Senate hearing on grid-scale energy storage highlights regional tensions

By Jon H. Harsch

Washington, Dec. 10 – Industry and government expert witnesses detailed both the promises and challenges of developing renewable energy resources in a Senate Energy Committee hearing on energy storage Thursday. But it was Senator Bob Corker (R-TN) who highlighted what could be the greatest challenge: overcoming barriers presented by regional differences.

Renewable energy proponents call for a massive, high-voltage "smart grid" transmission system to move abundant wind and solar power from the Midwest and Southwest to high-demand urban areas. The idea is that not only would major cities like Chicago, New York and San Francisco benefit from new sources of clean electricity, but shipping power from remote rural areas could trigger a job-generating rural renaissance.

But that whole transmission concept raises Corker's regional hackles. In the hearing, he explained first that "I am not anti-renewable" and then that:

- "I know there have been comments about the fact that, well, something happening in some other place, because it is environmentally good benefits mankind so everybody should pay for it. But I think that all of us are wanting to make sure that our constituents are paying for the power that they are receiving."
- "I think our concern is that having some grid going to some remote area in North Dakota which is going to have no benefit for anybody up here, that we end up, our constituents end up paying for that. I think that's what we're trying to keep from happening."
- "I don't want folks in Tennessee paying for some transmission grid to some mesa someplace."
- "There have been comments made by associates and folks . . . that this benefits all of mankind and everybody should pay for this. I don't think that's an appropriate way of looking at reliability and economic benefit."

Corker concluded by asking Federal Energy Regulatory Commission (FERC) Commissioner Jon Wellinghoff to find a way "to ensure that we don't spread these costs around to mankind but that people actually receiving a benefit pay for it."

Wellinghoff replied that "I certainly agree with you that with respect to allocation of costs in transmission that we should in fact do that in a way that somehow fairly spreads the benefits and costs." But he also cautioned that "you can have benefits today for one set of transmission customers or rate payers and those benefits will change next year because the nature of the grid will change." He said that if FERC is asked to precisely identify which customers are receiving benefits, "we're going to be wrong."

Senator Jeanne Shaheen (D-NH) delivered a less diplomatic response to Senator Corker's reluctance to have Tennessee electricity rates affected by building transmission lines to bring power from North Dakota and Arizona. She commented that "the fact that the government invested significantly in the Tennessee Valley Authority, probably had a lot to do with the fact that Senator Corker's concerned about maintaining their low energy prices. The fact that we don't have a similar project in the Northeast means that we have some of the highest energy prices in the country."

Shaheen, however, also voiced concern about the current focus on building new transmission lines. She warned that bringing wind and solar power from the Midwest and Southwest would undermine efforts to develop offshore wind and other renewable resources in the Northeast.

Wellinghoff agreed with Shaheen's warning, saying "there may be substantial benefits to the local economy by developing distributed resources and developing local renewable resources and I think the states and the regions certainly should take that as a priority." But he pointed out that recent studies show that "The cheapest scenario was to take the Midwest wind and deliver it to the Northeast." He said that means "People in the states need to decide whether they want lower rates for their consumers, or do they want more local development of renewable resources."

Wellinghoff concluded that "I don't think these decisions will be ones that will be made by the federal government, because right now ultimately, investments in transmission are made by the private sector. So the private sector is the one which through the markets is going to decide what are the most appropriate investments to make. I don't know of anyone right now who is suggesting that there should be massive amounts of federal money going in to build transmission lines throughout the country . . what we need to do is to make sure that we get the markets right, that we incorporate into the markets things like the price of carbon that will ensure that as those markets are structured, they produce the policies, both the state and the national policies, that we need to achieve our goals."

Overall, the hearings' witnesses and the senators all agreed on one key point: that the federal government and private industry should aggressively pursue all possibilities for developing more energy storage capacity. Energy Committee Chair Jeff Bingaman (D-NM) commented that "grid-scale energy storage technologies have the potential to transform the grid, enabling energy to be delivered exactly when it is needed, regardless of when it was produced and providing a new toolbox of capabilities for managing our grid. These capabilities will allow us to run our grid more efficiently and reliably and provide better power to customers. And they will allow us to maximize the capacity of our existing generation, transmission and distribution assets, reducing the need to build more. We're also learning that energy storage technologies will be instrumental in achieving larger amounts of renewable generation on the grid by acting as a shock-absorber for fluctuations in power and providing firm, dispatchable energy."

Ranking Member Lisa Murkowski (R-AK) added that "we need a wide variety of energy storage technologies, everything from pumped hydro, to flywheels and batteries, to compressed air energy storage, even plug-in vehicles can play an important role in shifting load to off-peak hours."

Department of Energy Under Secretary for Science Steven Koonin summed up the reasons for the administration's commitment to grid-scale energy storage: "Adequate deployment of storage technologies can materially reduce power fluctuations, enhance system flexibility, and enable greater integration of variable generation renewable energy resources such as wind and solar power. Each of these is critical for achieving the nation's clean energy goals. Energy storage can also help stabilize the price spikes that occur during times of peak demand, and can delay or potentially avoid the need to construct capital intensive facilities and infrastructure that use conventional fuels and produce greenhouse gases."

Koonin pointed out another compelling reason for adding the greater reliability that storage provides : "Studies have shown that momentary outages, lasting less than 5 minutes, cost the U.S. some $52 billion annually."

For details the Energy Department's 16 energy storage demonstration projects funded by the American Recovery and Reinvestment Act to accelerate deployment of grid-scale energy storage, go to: www.agri-pulse.com/uploaded/20091210H3.pdf.

To read written testimony from the Dec. 10 hearing, go to: http://energy.senate.gov.

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