Blacklines
Local Market Power Mitigation and
Dynamic Competitive Path Assessment Tariff Language
California ISO Fifth Replacement Tariff

Note to stakeholders: This document includes changes relating only to the first phase of implementation slated for the Spring of 2012.

Yellow highlighting indicates incremental changes since July 15, 2011 posting
4.5.1.1 Procedure to become a Scheduling Coordinator

4.5.1.1.12 Generation Affiliate Disclosure Requirements
Each Scheduling Coordinator Applicant will notify the CAISO of any Affiliate that owns, controls, and/or schedules resources that may provide Energy or Ancillary Services in the CAISO Markets. The Scheduling Coordinator Applicant will provide the CAISO with information on each such Affiliate, including information concerning the corporate relationship of such Affiliate and the business purpose of such Affiliate. These requirements will continue to apply after a Scheduling Coordinator Applicant becomes a Scheduling Coordinator.

4.5.1.1.13 Resource Control Agreements
Each Scheduling Coordinator Applicant will register with the CAISO any resource it controls through a Resource Control Agreement to which the Scheduling Coordinator Applicant and/or any Affiliate that satisfies the criteria set forth in Section 4.5.1.1.12 is a party. This requirement will continue to apply after a Scheduling Coordinator Applicant becomes a Scheduling Coordinator. The applicable Business Practice Manual sets forth the procedures for registering a resource controlled through a Resource Control Agreement.

4.5.1.2 Scheduling Coordinator’s Ongoing Obligations After Certification

4.5.1.2.1 Scheduling Coordinator’s Obligation to Report Changes

4.5.1.2.1.1 Obligation to Report a Change in Filed Information
Each Scheduling Coordinator has an ongoing obligation to inform the CAISO of any changes to any of the information submitted by it to the CAISO as part of the application process, including, but not limited to, any changes to the additional information requested by the CAISO, any changes in its credit ratings, any changes regarding its Affiliates that satisfy the requirements of Section 4.5.1.1.12, and any changes regarding resources controlled through Resource Control Agreements that satisfy the requirements of Section 4.5.1.1.13. The applicable Business Practice Manual sets forth the procedures for changing the Scheduling Coordinator’s information and the timing of notifying the CAISO of such changes.
27. **CAISO Markets And Processes**

In the Day-Ahead and Real-Time time frames the CAISO operates a series of procedures and markets that together comprise the CAISO Markets Processes. In the Day-Ahead time frame, the CAISO conducts the Market Power Mitigation (MPM) process, the Integrated Forward Market (IFM) and the Residual Unit Commitment (RUC) process. In the Real-Time time frame, the CAISO conducts the Market Power Mitigation and Reliability Requirement Determination, the Hour-Ahead Scheduling Process (HASP), the Short-Term Unit Commitment (STUC), the Real-Time Unit Commitment (RTUC) and the five-minute Real-Time Dispatch (RTD). The CAISO Markets Processes utilize transmission and Security Constrained Unit Commitment and dispatch algorithms in conjunction with a Base Market Model adjusted as described in Sections 27.5.1 and 27.5.6 to optimally commit, schedule and Dispatch resources and determine marginal prices for Energy, Ancillary Services and RUC Capacity. Congestion Revenue Rights are available and entitle holders of such instruments to a stream of hourly payments or charges associated with revenue the CAISO collects or pays from the Marginal Cost of Congestion component of hourly Day-Ahead LMPs. Through the operation of the CAISO Markets Processes the CAISO develops Day-Ahead Schedules, Day-Ahead AS Awards and RUC Schedules, HASP Advisory Schedules, HASP Intertie Schedules and AS Awards, Real-Time AS Awards and Dispatch Instructions to ensure that sufficient supply resources are available in Real-Time to balance Supply and Demand and operate in accordance with Reliability Criteria.

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27.4.1 **Security Constrained Unit Commitment**

The CAISO uses SCUC to run the MPM-RRD processes associated with the DAM, the HASP, and the RTM. In the Day-Ahead time frame, SCUC is conducted over multiple varying intervals to commit and schedule resources as follows: (1) to meet Demand reflected in Bids submitted in the Day-Ahead Market and considered in the MPM process and IFM, and to procure AS in the IFM, and (2) to meet the CAISO Forecast of CAISO Demand in the RUC, HASP, STUC and RTUC, and in the MPM.
process utilized in the HASP and RTM, and in RRD, RUC, HASP, STUC and RTUC; and (3) to procure any incremental AS in the HASP and RTM. In the Day-Ahead MPM-RRD, IFM and RUC processes, the SCUC commits resources over the twenty-four (24) hourly intervals of the next Trading Day. In the RTUC, which runs every fifteen (15) minutes and commits resources for the RTM, the SCUC optimizes over a number of 15-minute intervals corresponding to the Trading Hours for which the Real-Time Markets have closed. The Trading Hours for which the Real-Time Markets have closed consist of (a) the Trading Hour in which the applicable run is conducted and (b) all the fifteen-minute intervals of the entire subsequent Trading Hour. In the HASP, which is a special run of the RTUC that runs once per hour, the SCUC schedules Non-Dynamic System Resources and exports for the applicable subsequent Trading Hour. In the STUC, which runs once an hour, the SCUC commits resources over the last fifteen (15) minutes of the imminent Trading Hour and the entire next four Trading Hours. The CAISO will commit Extremely Long Start Resources, for which commitment in the DAM does not provide sufficient time to Start-Up and be available to supply Energy during the next Trading Day as provided in Section 31.7.

