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May 31, 2011

Chairman Robert Weisenmlller
Commissioner Karen Douglas
California Energy Commission
Docket Office, MS-4
1516 Ninth Street, MS-4
Sacramento, CA, 95814-5512

Dear Chair Weisenmiller and Commissioner Douglas:

Subject: The Los Angeles Department of Water and Power's Response to the California Energy Commission's (CEC) Request for Additional Information Related to the May 17, 2011 Workshop on *Transmission Needed to Meet State Renewable Policy Mandates and Goals, "Docket #11-IEP-1E – Transmission."*

The Los Angeles Department of Water and Power (LADWP) respectfully submits the attached comments in response to the California Energy Commission's (CEC's) request for additional information related to the May 17, 2011 Workshop on *Transmission Needed to meet State Renewable Policy Mandates and Goals.*

The City of Los Angeles has supported renewable energy development to serve our long-term resource goals. As LADWP looks into the future, most of the issues influencing strategic and resource plans are based on the critical issues that LADWP is facing in the areas to address greenhouse gas emissions (GHGs), the Renewable Portfolio Standard (RPS) goals of 33% as mandated by state law, and the integration of increasing amounts of renewable resources.

Attached to this letter, please find responses to the questions posed by the CEC on the topics of the Beacon Project and Intra-Hour Scheduling.

If additional information is necessary concerning this matter, please contact Mr. Oscar A. Alvarez at (213) 367 – 0677 or Mr. Oscar Herrera at (213) 367 – 4880.

Sincerely,

Randy S. Howard
Power Engineering Manager

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Enclosures
c/enc: Mr. Mohammed Beshir
Mr. Oscar Alvarez
Mr. Oscar Herrera

Specific "Homework Assignments" from May 17, 2011 IEPR Committee Workshop
(Judy Grau, May 19, 2011)

The Chairman asked LADWP to provide an update on the status of the Beacon project. He also asked LADWP to tee up the issue of intra-hour scheduling intervals.

Status of the Beacon Project[1]

PROJECT DESCRIPTION

Project Name	Beacon Solar Project
Interconnection Customer	NextEra Power Marketing LLC 700 Universe Boulevard Juno Beach, FL 33408
Location	Kern County, California
Capacity	250MW
Energy	625GWh annually
Resource Type	Solar Photovoltaic
Point of Interconnection	Barren Ridge Substation
Commercial Operation	May 1, 2014

INTERCONNECTION STUDIES

Initial plans described a Solar Thermal generating facility. LADWP completed all the interconnection studies for that original design. On October 13, 2010, NextEra requested to replace the original technology with a Solar Photovoltaic system. This required a complete revisitation of the interconnection studies. The Supplemental Harmonic Study was completed on May 4, 2011 and the Supplemental System Impact Study on May 18, 2011; LADWP is awaiting NextEra's response to these studies. In the meantime, if an Agreement for the Supplemental Facility Study is reached this month, the results from that study

[1] As directed by NextEra Energy, information regarding the Beacon Solar Project was redacted.

should be released sometime in August 2011.

Production at the Beacon Solar Project is being phased in to coordinate with the completion of the Barren Ridge Transmission Project which expands the Barren Ridge Substation and installs two 230kV lines from the substation to new Haskell Substation. Studies show that an early Commercial Operation Date is possible but limited because of transmission capacity constraints. It is LADWP's understanding that NextEra intends to make full use of whatever capacity is available to them. Hence, the May 1, 2014 Commercial Operation Date target.

Tee up the Issue of Intra-Hour Scheduling

The reliable operation of the Bulk Electric System (BES) ***is*** LADWP's first and foremost responsibility as a Balancing Authority[2]. When considering intra-hour Scheduling, we need to ensure that such a transition does not create any risks to the reliability of the BES.

As the state aggressively pursues the integration of renewables to the grid, system operators continually face two major challenges with integrating VER. The first challenge involves the lead time required for a Balancing Authority to make adjustments to its mix of generation resources to integrate VER. The second major challenge faced by system operators is that as more VER are interconnected, they will be required to employ new, sophisticated equipment (e.g. such as combustion turbines) and new software to maintain the reliability of the BES. The non-dispatchable output of VER forces System Operators to augment their reserve requirements, as a result, utilities may potentially face higher fuel costs due to generator inefficiency, higher environmental costs for emissions, premature generator failure due to continuous ramping, and decreased reliability due to unpredictable transmission flows that are capable of exceeding stability limits. Therefore, intra-hour scheduling may not necessarily be a "silver bullet" since will neither eliminate nor result in additional costs to utilities diminish the variability of renewable energy resources.

LADWP is also concerned that any consideration of intra-hour intervals will immediately require affected system operators in and outside of California to (i) increase their staffing levels, and (ii) modify or replace their existing software programs. Both the Western Electricity Coordinating Council (WECC) and the Bonneville Power Administration (BPA) have similar concerns. WECC stated in its response to the Federal Energy Regulatory Commissions (FERC) Notice of Inquiry (NOI) addressing Integration of Variable Energy Resources (VER)[3] that "[s]horter scheduling intervals require increased human and information technology resources, and it is likely that the current infrastructure would be

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[2] "Balancing Authority" is defined as the responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time. *See* Glossary of Terms used in NERC Reliability Standards, dated April 20, 2010.

[3] Response of the Western Electricity Coordinating Council to the Federal Energy Regulatory Commission's Notice of Inquiry addressing Integration of Variable Energy Resources dated April 2, 2010, pg. 7

unable to manage increased intra-hour scheduling." BPA further pointed out that "[f]or intra-hour schedules to be effective, all Balancing Authorities within an interconnection would need to be using the same intra-hour timing, and automatic generation control would require modification if dispatchable generation setpoints are changed on a frequent basis."[4]

In summary, it can be reasonably concluded from LADWP's concerns as well as comments from WECC and BPA to FERC that intra-hour scheduling intervals are too aggressive for all System Operators to manage simultaneously at this time. In essence, any intra—hour scheduling may result in a disparity between more accurate scheduling by renewable energy resources under restricted ramping intervals. LADWP asserts that intra-hour scheduling is not required if a Balancing Authority's generation portfolio provides sufficient generation flexibility to reliably integrate a fixed percent penetration of renewable energy resources.

[4] Comments of the Bonneville Power Administration to the Federal Energy Regulatory Commission's Notice of Inquiry addressing Integration of Variable Energy Resources dated April 2, 2010.