

Approved: October 30, 2013

GENERAL SESSION MINUTES MARKET SURVEILLANCE COMMITTEE MEETING September 6, 2013 ISO Headquarters Folsom, CA 95630

September 6, 2013

The Market Surveillance Committee (MSC), an advisory committee to the ISO Board of Governors, convened the general session at approximately 10:00 a.m. and the presence of a quorum was established.

ATTENDANCE

The following members of the Market Surveillance Committee were in attendance:

James Bushnell Scott Harvey Benjamin Hobbs, Chair Shmuel Oren

GENERAL SESSION

The following agenda items were discussed in general session:

PUBLIC COMMENT

No public comment was offered at this time.

DECISION ON GENERAL SESSION MINUTES

<u>Motion</u>

Chairman Hobbs:

Moved, that the Market Surveillance Committee, Advisory Committee to the Board of Governors of the California Independent System Operator Corporation, approve the general session minutes from the June 27, 2013 meeting.

The motion was seconded by Committee member Bushnell and approved 4-0-0.

MID/MIP/D. Cullo Page 1 of 6



Approved: October 30, 2013

Chairman Hobbs:

Moved, that the Market Surveillance Committee, Advisory Committee to the Board of Governors of the California Independent System Operator Corporation, approve the general session minutes from the July 2, 2013 meeting.

The motion was seconded by Committee member Harvey and approved 4-0-0.

DISCUSSION ON FLEXIBLE RESOURCE ADEQUACY CRITERIA AND MUST OFFER OBLIGATIONS INITIATIVE

Carrie Bentley, Senior Market Design and Policy Specialist, made a presentation that addressed flexible use-limited resource management. Mrs. Bentley stated that resources that have monthly and annual use-limitations and are flexible would have a must-offer requirement to offer into the day-ahead and real-time market economically. She discussed a problem that had been identified with inefficient dispatch where the ISO may dispatch the resource at the "wrong" time and cause the resource not to be available during a later, higher value period. Furthermore, she stated there was a risk that the generator may be dispatched in a manner where it was no longer available to economically bid in and therefore would be penalized by the flexible capacity incentive mechanism. These are examples of the "opportunity cost" problem. Mrs. Bentley provided an overview of potential solutions to allow use-limited resources to economically adjust their start-up, minimum load, and energy bid costs or impose hard stops when resources near their use limits.

Discussion followed among the MSC members and stakeholders.

Bradford Cooper, Manager, Market Design and Regulatory Policy, provided comments regarding use-limited resources. Gillian Biedler, on behalf of NCPA provided comments concerning the use of default energy bid calculations. She continued to inquire as to whether the ISO would utilize a robust in-depth analysis of default energy bids. Ms. Bentley provided responding comments and stated that the ISO would like to leverage what is already in the system but that the particular methodology did not address start-up or minimum load costs.

Mike Castelhano, Market Monitoring Analyst, provided comments regarding adjusting the opportunity costs dynamically.

Chairman Hobbs proposed general questions about mitigation, registering of startup costs, how often they can change, and how opportunity costs calculations should figure into dispatched. Ms. Bentley and Mr. Cooper provided clarifying comments on the current process.

MID/MIP/D. Cullo Page 2 of 6



Approved: October 30, 2013

Bob Hoffman, on behalf of Oxy Petroleum, provided comments regarding use-limited resources. Karl Meeusen, Market Design and Regulatory Lead responded with clarifying comments. Matt Barmack, on behalf of Calpine made a comment regarding use limits and using use limited resources to provide resource adequacy. Discussion regarding use limitations occurred between committee members. Ellen Wolfe, on behalf of Western Power Trading Forum provided supportive comments in relation to Bob Hoffman's comments regarding use limited resources. Chairman Hobbs noted her comment.

Chairman Hobbs made a presentation that addressed a procedure for calculation of opportunity costs of starts. Discussion among the committee members ensued.

Jeff Nelson, on behalf of Southern California Edison, provided comments regarding opportunity costs. Chairman Hobbs provided clarifying comments in response to the opportunity cost calculations and price forecast.

Chairman Hobbs confirmed there were no additional questions.

Chairman Hobbs made a presentation that addressed the need for and definition of a resource adequacy product. A discussion among the committee members ensued about flexible resource adequacy and long term resource adequacy.

Steve Keehn, Sr. Advisor of Market and Infrastructure Policy, provided comments regarding the short-term market.

Don Tretheway, Lead Market Design and Regulatory Policy Specialist, provided clarifying comments in regards to suppressed price spikes.

Jeff Nelson, on behalf of Southern California Edison, provided additional comments regarding regulatory risks.

Chairman Hobbs confirmed there were no additional questions.

Karl Meeusen, Market Design and Regulatory Lead, then gave a presentation regarding incentive payment options within the standard flexible capacity product. Mr. Meeusen further discussed two proposed methods, the bucket method and the adder method, that would determine the charges and credits.