31.2 **Day-Ahead MPM Process -RRD**

After the Market Close of the DAM, and after the CAISO has validated the Bids pursuant to Section 30.7, the CAISO will perform the MPM process-RRD, which is procedures in a single series of processing market runs that occurs prior to the IFM Market Clearing run. The Day-Ahead MPM process determines which Bids need to be mitigated in the IFM and when RMR Proxy Bids should be considered in the IFM for RMR Units. The RRD process is the automated process for determining RMR Generation requirements for RMR Units. The Day-Ahead MPM-RRD process optimizes resources using the same optimization used in the IFM, but instead of using Demand Bids as in the IFM the MPM-RRD process optimizes resources to meet one hundred percent of the CAISO Demand Forecast Demand reflected in Demand Bids, including and Export Bids and Virtual Demand Bids, and to procure to the extent the Export Bids are selected in the MPM-RRD process, and meet one hundred (100) percent of Ancillary Services requirements based on Supply Bids submitted to the DAM. Virtual Bids and Bids from Demand
Response Resources and Participating Load resources are considered excluded from the MPM-RRD process, but are not subject to Bid mitigation. Bids from Participating Load resources that are not subject to Bid mitigation will also be considered in the MPM process. Bids on behalf of Proxy Demand Resources are not mitigated and are not considered in the MPM-RRD process. Virtual Bids are excluded from the MPM-RRD process. The mitigated or unmitigated Bids and RMR Proxy Bids identified in the MPM-RRD process for all resources that cleared in the MPM-RRD are then passed to the IFM. The CAISO performs the MPM process for the DAM for the twenty-four (24) hours of the targeted Trading Day.

### 31.2.1 The Reliability And Market Power Mitigation Runs Process

The first run of the MPM-RRD procedures is the Competitive Constraints Run (CCR), in which only limits on transmission lines pre-designated as competitive are enforced. The only RMR Units considered in the CCR are Condition 1 RMR Units that have provided market Bids for the DAM and Condition 2 RMR Units when obligated to submit a Bid pursuant to an RMR Contract. The second run is the All Constraints Run (ACR), during which all Transmission Constraints that are expected to be enforced in the Integrated Forward Market are enforced. All RMR Units, Condition 1 and Condition 2, are considered in the ACR. The MPM process enforces all Transmission Constraints that are expected to be enforced in the relevant market and produces dispatch levels for all resources with submitted Bids and LMPs for all Locations. Bid mitigation is determined by decomposing the congested congestion component of each LMP determined in the MPM process into competitive congestion and non-competitive congestion components. The competitive congested congestion component of each LMP is calculated as the sum of the product of the shift factor times and the Shadow Price for all competitive Transmission Constraints and the non-competitive congested congestion component of each LMP is calculated as the sum of the product of the shift factor times and the Shadow Price for all non-competitive Transmission Constraints. The Reference Bus used in the MPM process will be either: (1) the Midway 500kV bus if Path 26 flow is from north to south; or (2) the Vincent 500kV bus if Path 26 flow is from south to north. The treatment of a particular Transmission Constraint as competitive or non-competitive for purposes of the MPM process is determined pursuant to Section 39.7.2.
31.2.2 **Bid Mitigation**

The CAISO shall compare the resource dispatch levels derived from CCR and ACR and will mitigate Bids as follows.

