeast Regional Biomass Program (NRBP); CONEG (Coalition of Northeastern Governors) Policy Research Center, Inc.*
- *Ed Lewis - Colorado Governor's Office of Energy Management and Conservation – An Overview of the OEMC Program*
- *Open Discussion and Future Planning – John Shea (Facilitator)*

5:20 – 5:30 WRAP-UP AND ADJOURN

5:30 – 6:30 CLOSING RECEPTION

- *Informal collaboration (hors d'oeuvres and drinks)*
-

Roster: Advanced Energy Stakeholder Group

Member Name	Organization Name	Attended	Speaker	Email Contact
Alex DePillis	Wisconsin DOA – Division of Energy			alex.depillis@doa.state.wi.us
Andrew Skok	FuelCell Energy, Inc.	✓	✓	askok@fce.com
Arthur Soinski	California Energy Commission			asoinski@energy.state.ca.us
Bruce Poole	Federal Energy Regulatory Commission	✓	✓	bruce.poole@ferc.gov
Carolyn C. Drake	Southern States Energy Board	✓		drake@sseb.org
Charles Miller	Maryland Energy Administration	✓		cmiller@energy.state.md.us
Charles Underhill	Vermont Public Power Supply Authority			underhill@vppsa.com
Christine Hurley	Platts Research & Consulting/E Source	✓		churley@esource.com
David Terry	NASEO			dterry@naseo.org
David Van Holde	Distributed Energy Service			David_van_holde@esource.platts.com
Debbie Haught	US Department of Energy	✓	✓	Debbie.haught@ee.doe.gov
Don Strange	Canadian Climate Change Secretariat	✓		stranged@ccs.gc.ca
Ed Lewis	Colorado Governor's Office of Energy Management & Conservation	✓	✓	Ed.lewis@state.co.us
Forest/Rodney Heath	Engineered Concepts	✓		bog@cyberport.com
Himesh Dhungel	STM Power, Inc.			Dhungel.himesh@stmpower.com
Irving Mintzer	GBM	✓		
James Cowart	Tennessee Valley Authority			jdoward@va.gov
Jennifer Weeks	Northeast States for Coordinated Air Use Management			jweeks@nescaum.org
Joe Badin	West Penn Power Sustainable Energy Fund	✓		jbadin@energetics.com
John Holt	National Rural Electric Cooperative Association	✓	✓	John.holt@nreca.coop
John Pohlhaus	Connected Energy Corporation			John.pohlhaus@connectedenergy.com
John Shea	New England Governor's Conference, Inc.	✓	✓	Charon2@msn.com
John W. Jimison	US Combined Heat & Power Association	✓		john@jwj-llc.com
Leonard Bull	NCSU Animal Science Department – Animal and Poultry Waste Management Center	✓		leonard_bull@ncsu.edu

Member Name	Organization Name	Attended	Speaker	Email Contact
Marshall Kaiser	Safe Harbor Water Power Corporation	✓		mkaiser@shwpc.com
Merrill Smith	US Department of Energy	✓		Merrill.smith@ee.doe.gov
Mike Ball	Air Daily/Energy Argus	✓		mball@energyargus.com
Neil Elliott	ACEEE			rne Elliott@aceee.org
Paul Bony	Delta-Montrose			paulbony@dmea.com
Phil Badger	Southeast Regional Biomass Energy Program	✓		pbadger@bioenergyupdate.com
Richard Biljetina	Energy Solutions Center	✓		biljet@att.net
Richard DeBlasio	National Renewable Energy Laboratory			ddeblasi@tcp link.nrel.gov
Richard Drake	New York State Energy Research and Development Authority	✓	✓	rld@nyserda.org
Rick Handley	Coalition of Northeast Governors	✓	✓	nrbp@sso.org
Rob Brandon	CANMET			rbrandon@nr can.gc.ca
Robert Simon	Democratic Staff Director for Senate Committee on Energy & Natural Resources	✓	✓	Not available
Robert Wayland	US EPA – Office of Air Quality Planning and Standards	✓		Wayland.robertj@epa.gov
Roger Ballentine	American Council for Renewable Energy - Green Strategies, Inc.	✓	✓	roger@greenstrategies.com
Scott Klara	US DOE			Scott.klara@netl.doe.gov
Steven Greenberg	Real Energy, Inc.	✓	✓	smgreenberg@adelphia.net
Sue Gander	US EPA	✓		Gander.sue@epa.gov
Tim Maker	Biomass Energy Resource Center	✓		tmaker@biomasscenter.org