

Energy Storage – State Policy Issues

February 2, 2011

By

Barry K. Worthington

Executive Director

United States Energy Association

Ladies and gentlemen, I would like to start out by thanking you for attending today's conference in hopes of broadening your knowledge about energy storage. A few months ago one could have concluded that storage policy at the state level was a limited by-product of policies designed to encourage renewables more generally. And you would not be far off to reach that same conclusion today. But two things happened that changed the situation, and yes, both occurred in California.

The California Energy Storage Bill – AB-2514 passed the State Assembly and was signed into law by Arnold Schwarzenegger on September 30, 2010. While the Governor is the ex-governor and may be a future Terminator again, this legislation has a solid future because it was strongly supported by current Governor Jerry Brown, then State Attorney General. Governor Brown gets a second act as Governor and Governor Schwarzenegger gets a second act, as well, as an actor.

This bill would require the CPUC, by March 1, 2012, to open a proceeding to determine appropriate targets, if any, for each load-serving entity to procure viable and cost-effective energy storage systems and, by October 1, 2013, to adopt an energy storage system procurement target, if determined to be appropriate, to be achieved by each load-serving entity by December 31, 2015, and a 2nd target to be achieved by December 31, 2020. The bill would require the governing board of a local publicly owned electric utility, by March 1, 2012, to open a proceeding to determine appropriate targets, if any, for the utility to procure viable and cost-effective energy storage systems and, by October 1, 2014, to adopt an energy storage system procurement target, if determined to be appropriate, to be achieved by the utility by December 31, 2016, and a 2nd target to be achieved by December 31, 2021.

The legislation stresses that storage must be “technologically viable and cost effective,” particularly related to demand side management strategies.

In November 2010, the California Public Utility Commission released its Order Instituting Rulemaking, which procedurally is the starting point to arrive at the CPUC Setting procurement targets for the three investor owned utilities that the CPUC regulates, namely Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric.

Substantively, this method of rulemaking is a forward-looking effort to establish a new model of electric power storage regulations by outlining four key points:

1. Determine and establish when, where, and how storage should be developed and deployed;
2. Reduce barriers to utilization of storage;
3. Determine the costs and benefits of storage; and
4. Who pays!

This last point is likely to be the most significant issue because I believe all of the three utilities, from a policy perspective, endorse and want to encourage storage.

*But, like interstate transmission lines, like interconnection costs for distributing resources, and for energy efficiency programs, often the entity that benefits least can be called upon to pay a disproportional cost of technology deployment. This can be particularly the case at the research, development and demonstration phase.

Looking forward, two details are relatively clear, the first being that Governor Brown has begun to replace some of the Commissioners at the CPUC. However, his appointees are expected to be “like-minded” on this issue, and of course the CPUC staff will stay largely intact. Second, California has a habit of setting trends in state-level energy regulation, both in electricity and natural gas. Other jurisdictions are taking notice of California’s action, so you are likely to see similar bills introduced as the 2011-2012 state legislatures convene.

Additionally, states that have Renewable Portfolio Standards (i.e. efficiency standards or other regulatory policies to try to limit the need for new future base load power generation or peaking generation), are carefully looking at the state of storage technology development, the economies of storage and other related issues, many of which you will hear about today and tomorrow.

For example, New Hampshire SB-451 focused on encouraging distributed generation and explicitly encourages storage while Florida HB-1735 focused primarily on efficiency and demand reductions. Among the strategies included is New Jersey’s energy action plan that encourages storage as a peak reduction strategy. Even with the New Jersey master plan being redone and Governor Christi in a budget reduction mode, it is believed that many state level financial incentives for advanced technology may not stand. A sizeable fund established to encourage deployment of combined heat and power systems has been reallocated to the state general fund. Funds for mass transit and Hudson River Crossing into New York have been cut. Commissioner Fox will more than likely give you more details.

A previous speaker discussed one major state-level policy issue, which is the lack of clarity on where in the power system energy storage fits and who is responsible to regulate it! This may be more important in competitive generation markets, which are around 30 states, varying on levels of technology.

In a fully integrated, fully bundled, fully regulated market, the State Public Utility Commission, whatever the particular state calls it; has regulatory authority over generation, transmission, and distribution.

And storage costs, if found used, useful and prudent can be rate-based and the operating utility is kind of agnostic how it is classified. If the fully integrated electric utility “buys” storage services, so long as the commission agrees on the rate treatment of these costs, there is little downside risk so far as the technology delivers as promised. This risk may be contracted away to the developer/owners!

On the other hand, in competitive markets, the fully regulated distribution utility is the only entity in the value change without risk.

If storage is treated as generation, whether to supply energy, capacity or ancillary, there is no rate-base to place storage in. Therefore, the project owner/developer holds all the inherent risks associated with any project development. While some of these risks may be hedged contractually, they all cannot. Wall Street investors get nervous whenever risks associated with new technology arise. The earlier

comments about FERC creating a storage “category” is interesting and may be useful for some technologies.

Most storage policy actions will remain at the federal level and will likely involve public funding for R&D and demonstration projects at least for the next few years. The majority of this public funding will be federal, not state.

However, state utility commissions will have some jurisdiction on how regulated utilities costs share in federally funding projects if customer revenues are utilized, including items like R&D budgets for the Electric Power Research Institute as well as demonstration projects.

As a result of state agencies being involved in state level policy making which captures the attention of state legislators, the storage industry will do well to not ignore state policymakers who are pivotal to future widespread deployment. They will now have complete authority in the nearly 20 states that are fully regulated, and certainly for those technologies at the distribute company level giving them total authority in all 50 states.

From a public policy perspective, and following the lead of California, one can expect state-level policymakers to be interested in:

- Determining how storage technologies can help meet state policy goals;
- Understanding the various applications for different technologies in their jurisdiction;
- Establishing the costs of storage relative to supply and demand side alternatives;
- Identify the precise benefits including multiple benefits;
- Considering ownership models;
- Considering cost recovery mechanisms, as I said relative to California, who pays;
- Looking at interconnection and siting issues, both in competitive and regulated markets;
- How storage options interplay with dynamic pricing;
- The value, need and mechanisms to incentivize storage.

Given the intelligence and creativity of state policymakers, I am certain that additional public policy issues will be identified and explored.

One final thought, the energy storage industry should be philosophically fuel neutral. I recognize that this event is renewable focused. However, storage is the holy grail of total power system optimization and can serve as a key to continuing to improve capacity factors for nuclear plants.

Off-peak power from a fully depreciated 30 year old nuclear plant will be pretty cheap to store and may match operators and maintenance costs for some renewables, particularly off-shore wind. Also consider the small, 150 megawatt, new modular nuclear reactors proposed, which, if matched, with storage is almost a distributed energy scheme.

Also consider an old 30 year, fully depreciated coal plant. The economies of storage, along with the ability to operate at higher capacity factors 24/7, may make the investments in plant upgrades to meet the pending clean air requirements, once through water cooling and greenhouse gas regulations, more palatable.

Storage may also improve the economics of gas-fired combined heat and power systems, particularly in facilities that have a constant steam load but variable electricity requirements.

So, energy storage should have a rosy future which can be a true game changer for renewables. Frankly, absent federal subsidies' renewables may need storage more than they currently realize.

Thank you.