A discussion among the committee members ensued regarding the two pricing methods.

Mr. Cooper offered comments regarding the existing resource adequacy standard capacity product.

MID/MIP/D. Cullo Page 3 of 6



Approved: October 30, 2013

Ellen Wolfe, on behalf of Western Power Trading Forum, provided comments and stated that the adder method was more versatile. Ms. Wolfe provided further comments regarding replacement costs.

Chairman Hobbs confirmed there were no additional questions.

RECESSED

There being additional general session matters to discuss, the general session was recessed at approximately 12:25 p.m.

RECONVENED

The Market Surveillance Committee reconvened the general session at approximately 1:15 p.m. and the presence of a quorum was established.

ATTENDANCE

The following members of the Market Surveillance Committee were in attendance:

James Bushnell Scott Harvey Benjamin Hobbs, Chair Shmuel Oren

GENERAL SESSION

The following agenda items were discussed in general session:

DISCUSSION ON FULL NETWORK MODEL INITIATIVE

Committee member Harvey made a presentation that addressed pricing interchange with a full network models. He provided an overview of various radial models of the California ISO's interconnection with other balancing authority areas as well as a full network model. He described what choices for modeling and price would work out best if they were informed by information regarding (1) which constraints would be materially impacted by external resources and likely to bind, (2) which resources were generally moved to support changes in net interchange, and (3) how those resources impact the constraints. He concluded that even if the resources generally moved cannot be directly observed, the California ISO could analyze how flows on key constraints have changed with changes in net interchange with a particular balancing authority area and infer how to model the source.

MID/MIP/D. Cullo Page 4 of 6



FINAL Approved: October 30, 2013

Eric Hildebrandt, Director of the Department of Market Monitoring, asked a clarifying question regarding data for the full network model.

Delphine Hou, Sr. Market Design and Policy Specialist provided responding comments regarding data for the full network model.

Ellen Wolfe, on behalf of the Western Power Trading Forum, provided comments regarding congestion with outside balancing authority area. Committee member Harvey's provided clarifying comments.

Mr. Cooper provided comments regarding scheduling constraints and flow constraints. A brief discussion ensued.

DISCUSSION ON ENERGY IMBALANCE MARKET

An open discussion of the energy imbalance market occurred; no presentations were given during this time.

Don Tretheway, Lead Market Design and Regulatory Policy Specialist, provided comments regarding the energy imbalance market draft final proposal that was released on September 23.

Committee member Bushnell asked the stakeholders to provide their comments during the meeting or via email to Chairman Hobbs regarding the energy imbalance market proposal.

Jeff Nelson, on behalf of Southern California Edison, provided comments regarding convergence bidding in relation to the energy imbalance market design. He requested that the ISO conduct a phased-in approach to be sure the system was working within the energy imbalance market before going to a full market model.

Discussion among Mr. Nelson, Mr. Tretheway and the MSC Committee members ensued.

Mr. Cooper provided clarifying statements regarding greenhouse gas prices and hydropower.

Ellen Wolfe, on behalf of the Western Power Trading Forum, provided comments regarding the amount of participation envisioned within the energy imbalance market and convergence bidding.

Discussion between Ms. Wolfe, Mr. Tretheway and the MSC Committee members ensued.

MID/MIP/D. Cullo Page 5 of 6



Approved: October 30, 2013

Mr. Tretheway provided clarify statements regarding the energy imbalance market design.

Committee member Harvey requested that Mr. Tretheway provide clarifying comments regarding resource sufficiency evaluation, flexi-ramp sufficiency evaluation and base schedule over scheduling and under scheduling as related to the energy imbalance market.

Discussion between Mr. Tretheway and the MSC Committee members ensued. Jim Price, Sr. Advisor Engineering Specialist provided clarifying statements regarding historic variability and flexible capacity.

Partha Malvadkar, on behalf of Pacific Gas and Electric, asked a clarifying question about over scheduling, and a discussion between Mr. Harvey, Mr. Tretheway and Mr. Malvadkar ensued.

Jeff Nelson, on behalf of Southern California Edison, asked a clarifying question about the minimum amount of participation needed to run the energy imbalance market as well as base schedule loads. Mr. Tretheway and Mr. Price provided responsive comments.

Chairman Hobbs confirmed there were no additional questions.

FUTURE AGENDA ITEMS

Chairman Hobbs confirmed the next MSC meeting was scheduled for November 15, 2013 with tentative meeting topics regarding contingency modeling enhancements, flexible resource adequacy criteria, and must offer obligations.

Chairman Hobbs confirmed there were no additional questions.

ADJOURNED

There being no additional general session matters to discuss, the general session of the Market Surveillance Committee was adjourned at approximately 3:15 p.m.

MID/MIP/D. Cullo Page 6 of 6