



Memorandum

To: Board of Governors
From: Chuck King, Vice President, Market Development and Program Management
Lorenzo Kristov, Principal Market Architect
Date: January 18, 2006
Re: *Approval of Changes to Metered Subsystem Provisions for MRTU Release 1*

This memorandum requires Board action.

EXECUTIVE SUMMARY

This memorandum describes two changes to the MRTU Release 1 provisions for Metered Subsystems (MSS), which Management recommends for Board approval at this time. These two changes revise certain aspects of the November 19, 2004 MSS White Paper, which the Board approved on October 31, 2005. The two proposed changes are:

1. Settlement of Net MSS Demand at MSS Locational Prices Under the Net Settlement Option

Under the terms of the November 2004 White Paper, MSS operators who have generation inside the electrical boundary of the MSS are able to choose on an annual basis whether to be settled on a net basis or a gross basis for their generation and their load in each settlement interval. For MSS operators who elect net settlement, the change proposed today is that net demand in any settlement interval will be settled at the MSS-specific Load Aggregation Point price (the "MSS-LAP" price). The MSS-LAP price is a load-weighted average of the Locational Marginal Prices (LMPs) at all nodes within the MSS. This represents a change to the proposal in the November 2004 MSS White Paper, which stated that such net demand would be settled at the relevant investor-owned utility LAP price (the "IOU-LAP" price). With this change, the opportunity for MSS demand to be settled at the IOU-LAP price will be available only under the Gross Settlement option. This change is needed to address a problem identified by LECG in their comprehensive review of the MRTU market design proposal. With this change, the incentives for MSS to operate their own generation located in congested areas of the CAISO grid are brought into alignment with the operating needs of the grid. The additional change described below is needed essentially as a consequence of this change.

2. Provisions for Load Following Under the Gross Settlement Option

The intent of the MSS load following provisions is to allow a MSS operator to dispatch its own supply resources in real time to follow its own load deviations. In the discussions leading up to the November 2004 MSS White Paper,

the parties agreed that it would be appropriate for a load-following MSS to elect the net settlement option, and the White Paper reflects that requirement. With change 1 above, however, the load-following MSS becomes ineligible to settle at the IOU-LAP price for its net load. Thus, in conjunction with change 1, the CAISO agreed to consider and, if possible adopt provisions to allow a load-following MSS to elect gross settlement. Thus the second change recommended by Management at this time is a set of provisions that govern the load-following MSS under gross settlement.

The remainder of this memorandum provides additional background and detail on these proposals.

BACKGROUND

Since July 2003 when the CAISO filed its comprehensive MRTU market design proposal, the CAISO has continued to refine MRTU issues as they relate to Metered Subsystems (MSS). MSS exist and are operating today, but the tariff provisions governing their operation and settlement today require modification to be consistent with the MRTU design. During 2004 the CAISO held extensive discussions with stakeholders to specify how MSS would operate under MRTU, and this process resulted in the November 19, 2004 MSS White Paper documenting specific policies related to MSS under MRTU. The MSS White Paper was presented by Management and approved by this Board on October 31, 2005.

Under contract to the CAISO, LECG performed a comprehensive review of the MRTU Market Design. On February 23, 2005 LECG published its report on its review in which it identified an issue regarding the Load Aggregation Point (LAP) structure in relation to MSS. In particular, the November 19, 2004 MSS White Paper proposed that an MSS would have the option to settle its generation and load on either a gross basis or a net basis, and that under the net settlement option the net load of the MSS would be settled at the investor-owned utility-based LAP price (IOU-LAP price) while the net generation would be settled at the MSS locational price. The problem identified by LECG occurs when the MSS is located in an area where the locational price tends to be higher than the IOU-LAP price due to congestion coming into the MSS area, and the MSS tends to be a net load. In such a case an inefficient incentive is created; specifically, there is a disincentive for the MSS to operate its local higher priced generation to help relieve congestion because that generation will implicitly earn only the lower IOU-LAP price (i.e., by offsetting local MSS load) rather than the higher locational price.

Over the last few months CAISO staff has engaged MSS stakeholders to address the issue identified by LECG. The issue was already under discussion with the MSS parties when Management presented the November 2004 MSS White Paper to the Board for approval on October 31, 2005. At that time it was not possible to bring these discussions to conclusion in time for incorporation in a November 30 MRTU tariff filing, and therefore Management recommended that the Board approve the MSS provisions as contained in the November 2004 White Paper to be filed in the November tariff filing, with the intention of continuing to work on this issue with stakeholders to finalize the modifications needed to address the LECG issue. With the deferment of the tariff filing to January 31, 2006, the CAISO staff and MSS stakeholders have been able to continue discussing the issue and have arrived at a workable solution, as summarized at the beginning of this memorandum. Management therefore recommends that the Board approve this solution for incorporation in the January 31 tariff filing.