31.2.2.1 **Bid Mitigation for RMR Units**

For a Condition 1 RMR Unit that is dispatched in the CCR, the Bid used in the ACR for the entire portion of the unit’s Energy Bid Curve above the CCR dispatch level and below the Maximum Net Dependable Capacity specified in the RMR Contract will be set to the lower of the RMR Proxy Bid, or the DAM Bid, but not lower than the unit’s highest Bid price that cleared the CCR. If a Condition 1 RMR Unit is dispatched in the CCR and receives a greater dispatch in the ACR, the entire portion of the unit’s Energy Bid Curve above the CCR dispatch level and below the Maximum Net Dependable Capacity specified in the RMR Contract, will be set to the lower of the RMR Proxy Bid or the DAM Bid, but not lower than the unit’s highest Bid price that cleared the CCR for purposes of being considered in the IFM. For purposes of the MPM process-RRD, Condition 1 RMR Units will be treated like non-RMR Units with respect to any capacity in excess of the Maximum Net Dependable Capacity specified in the RMR Contract. For up to the Maximum Net Dependable Capacity specified in the RMR Contract for Condition 1 RMR Units, the portion of the market Bid at and below the CCR dispatch level Competitive LMP at the RMR Unit’s Location will be retained in the IFM. To the extent that the non-competitive Congestion component of an LMP calculated in the MPM process is greater than zero, and that MPM process dispatches a Condition 1 RMR Unit at a level such that some portion of its market Bid exceeds the Competitive LMP at the RMR Unit’s Location, those Bid prices above the Competitive LMP will be set to the higher of the RMR Proxy Bid or the Competitive LMP. If any Bid prices are set to the level of the RMR Proxy Bid through this process, any incremental dispatch of the resource based on the RMR Proxy Bid will be flagged as an RMR Dispatch in the Day-Ahead Schedule and the resource shall be considered to have received a Dispatch Notice pursuant to the RMR Contract. For Condition 2 RMR Units and for Condition 1 RMR Units that either did not submit DAM Bids or submitted DAM Bids but were not dispatched in the CCR, the CAISO will use the RMR Proxy Bid in the ACR to determine the Energy required from RMR Units for each Trading.
Hour. If the dispatch level produced through the ACR for a Condition 1 RMR Unit is not greater than the dispatch level produced through CCR, the unit’s original, unmitigated DAM Bid will be retained in its entirety. Condition 1 RMR Units that have not submitted Bids and Condition 2 RMR Units will not be considered in the MPM unless the CAISO issues a manual RMR Dispatch, in which case the dispatch level specified in the manual RMR Dispatch will be protected in the MPM. If a Condition 2 RMR Unit is issued a Manual RMR Dispatch by the CAISO, then RMR Proxy Bids for all of the unit’s Maximum Net Dependable Capacity under the RMR Contract will be considered in the MPM. Any incremental dispatch based on RMR Proxy Bids will be flagged as an RMR Dispatch in the Day-Ahead Schedule and the resource shall be considered to have received a Dispatch Notice pursuant to the RMR Contract. For a Condition 1 RMR Unit that has submitted Bids and has not been issued a Manual RMR Dispatch, to the extent that the non-competitive Congestion component of an LMP calculated in the MPM process is greater than zero, and that MPM process dispatches a Condition 1 RMR Unit at a level such that some portion of its market Bid exceeds the Competitive LMP at the RMR Unit’s Location, the resource will be flagged as an RMR dispatch in the Day-Ahead Schedule at a level higher than the dispatch level determined by the Competitive LMP. If the dispatch level of the single run is higher than the economic level using the competitive LMP, For a Condition 1 RMR Unit, if the dispatch level produced through the ACR is greater than the dispatch level produced through the CCR, and for a Condition 2 RMR Unit that is dispatched through the ACR, the resource will be flagged as an RMR Dispatch in the Day-Ahead Schedule and shall constitute a Dispatch Notice pursuant to the RMR Contract.

31.2.2.23 Bid Mitigation for Non-RMR Units

If the non-competitive Congestion component of an LMP calculated in an MPM process is greater than zero, if the dispatch level produced through the ACR is greater than the dispatch level produced through CCR, then the any resource at that Location that is dispatched in that MPM process is subject to Local Market Power Mitigation, in which case the entire portion of resources’ Bids on behalf of any such resource, to the extent that they exceed the Energy Bid Curve that is above the CCR dispatch level will be mitigated to the lower of the Default Energy
Bid as specified in Section 39, or the DAM Competitive LMP at the resource’s Location, will be mitigated to the higher of the resource’s Default Energy Bid, as specified in Section 39, or the Competitive LMP at the resource’s Location Bid, but no lower than the unit’s highest Bid price that cleared the CCR. To the extent a Multi-Stage Generating Resource is dispatched in the MPM process and the non-competitive Congestion component of the LMP calculated at the Multi-Stage Generating Resource’s Location is greater than zero’s MWh dispatch level produced in the All Constraints Run is greater than the MWhs dispatch level produced in the Competitive Constraints Run, for purposes of mitigation, all the MSG Configurations will be mitigated similarly and the CAISO will evaluate all submitted Energy Bids for all MSG Configurations based on the relevant Default Energy Bids for the applicable MSG Configuration. The CAISO will calculate the Default Energy Bids for Multi-Stage Generating Resources by submitted MSG Configuration. When the ACR dispatch level is higher than the CCR level, Any the market Bids at and below the equal to or less than the CCR dispatch Competitive LMP level will be retained in the IFM. If the dispatch level produced through the ACR is not greater than the dispatch level produced through the CCR, the unit’s original, unmitigated DAM Bid will be retained in its entirety.

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33. Hour-Ahead Scheduling Process (HASP)

The HASP is the hour-ahead process during the Real-Time which consists of the following activities. The HASP includes a special hourly run of the Real-Time Unit Commitment (RTUC), which is also one of the component processes of the RTM. The RTUC utilizes a SCUC optimization and runs every fifteen (15) minutes, as fully described in Section 34. This Section 33 describes the special features of the specific hourly HASP run of the RTUC. The HASP combines provisions for the CAISO to issue hourly pre-dispatch instructions to System Resources that submit Energy Bids to the RTM and for the procurement of Ancillary Services on an hourly basis from System Resources, with provisions for Scheduling Coordinators to self-schedule changes to their Day-Ahead Schedules as provided in Section 33.1, and submit Bids to export Energy at Scheduling Points. The HASP also performs the MPM-RRD procedure with respect to
the Bids that will be used in the HASP optimization and in the RTM processes for the same Trading Hour.

