Pacific Gas and Electric Company™

Kathy Treleven
Manager
State Agency Relations

Mail Code B29L
Pacific Gas and Electric Company
P.O. Box 77000
San Francisco, CA 94177-0001

415.973.4185
Fax: 973.5003

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California Energy Commission
Docket Office, MS-4
Docket No. 09-IEP-1G
1516 Ninth Street
Sacramento, CA 95814

Re: 2009 IEPR – Smart Grid

Docket Office:

Please find attached PG&E's comments on the workshop held May 13-14, regarding 2009 IEPR – Smart Grid.

Please contact me should you have any questions. I can be reached at 415/973-4185.

Sincerely,

Kathy Treleven

Kathy Treleven

Attachment

Comments of Pacific Gas and Electric Company
On Selected Issues Raised at the California Energy Commission's Workshop on Smart Grid Technologies and Policies Needed to Support Energy Policy Goals
May 13 and 14, 2009

Pacific Gas and Electric Company (PG&E) appreciated the opportunity to participate in the California Energy Commission's (CEC's) recent two-day workshop on Smart Grid and how it might be used to support California's various energy policies, from the integration of significant amounts of renewable power, and well as supporting energy efficiency and load management goals. Both Kevin Dasso's and Antonio Alvarez's presentations are part of the record, but PG&E would like to take this additional opportunity to add written comments on a few items.

Storage

First, at a discussion off-line during the second day of the workshop, Commissioner Byron asked for PG&E's opinion on this question, "Should storage be considered transmission for cost recovery purposes?" We appreciate this thoughtful and timely question, but do not have a definitive answer at this time.

As speakers pointed out throughout the two-day workshop, storage technologies can provide multiple benefits to many different components of an electricity delivery system. The characteristics of storage reflect attributes of each component of traditional electric service, from generation all the way down to and behind the customer's meter. A pumped storage hydro facility, for example, is like generation, in that it can deliver energy at a targeted, high value time of peak need, as well as capacity for resource adequacy purposes. A storage facility can provide ancillary services to the transmission grid, in that it can provide minute-by-minute system regulation to support an interconnected grid. At a smaller scale, storage technologies such as storage batteries can be used to moderate a distribution grid, thus acting like distribution. Moreover, such batteries can even be used to moderate loads at a customer's site, and in that role, might even go unnoticed by the utility's system. The multiple natures of storage services can present a challenge for the developer of that storage if and when it seeks cost recovery from regulators for its investment. Cost recovery for utilities differs for transmission assets compared to other components of the electricity system. For IOUs, transmission assets are FERC-jurisdictional; other investments are overseen by the CPUC.

Recent history at FERC provides some guidance. In late 2005, Nevada Hydro proposed that the Lake Elsinore Advanced Pumped Storage (LEAPS) project be considered a transmission asset for cost recovery purposes, and be turned over for operational control to the California Independent System Operator (CAISO). Many of the stakeholders opposed the proposal based on an aversion to the prospect of the CAISO acting as a market participant in the ancillary services market. While in its March 2008 Order, FERC declared that under the Energy Policy Act of 2005 pumped storage meets the definition of "advanced transmission technology", FERC denied Nevada Hydro's CAISO-Transmission Access Charge cost recovery proposal. FERC's denial of Nevada Hydro's specific cost recovery proposal does not necessarily preclude cost recovery of pumped storage projects through some transmission rate mechanism other than the CAISO Tariff. However, at this time no other mechanisms have been proposed. It may be that as storage begins to be pursued as a way to integrate more renewable generation that helps meet broad societal goals, California stakeholders and FERC may be more amenable to considering storage as a transmission facility for cost recovery purposes.

Integration

Second, PG&E wishes to reiterate the points it made in discussing the challenges of integrating renewables into a resource mix. The smart grid could play an important role in the integration of intermittent resources. However, a lot remains to be done to make this a reality. PG&E is currently focusing its attention in the following areas. We encourage the CEC to support similar work.

1. Understand the integration needs of additional intermittent resources. The first step is to determine the operating requirement of intermittent resources (regulation, load following, day-ahead commitment, and ramping requirements), how they vary as a function of their penetration and the technologies used to meet higher RPS targets. PG&E advocates the need for simple tools to allow load service providers, developers, customers and policymakers to understand the main drivers of intermittent operating needs and cots. PG&E has created a simple spreadsheet tool (the Renewable integration Calculator) to help in that learning process. Initial indications are:

- The increased use of intermittent resources will change the need for resources, which are currently defined primarily in terms of meeting an expected peak plus a prescribed planning reserve margin.

- A resource portfolio needs to be increasingly more flexible than today, in order to integrate variable and uncertain intermittent generation.

- Resources available to meet reliability requirements may not be adequate to satisfy operating requirements of additional intermittent resources.

2. Explore opportunities for demand response (DR) to help in the integration of intermittent resources through pilot programs. DR programs until now have been designed for use is very few hours per year, when the system is under stress conditions due to high summer temperatures or major outages. In order to be part of intermittent resource integration, DR needs to be available for continuous use by the grid operator, be visible, and verifiable so that the operator can tell how to adjust the use of its resources in real time.

3. Explore use of different storage technologies to manage the variability and uncertain generation from intermittent resources, and make use over-generation. As indicated in this and prior IEPR workshops, PG&E is exploring the use of large wholesale storage in the form of pumped storage or compressed energy storage, to distributed to forms of storage such as pre-cool commercial buildings, plug-in hybrid electric vehicles. Valuing multiple and competing benefits of storage remains a challenging task.

Conclusion

Thank you for the opportunity to participate in this workshop. The increasing availability of information technologies will strengthen many facets of the electricity business, and smart grid tools can be helpful in advancing many electric policy initiatives of importance to both PG&E and the state.