

October 27, 2009

California Energy Commission  
Dockets Office, MS-4  
RE: Docket No. 09-IEP-1A  
1516 Ninth Street  
Sacramento, CA 95814-5512

Subject: Technology Insights' Suggestions for Draft 2009 IEPR Docket No. 09-IEP-1A  
"Draft 2009 IEPR"

Technology Insights respectfully submits the following comments and suggestions on energy storage deployment in California for the CEC's consideration in preparation of the 2009 and future IEPR Reports.

We commend the CEC for recognition of the role that energy storage can play in renewables integration. Our understanding of California's current strategy for the integration of wind generation is that it relies heavily on deployment of additional gas-fired generation to maintain grid stability – i.e., about 5.8 GW of new gas turbines (GT) for 12.7 GW of wind by 2020 (Intermittency Analysis Project: Final Report," CEC-500-2007-081). Moreover, these GT units must be suitable for fast response, high cycle, part-load operation. Such duty cycles cause increased emissions and a high degree of wear and tear. While energy storage deployment would not eliminate the need for added gas-fired generation, it would avoid much of the inefficiencies and emissions associated with part-load operation and rapid power ramps, conceptually equivalent to the operation of hybrid vehicles. Networked distributed energy storage would bring the added benefit of improved T&D congestion management.

In future updates of the IEPR, we suggest that CEC more fully address the role of networked distributed energy storage within the emerging Smart Grid. For example, advanced battery systems capable of multi-hour energy discharges deployed at selected locations within the grid would enable the more efficient use of existing T&D assets (avoiding upgrades, enhancing reliability) while time-shifting off-peak wind generation to periods of peak demand. We suggest that the CEC consider developing system analysis models to aid T&D planners in identifying high value locations for such systems within the grid.

Finally, we are pleased to see the CEC's treatment of significant barriers to energy storage deployment. As we reported at the CEC Workshop of April 2, 2009, a client has incurred a substantial financial loss on a multi-megawatt energy storage project planned

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for a California utility as a result of confusion (perceived risks) associated with legacy regulations on the ownership of such assets, rooted in the separation of generation and T&D functions. As stated in the draft 2009 IEPR,

*“Because energy storage is not considered generation, transmission, or load, new information is needed to properly integrate these technologies into the utility grid system.”*

Such new information is also needed to clarify buyer-seller roles, i.e., “Who can accrue the benefits from energy storage assets, and who will be the owners of energy storage systems within the Smart Grid?” It is our view that uncertainty on ownership regulations – and attendant uncertainty on investment recovery – presents a nationwide barrier to the deployment of multi-hour energy storage assets within the Smart Grid, and that the CEC is in a position to take the leadership on its resolution.

Regards,

  
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