Energy Advisory Committee

Washington Metropolitan Council of Governments
777 North Capitol Street, NE, Washington, DC

May 17, 2012 DRAFT Meeting Highlights
Held at DDOE Headquarters

Attendance:

Call to Order (Olayinka Kolawole)

- The meeting was called to order at 10:00am.

Approval of April 19, 2012 Meeting Summary

- The meeting summary was approved.

Stationary Fuel Cells (Bill Bockoven, Federal Sales, Bloom Technology; Robert Rose, Breakthrough Technologies Institute)

- Mr. Bockoven provided an introduction to Bloom stationary fuel cells. These solid oxide fuel cells convert gas energy sources to electricity through an electrochemical reaction, without combustion. They may use natural gas, biogas, or land fill gas. The systems produce electricity at 60% efficiency and release fewer emissions than combustion. The systems also have a very small water impact, because they recycle heat and water internally. Benefits to users include reliability, predictable fuel consumption, simple installation and maintenance, and scalability.

- Mr. Rose discussed applications for fuel cell technology and their markets. Fuel cells are a family of technologies, with different fuel cell types offering a range of efficiencies from 40-65% and operating temperatures from 50 degrees Celsius to over 800 degrees. Capacity can range from a few hundred kW to 1 MW per system, with multi-MW systems available by connecting multiple systems. They offer high energy efficiency, decreased emissions, a wide range of applications, high reliability, high quality power, and are quiet compared to other generation technologies.

- The largest market for fuel cells is providing stationary power, including CHP and backup power, for the commercial, municipal, and residential sectors. Micro and portable systems, in the 1-10kW range, are also beginning to emerge. Fuel cell vehicles are gaining traction as well, but deployment is largely constrained by lack of hydrogen fueling infrastructure.

Geothermal Technology (Mike Maher, REHAU Construction)

- Mr. Maher discussed REHAU's ground loop heat exchange system. These relatively shallow systems use

earth as energy storage, taking heat out of the building and the ground during summer, and performing the opposite in winter. They can offer savings of 30 to 70% for heating and 20 to 50% for cooling over conventional technologies. In addition to reduced operating and maintenance costs, these systems reduce emissions and promote energy efficiency. REHAU's piping is made of crosslinked poly ethylene (PEX), which when formed in a nested u-bend allows greater heat exchange in the same space compared to other pipes.

- A few regional case studies were discussed. Minnie Howard Elementary School in Alexandria uses solar panels and a ground loop heat exchanger, which will save the school district $430,000 over the system's lifecycle, and reduce CO_2 emissions by 50,000 kg per year. The Lucketts Community Center in Loudoun County is also using geothermal heat exchange technology.

Natural Gas Reverse Auction (Sam Brooks, District Department of General Services and Patricia Lovelady, Consultant)

- The District's natural gas contract is up in December, and its electricity contract ends in January. The city is acting as lead agency for the natural gas reverse auction, and is offering the opportunity for other entities to join in the procurement. The city is considering long term strategy and timing for the procurement, and aims to increase the share of renewables in its electrical profile. Anyone interested in joining the reverse auction should contact Mr. Brooks or Ms. Lovelady.

Verizon Smart Meter Technology (Ernie Lewis, Verizon Business, Energy and Utility Practice)

- Mr. Lewis discussed opportunities for utilities to use "grid intelligence" technologies.
- New opportunities are emerging for utilities as smart meters, electric vehicles, distributed renewables, and demand management penetrate the market. Better information about the grid is needed to integrate renewable energy sources and optimize the grid. However, ensuring security and reliability while maintaining alignment with multiple levels of policy and regulation, enhancing customer service, and promoting energy efficiency is a challenge for utility enterprise.
- Utilities are experiencing a data "explosion." Smart grids have enabled utilities to collect thousands of usage data points per customer per month, in contrast to the once-per-month reading from old meter technology. Additionally, the rapid introduction of new devices have changed the ways that customers interact with their utility.
- Verizon offers grid information an management services for small and municipal utilities, asset and equipment monitoring, outage management and customer notification, load balancing and decision-making, and integrated energy monitoring in "smart" buildings.

Department of Defense Clean Energy Community Collaborative (Jeff King, MWCOG)

- DOD is pursuing a number of efficiency, renewable energy, and net zero energy goals as a result of legislation and a 2009 executive order. Part of the executive order requires agencies, including DoD, to "support sustainable communities." COG is investigating opportunities to assist in this mission, possibly involving military bases in the region.
- A summit is tentatively scheduled for June 27 at COG Headquarters.

Solar PV Collaborative (Jeff King, MWCOG)

- Optiny has completed and delivered its engineering assessments for sites in Virginia, Maryland, and DC. There are 30 MW of technical potential for PV in Virginia, but much of those sites are not economically feasible to construct. In DC and Maryland, WMATA is likely to serve as the lead agency. There is interest in Montgomery County to install panels on Metro garages, and there is also interest in Greenbelt. DC Public Schools may also get involved.

Next Meeting Date and Adjournment

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