### 33.1 Submission Of Bids For The HASP And RTM

Scheduling Coordinators may submit Bids, including Self-Schedules, for Supply that will be used for the HASP and the RTM processes starting from the time Day-Ahead Schedules have been posted until seventy-five (75) minutes prior to each applicable Trading Hour in the Real-Time. This includes Self-Schedules by Participating Load that is modeled using the Pumped-Storage Hydro Unit. Scheduling Coordinators may not submit Bids, including Self-Schedules, for CAISO Demand in the HASP and RTM. Scheduling Coordinators may submit Bids, including Self-Schedules, for exports at Scheduling Points in the HASP and RTM. The rules for submitted Bids specified in Section 30 apply to Bids submitted to the HASP and RTM. After the Market Close of the HASP and the RTM the CAISO performs a validation process consistent with the provisions set forth in Section 30.7 and the following additional rules. The CAISO will generate a Self-Schedule to cover any RUC Award or Day-Ahead Schedule in the absence of any Self-Schedule or Economic Bid components, or to fill in any gaps between any Self-Schedule Bid and any Economic Bid components to cover a RUC Award or Day-Ahead Schedule. Bids submitted to the HASP and the RTM to supply Energy and Ancillary Services will be considered in the various HASP and RTM processes, including the MPM-RRD process, the HASP optimization, the STUC, the RTUC and the RTD.

### 33.2 The HASP Optimization

After the Market Close for the HASP and RTM for the relevant Trading Hour, the Bids have been validated and the MPM-RRD process has been performed, the HASP optimization determines feasible but non-binding HASP Advisory Schedules for Generating Units for each fifteen-minute interval of the Trading Hour, as well as binding hourly HASP Intertie Schedules and binding hourly HASP AS Awards from Non-Dynamic System Resources for that Trading Hour. The HASP may also commit resources whose Start-Up Times are within the immediately following Trading Hour. The HASP, like the other runs of the RTUC, utilizes the same SCUC optimization and Base Market Model adjusted as described in Sections 27.5.1 and 27.5.6 as the IFM, with the
Base Market Model adjusted as described in Sections 27.5.1 and 27.5.6 updated to reflect changes in system conditions as appropriate, to ensure that HASP Intertie Schedules are feasible. Instead of clearing against Demand Bids as in the IFM, the HASP clears Supply against the CAISO Forecast of CAISO Demand plus submitted Export Bids, to the extent the Export Bids are selected in the MPM-RRD process. The HASP optimization also factors in forecasted unscheduled flow at the Interties. The HASP optimization produces Settlement prices for hourly imports and exports to and from the CAISO Balancing Authority Area reflected in the HASP Intertie Schedule and for the HASP AS Awards for System Resources.

33.3 Treatment Of Self-Schedules In HASP

The HASP optimization clears Bids, including Self-Schedules, while preserving all priorities in this process consistent with Section 34.10. The HASP optimization does not adjust submitted Self-Schedules unless it is not possible to balance Supply and the CAISO Forecast of CAISO Demand plus Export Bids and manage Congestion using the available Economic Bids, in which case the HASP performs non-economic adjustments to Self-Schedules. The MWh quantities of Self-Schedules of Supply that clear in the HASP constitute a feasible Dispatch for the RTM at the time HASP is run, but the HASP results do not constitute a final Schedule for Generating Units because these resources may be adjusted non-economically in the RTD if necessary to manage Congestion and clear Supply and Demand. Self-Schedules submitted for Generating Units that clear in the HASP will be issued HASP Advisory Schedules. Scheduling Coordinators representing Participating Intermittent Resources whose output is being used to satisfy a resource adequacy requirement must submit Self-Schedules in HASP in accordance with the forecast provided by the independent forecast service provider. The submission of a change to an ETC Self-Schedule beyond the deadline specified in Section 16.9.1, that is permitted pursuant to the terms of the applicable ETC, shall not be deemed to be an unbalanced ETC Self-Schedule for the purposes of Settlement, consistent with the ETC and TOR Self-Schedule Settlement treatment described in Section 11.5.7.
After the Market Close of the HASP and RTM, after the CAISO has validated the Bids pursuant to section 30.7, and prior to running the HASP optimization, the CAISO conducts the MPM-RRD process, the results of which will be utilized in the HASP optimization and all RTM processes for the Trading Hour. Bids on behalf of the Proxy Demand Response Resources are not mitigated and are not considered in the MPM-RRD process but are not subject to Bid mitigation. The MPM-RRD process for the HASP and RTM produces results for each fifteen (15) minute interval of the Trading Hour and thus may produce up to four mitigated Bids for any given resource for the Trading Hour. The determination as to whether a Bid is mitigated in the HASP and RTM is made based on the non-competitive Congestion component of each LMP for each fifteen (15) minute interval of the applicable Trading Hour, using the methodology set forth in Sections 31.2.2 and 31.2.3 above. If a Bid is mitigated in any of the four fifteen (15) minute intervals comprising a Trading Hour during the MPM process for the HASP and RTM, then that Bid will be treated as mitigated for the entire Trading Hour for purposes of the HASP optimization and all RTM processes. A single mitigated Bid for the entire Trading Hour is calculated using the minimum Bid price of the four mitigated Bid curves at each Bid quantity level. The Bids are mitigated only for the Bid quantities that are above the minimum quantity cleared in the CCR across all four fifteen-minute intervals. For a Condition 1 RMR Unit, the use of RMR Proxy Bids is determined based on the non-competitive Congestion component of each LMP for each fifteen (15) minute interval of the applicable Trading Hour, using the methodology set forth in Section 31.2.2 above. If a Condition 2 RMR Unit is issued a Manual RMR Dispatch by the CAISO, then RMR Proxy Bids for all of the unit’s Maximum Net Dependable Capacity will be considered in the MPM process. For both RMR-Condition 1 and Condition 2 RMR Units, when mitigation is triggered, a single RMR Proxy Bid for the entire Trading Hour is calculated using the same methodology described above for non-RMR Units. For a Condition 1 RMR Unit that has submitted Bids and has not been issued a Manual RMR Dispatch, to the extent that the non-competitive Congestion component of an LMP calculated in the MPM process is greater than zero, and that MPM process dispatches a Condition 1 RMR Unit at a level such that some portion of its market
Bid exceeds the Competitive LMP at the RMR Unit’s Location, the resource will be flagged as an RMR dispatch if it is dispatched at a level higher than the dispatch level determined by the Competitive LMP. For a Condition 1 RMR Unit that has submitted Bids and has not been issued a Manual RMR Dispatch, the resource will be flagged as an RMR dispatch in the real-time market if the dispatch level of the single run is higher than the economic level using the competitive LMP. If the dispatch level produced through the ACR is greater than the dispatch level produced through the CCR, and for a Condition 2 RMR Unit that is dispatched through the ACR, the resource will be flagged as an RMR Dispatch in the RTM and shall constitute a Dispatch notice pursuant to the RMR Contract. Both RMR Condition 1 and Condition 2 RMR Units may be issued manual RMR dispatches at any time to address local reliability needs or to resolve non-competitive constraints.