THE PROPOSED CHANGES

1. Settlement of Net MSS Demand at MSS Locational Prices Under the Net Settlement Option

This change represents a simple and intuitive solution to the problem identified by LECG. The perverse incentive not to operate a high-cost resource when it should be able to earn a high locational price to relieve a local constraint occurs as a result of net settlement in conjunction with pricing for load at the level of the IOU-LAP. By limiting eligibility for IOU-LAP pricing for load to the gross settlement option, this problem is solved because the local generator will receive the locational price for all the energy it generates. In addition to discussing this solution with the MSS parties, CAISO staff have discussed it with Scott Harvey of LECG and he agrees that it solves the problem LECG identified. If adopted as a solitary change in isolation from the rest of the MSS White Paper provisions, however, the totality would fall short of achieving the objectives of both the MSS parties and the LAP pricing provisions of the MRTU design, because it would prevent load-following MSS from participating in the large area IOU-LAP pricing. CAISO staff therefore agreed with the MSS parties that provisions for load-following under gross settlement are needed, and these are proposed as the next item.

2. Provisions for Load Following Under the Gross Settlement Option

There are two elements to these provisions.

(a) Ineligibility of load-following resources to set real-time prices. The load-following provisions require the MSS operator to identify to the CAISO which of its resources will be used for load following. Such resources may also submit supplemental energy bids to the CAISO real-time market in addition to being used by the MSS operator to follow load. Under the first element proposed here, if the load-following MSS elects gross settlement its load-following resources will not be eligible to set real-time prices when they are economically dispatched by the CAISO real-time market. Such resources will, however, be eligible to receive bid cost recovery to ensure that the price they are paid for CAISO-dispatched energy is not less than their accepted bid price. This change is needed because load-following MSS resources, even when they are providing energy in response to CAISO dispatch instructions, are ultimately being dispatched in real time by the MSS operator as part of its portfolio of load-following resources to meet the needs of the MSS. Thus even though these resources may also provide imbalance energy to the CAISO system, they are not necessarily generating at a level that is consistent with the optimal real-time dispatch of the CAISO system, and therefore should not be eligible to set real-time prices.

(b) Calculation of the Load Following Deviation Penalty (LFDP) for load-following MSS. Load-following MSS are subject to a LFDP which is distinct from but somewhat analogous to the CAISO's Uninstructed Deviation Penalty (UDP) that applies to non-MSS resources. Calculation of the LFDP for a load-following MSS is intended to discriminate between resource deviations that actually follow MSS load deviations or CAISO dispatch instructions versus those that do not, and to penalize the latter but not the former. In addition, MSS resources that are not designated as load-following resources should not be used for load following and therefore should be subject to the same UDP that applies to non-MSS resources. Based on these principles Management proposes the following provisions for calculating the LFDP.

For each settlement interval the LFDP will be calculated for the MSS Aggregation (MSSA) as scheduled by a single Scheduling Coordinator (SC).¹

- (i) Non-load-following resources of the MSS will be subject to the same resource-specific UDP provisions that apply to non-MSS supply resources under the CAISO tariff. Such resources will not be included in the calculation of the LFDP as described in the next paragraph.
- (ii) The LFDP is computed for all loads and load-following resources in the MSSA operated by the same SC based on the quantity $(G - L)$ for the MSSA, where G is the total MWh of energy produced by MSSA load-following resources adjusted for energy generated in compliance with CAISO accepted forward schedules and issued dispatch instructions, including adjustments for transmission losses based on pre-specified factors for each generator location, and L is the total MSSA metered load for the interval adjusted for accepted forward schedules. As long as $(G - L)$ is within a tolerance band in each interval, as provided in the November 2004 MSS White Paper, there will be no LFDP applied. If $(G - L)$ is positive and exceeds the tolerance band, representing excess generation, then payment for the excess energy will be rescinded in an amount equal to the quantity of energy above the tolerance band times the highest LMP paid to MSSA load-following generation in the interval. If $(G - L)$ is negative and exceeds the tolerance band, representing excess load relying on the CAISO markets and not served by the MSSA's load following, the UDP will equal two times the IOU-LAP price for the interval times the quantity of energy beyond the tolerance band. The LFDP will be applied in addition to the imbalance energy settlement for the full $(G - L)$ amount.

POSITIONS OF THE PARTIES

CAISO staff held several discussions with the MSS parties – specifically the Northern California Power Agency (NCPA) which is a MSSA for several constituent individual MSS, as well as some of NCPA's constituent MSS – during the period from September through December 2005. Based on the most recent of these discussions in late December, the MSS parties support the recommendations described herein. Moreover, these changes will benefit all CAISO participants, including the non-MSS parties, because they align the operating incentives for MSS resources with the CAISO real-time optimization.

MANAGEMENT RECOMMENDATION

In conclusion, Management proposes the following motion for adoption by the Board:

MOVED, that the Board adopts the changes to the MRTU Release 1 MSS provisions as specified in Management's January 17, 2006 memorandum.

¹ It is important to clarify that the term MSS refers to an individual, electrically contiguous subsystem of the CAISO grid. Current arrangements also provide for a MSS Aggregator (MSSA) to represent a specified non-contiguous group of individual MSS, to function as the SC to schedule for the group and be settled on an aggregate basis. Today the Northern California Power Agency (NCPA) is the MSSA for its MSS members. In the future, if new MSS form within the CAISO system who are not members of a larger MSSA, the provisions (ii) above would apply to each individual MSS as if it were a MSSA with only one member.