34.1 Inputs To The Real-Time Market

The RTM utilizes results produced by the DAM and HASP for each Trading Hour of the Trading Day, including the combined commitments contained in the Day-Ahead Schedules, Day Ahead AS Awards, RUC Awards, HASP Intertie Schedules, HASP Self-Schedules, HASP Intertie AS Awards and the MPM-RRD that is run as part of the HASP to determine reliability needs and mitigated bids for each relevant Trading Hour. Virtual Bids and Virtual Awards are not used in the Real-Time Market. These results, plus the short-term Demand Forecast, Real-Time Energy Bids, Real-Time Ancillary Service Bids, updated Base Market Model adjusted as described in Sections 27.5.1 and 27.5.6, State Estimator output, resource outage and de-rate information constitute the inputs to the RTM processes. Bids submitted in HASP for all Generating Units and Participating Load shall be used in the Real-Time Market.

34.2 Real-Time Unit Commitment

The Real-Time Unit Commitment (RTUC) process uses SCUC and is run every fifteen (15) minutes to: (1) make commitment decisions for Fast Start and Short Start Units having Start-Up Times within the applicable time periods described below in this section, and (2) procure required additional Ancillary Services and calculate ASMP used for settling procured Ancillary Service
capacity for the next fifteen-minute Real-Time Ancillary Service interval. In any fifteen (15) minute RTUC interval that falls within a time period in which a Multi-Stage Generating Resource is transitioning from one MSG Configuration to another MSG Configuration, the CAISO: (1) will not award any incremental Ancillary Services; (2) will disqualify any Day-Ahead Ancillary Services Awards; (3) will disqualify Day-Ahead qualified Submissions to Self-Provide Ancillary Services Award, and (4) will disqualify Submissions to Self-Provide Ancillary Services in RTM. For Multi-Stage Generating Resources the RTUC will issue a binding Transition Instruction separately from the binding Start-Up or Shut Down instructions. The RTUC can also be run with the Contingency Flag activated, in which case the RTUC can commit Contingency Only Operating Reserves. If RTUC is run without the Contingency Flag activated, it cannot commit Contingency Only Operating Reserves. RTUC is run at the following time intervals: (1) at approximately 7.5 minutes prior to the next Trading Hour, in conjunction with the HASP run, for T-45 minutes to T+60 minutes; (2) at approximately 7.5 minutes into the current hour for T-30 minutes to T+60 minutes; (3) at approximately 22.5 minutes into the current hour for T-15 minutes to T+60 minutes; and (4) at approximately 37.5 minutes into the current hour for T to T+60 minutes where T is the beginning of the next Trade Hour. The HASP, described in Section 33, is a special RTUC run that is performed at approximately 7.5 minutes before each hour and has the additional responsibility of: (1) pre-dispatching Energy and awarding Ancillary Services for hourly dispatched System Resources for the Trading Hour that begins 67.5 minutes later, and (2) performing the necessary MPM-RRD for that Trading Hour. A Day-Ahead Schedule or RUC Schedule for an MSG Configuration that is later impacted by the resource’s derate or outages, will be reconsidered in the RTUC process taking into consideration the impacts of the derate or outage on the available MSG Configurations.

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39.7 Local Market Power Mitigation For Energy Bids [Note to stakeholders: This tariff provision will have a May 8, 2012 effective date.]

Local Market Power Mitigation is based on a periodic assessment and designation of Transmission Constraints as competitive or non-competitive pursuant to Section 39.7.2. Prior to
the effective date of this tariff provision. Such periodic assessments will be performed for use in
the DAM, HASP and the RTM, at a minimum on an annual basis and four (4) times per year and
potentially more frequently if needed due to changes in system conditions, network topology, or
market performance. Any changes in Transmission Constraints designations will be publicly
noticed prior to making the change. Upon determination that an ad hoc assessment is warranted,
the CAISO will notice Market Participants that such an assessment will be performed. As of the
effective date of this tariff provision, these procedures will only apply to assessments and
designations of Transmission Constraints as competitive or non-competitive used in the HASP
and RTM, while assessments and designations of Transmission Constraints as competitive or
non-competitive for the DAM will be made as part of each MPM run associated with the DAM.
The determination whether a unit is being dispatched to relieve Congestion on a competitive or
non-competitive Transmission Constraint is based on two preliminary market runs, that are is
performed prior to the actual pricing run of the market, and are, as described in Sections 31 and
33 for the DAM and RTM, respectively.

39.7.1.6 Default Energy Bids for RMR Units

The available capacity in excess of the Maximum Net Dependable Capacity (MNDC) specified in
the RMR Contract up to the maximum generation capacity (PMax) is subject to Local Market
Power Mitigation. The Scheduling Coordinator for the RMR Unit must rank order its preferences
between the Variable Cost Option, the LMP Option, and the Negotiated Rate Option, which shall
be the default rank order if no rank order is specified by the Scheduling Coordinator. These
preferences will be used to determine the Default Energy Bids for the capacity between the
MNDC and PMax. RMR Proxy Bids for RMR Units based on contractually specified costs are
used in lieu of Default Energy Bids for the contractual RMR Unit capacity between the minimum
generating capacity (PMin) and the MNDC. The CAISO or Independent Entity will concatenate
these two calculation methodologies (for calculating RMR Proxy Bids and Default Energy Bids for
RMR Units) and will adjust them for monotonicity without lowering any price on either curve to
create a single Energy Bid Curve to be used in the MPM-RRD processes as described in
Sections 31 and 33 for the DAM and RTM, respectively. RMR Units are not eligible to receive a Bid Adder pursuant to Section 39.8 for contractual RMR Unit capacity between PMin and MNDC.

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39.7.2 Competitive Path Designation [Note to stakeholders: This tariff provision will have a May 8, 2012 effective date.]

39.7.2.1 Timing of Assessments

The CAISO will complete the first assessment of competitiveness of Transmission Constraints prior to the effective date of this provision. Constraint designations resulting from the first assessment will be applied in the MPM-RRD mechanism on the day this CAISO Tariff becomes effective and will not be changed until a subsequent assessment has been performed. For the DAM, the CAISO will make assessments and designations of whether Transmission Constraints are competitive or non-competitive as part of each MPM run associated with the DAM. Only binding Transmission Constraints determined by the Day-Ahead MPM process will be assessed in the DAM.

For the HASP and RTM, the CAISO may perform additional competitive constraint assessments during the year if changes in transmission infrastructure, generation resources, or Load, in the CAISO Balancing Authority Area and adjacent Balancing Authority Areas suggest material changes in market conditions or if market outcomes are observed that are inconsistent with competitive market outcomes. The CAISO will calculate and post path designations for the HASP and RTM not less than once prior to the effective date of this tariff provision and not less than four (4) times each year thereafter to provide timely seasonal path designations.

39.7.2.2 Criteria

For the DAM, a Transmission Constraint will be competitive by default unless the CAISO designates the Transmission Constraint as non-competitive pursuant to this Section 39.7.2.2. For the HASP and RTM, a Transmission Constraint will be non-competitive by default unless the CAISO designates the Transmission Constraint as competitive pursuant to this Section 39.7.2.2.

(a) Transmission Constraints for the DAM – As part of the MPM process associated with the DAM, the CAISO will designate a Transmission Constraint for the DAM
as non-competitive when the fringe supply of counter-flow to the Transmission Constraint from all portfolios of suppliers that are not identified as potentially pivotal is less than the demand for counter-flow. For purposes of determining whether to designate a Transmission Constraint as non-competitive pursuant to this Section 39.7.2.2(a):

(i) Counter-flow to the Transmission Constraint means the delivery of Power from a resource to the system load distributed reference bus. If counter-flow to the Transmission Constraint is in the direction opposite to the market flow of Power to the Transmission Constraint, the counter-flow to the Transmission Constraint is calculated as shift factor multiplied by the resource’s scheduled Power. Otherwise, counter-flow to the Transmission Constraint is zero.

(ii) Fringe supply of counter-flow to the Transmission Constraint includes all available capacity from resources not controlled by the identified potentially pivotal suppliers and all Virtual Supply Awards not controlled by the identified potentially pivotal suppliers that provide counter-flow to the Transmission Constraint. Available capacity reflects the highest capacity of a resource’s Energy bid adjusted for Self-provided Ancillary Services and derates.

(iii) Demand for counter-flow to the Transmission Constraint means all internal dispatched Supply and Virtual Supply Awards that provide counter-flow to the Transmission Constraint.

(iv) Potentially pivotal suppliers mean the three (3) portfolios of net sellers that control the largest quantity of counter-flow supply to the Transmission Constraint.

(v) Portfolio means the effective available generation capacity under the control of the Scheduling Coordinator and/or Affiliate determined pursuant to Section 4.5.1.1.12 and all effective Virtual Supply Awards of
the Scheduling Coordinator and/or Affiliate. Effectiveness in supplying counter-flow is determined by scaling generation capacity and/or Virtual Supply Awards by the shift factor from that location to the Transmission Constraint being tested.

(vi) A portfolio of a net seller is any portfolio that is not a portfolio of a net buyer. A portfolio of a net buyer means a portfolio for which the average daily net value of Measured Demand minus Supply over a twelve (12) month period is positive. The average daily net value is determined for each portfolio by subtracting, for each Trading Day, Supply from Measured Demand and then averaging the daily value for all Trading Days over the twelve (12) month period. The CAISO will calculate whether portfolios are portfolios of net buyers in the third month of each calendar quarter and the calculations will go into effect at the start of the next calendar quarter. The twelve (12) month period used in this calculation will be the most recent twelve month (12) period for which data is available. The specific mathematical formula used to perform this calculation will be set forth in a Business Practice Manual.

(vii) In determining which Scheduling Coordinators and/or Affiliates control the resources in the three (3) identified portfolios, the CAISO will include resources and Virtual Supply Awards directly associated with all Scheduling Coordinator ID Codes associated with the Scheduling Coordinators and/or Affiliates, as well as all resources that the Scheduling Coordinators and/or Affiliates control pursuant to Resource Control Agreements registered with the CAISO as set forth Section 4.5.1.1.13. Resources identified pursuant to Resource Control Agreements will only be assigned to the portfolio of the Scheduling Coordinator that has control of the resource or whose Affiliate has control of the resource pursuant to the Resource Control Agreements.
Transmission Constraints for the HASP and RTM – A Transmission Constraint for the HASP or RTM will be deemed competitive if no three (3) unaffiliated suppliers are jointly pivotal in relieving congestion on that constraint. The determination of whether or not the pivotal supplier criteria for an individual Transmission Constraint for the HASP or RTM are violated will be assessed using the Feasibility Index described in Section 39.7.2.4. Assessment of competitiveness for the HASP or RTM will be performed assuming various system conditions potentially including but not limited to season, load, planned transmission and resource outages. If an individual Transmission Constraint for the HASP or RTM fails the pivotal supplier criteria under any of these system conditions, the Transmission Constraint will be deemed uncompetitive for the entire year under all system conditions until a subsequent assessment deems the Transmission Constraint competitive. In general, a constraint for the HASP or RTM may be an individual transmission line or a collection of lines that create a distinct Transmission Constraint. For purposes of the competitive assessment for the HASP or RTM, the set of Transmission Constraints that will be included in the FNM network model are those modeled along with IT transmission limit Constraints expected to be enforced in clearing the CAISO Markets.

39.7.2.3 Candidate Path Identification

The first assessment of competitive constraints will be determined prior to the effective date of this provision and will consider all interfaces to neighboring Balancing Authority Areas and all inter-zonal interfaces for zones that existed prior to the effective date of this provision to be competitive. The set of candidate constraints that will be evaluated for competitiveness in the initial assessment will be limited to intra-zonal constraints for zones that existed prior to the effective date of this provision, that were managed for Congestion in Real-Time in greater than five hundred (500) hours in the most recent twelve (12)-month period. The Congestion frequency threshold of five-hundred (500) hours for designation of competitive constraint candidates will be based on the combination of real-time intra-zonal congestion hours that pre-dated the effective
date of this provision, and congestion in IFM and Real Time markets after the effective date of
this provision for the twelve (12) months of historical data. Subsequent Assessment of
competitive Transmission constraints for the HASP or RTM will again consider all existing
interfaces to neighboring Balancing Authority Areas and all inter-zonal interfaces that predate the
effective date of this provision to be competitive, and will not such interfaces will be included in
the set of candidate Transmission constraints for assessment. The set of candidate
Transmission constraints for the HASP or RTM will be further reduced to those remaining
Transmission constraints that were congested or managed for Congestion in greater than five
hundred (500) hours in the prior twelve (12) months.

39.7.2.4 Feasibility Index

For the HASP or RTM, the CAISO will perform a pivotal supplier test on all suppliers in the
CAISO Balancing Authority Area for each path to be assessed using the Feasibility Index (FI).
Suppliers will be considered in two groups: those suppliers with the largest portfolios will be
considered in the preliminary simulations, and any additional suppliers who are likely to be pivotal
given the competitive designations from the preliminary simulations. The FI requires solving the
\textit{FN}\textsubscript{M} network model having removed all internal resources of a supplier and modifying the
candidate constraints of the \textit{FN}\textsubscript{M} network model such that the flow limits of the set of candidate
constraints can be exceeded with a penalty imposed for excess flow. The resulting solution to the
\textit{FN}\textsubscript{M} network model produces constraint flows that can be used to calculate the FI. The FI is
calculated for each constraint as the proportion of the Transmission constraint limit that is
exceeded to solve the \textit{FN}\textsubscript{M} without the specified supplier’s supply. FI values less than zero
indicate the supplier is pivotal in relieving Congestion on the specified Transmission constraint.
The process is repeated by removing the supply portfolio of two and three suppliers for paths with
non-negative FI. If any three suppliers are jointly pivotal in relieving Congestion on a candidate
path, as indicated by an FI value less than zero, the candidate path will be deemed
uncompetitive. Otherwise, the candidate path will be deemed competitive. The portfolio of each
supplier will be based on ownership information available to the CAISO, taking into account any
material transfer of sufficient length that the transfer of control could have persistent impact on
the relative shares of supply within the CAISO Balancing Authority Area. These transfers of control will be utilized in the assessment as provided to the CAISO by the supplier reflecting its triennial filing with FERC for market-based rate authority.

* * *

39.8.1 Bid Adder Eligibility Criteria

To receive a Bid Adder, a Generating Unit must: (i) have a Mitigation Frequency that is greater than eighty (80) percent (80%) in the previous twelve (12) months; and (ii) must not have a contract to be a Resource Adequacy Resource for its entire Net Qualifying Capacity, or be designated under the CPM for its entire Eligible Capacity, or be subject to an obligation to make capacity available under this CAISO Tariff. If a Generating Unit is designated under the CPM for a portion of its Eligible Capacity, the provisions of this section apply only to the portion of the capacity not designated. Scheduling Coordinators for Generating Units seeking to receive Bid Adders must further agree to be subject to the Frequently Mitigated Unit option for a Default Energy Bid. Run hours are those hours during which a Generating Unit has positive metered output. During the first twelve (12) months after the effective date of this Section, the Mitigation Frequency will be based on a rolling twelve (12)-month combination of RMR Dispatches and incremental Bids dispatched out of economic merit order to manage local Congestion from the period prior to the effective date of this Section, which will serve as a proxy for being subject to Local Market Power Mitigation, and a Generating Unit’s Local Market Power Mitigation frequency after the effective date of this Section. Generating Units that received RMR Dispatches and/or incremental Bids dispatched out of economic merit order to manage local Congestion in an hour prior to the effective date of this Section will have that hour counted as a mitigated hour in their Mitigation Frequency. After the first twelve (12) months from the effective date of this Section, the Mitigation Frequency will be based entirely on a Generating Unit being mitigated under the MPM-RRD procedures in Sections 31 and 33.

* * *
41.5.1 Day-Ahead And HASP RMR Dispatch

RMR Dispatches will be determined in accordance with the RMR Contract, the MPM -RRD process addressed in Sections 31 and 33, and through manual RMR Dispatch Notices to meet Applicable Reliability Criteria.

The CAISO will notify Scheduling Coordinators for RMR Units of the amount and time of Energy requirements from specific RMR Units in the Trading Day prior to or at the same time as the Day-Ahead Schedules and AS and RUC Awards are published, to the extent that the CAISO is aware of such requirements, through an RMR Dispatch Notice or flagged RMR Dispatch in the IFM Day-Ahead Schedule. The CAISO may also issue RMR Dispatch Notices after Market Close of the DAM and through Dispatch Instructions flagged as RMR Dispatches in the Real-Time Market.

The Energy to be delivered for each Trading Hour pursuant to the RMR Dispatch Notice an RMR Dispatch in the IFM or Real-Time shall be referred to as the RMR Energy. Scheduling Coordinators may submit Bids in the DAM or the HASP for RMR Units operating under Condition 1 of the RMR Contract in accordance with the bidding rules applicable to non-RMR Units. A Bid submitted in the DAM or the HASP for a Condition 1 RMR Unit shall be deemed to be a notice of intent to substitute a market transaction for the amount of MWh specified in each Bid for each Trading Hour pursuant to Section 5.2 of the RMR Contract. In the event the CAISO issues an RMR Dispatch Notice or an RMR Dispatch in the IFM or Real-Time Market for any Trading Hour, any MWh quantities cleared through the Competitive Constraints Run of the MPM-RRD shall be considered as a market transaction in accordance with the RMR Contract. RMR Units operating as Condition 2 RMR Units may not submit Bids until and unless the CAISO issues an RMR Dispatch Notice or issues an RMR Dispatch in the IFM, in which case a Condition 2 RMR Unit shall submit Bids in accordance with the RMR Contract in the next available market for the Trading Hours specified in the RMR Dispatch Notice or Day-Ahead Schedule.

* * *

[Note: The provisions in this draft tariff section have been moved to Section 4.5.1.12 and the Business Practice Manual.] XXXX SC Disclosure Requirements
All Scheduling Coordinators must identify as part of the registration process any Affiliate participating in the ISO Markets. Each Scheduling Coordinator must inform the CAISO 30 days prior to any change in Affiliate status. Each Scheduling Coordinator must register any resources it controls through tolling agreements at least 15 business days prior to the effective date of any such agreement and at least 30 days prior to the termination of the agreement.

* * *

Appendix A
Master Definitions Supplement
* * *

- All Constraints Run (ACR)
The second optimization run of the MPM-RRD process through which all Transmission Constraints that are expected to be enforced in the market-clearing processes (IFM, RUC, STUC, RTUC and RTD) are enforced.

* * *

- CAISO Markets Processes
The MPM-RRD, IFM, RUC, STUC, RTUC, and RTD. HASP is an hourly run of the RTUC.

* * *

- Competitive Constraints Run (CCR)
The first optimization run of the MPM-RRD process through which only pre-designated competitive constraints are enforced.

* * *

- Competitive LMP
An LMP calculated in the MPM process minus the eCongestion component relating to non-competitive Transmission Constraints, as calculated in accordance with Section 31.2.2.

* * *

- Demand Response Resource
A resource, including but not limited to a Proxy Demand Resource, providing Demand Response Services. Participating Load is not a Demand Response Resource within the meaning of this definition.
- **HASP Bid**

A Bid received in HASP that can be used in the MPM-RRD conducted in HASP, the RTUC, STUC, or the RTD.

- **Hour-Ahead Scheduling Process (HASP)**

The process conducted by the CAISO beginning at seventy-five minutes prior to the Trading Hour through which the CAISO conducts the following activities: 1) accepts Bids for Supply of Energy, including imports, exports and Ancillary Services imports to be supplied during the next Trading Hour that apply to the MPM-RRD, RTUC, STUC, and RTD; 2) conducts the MPM-RRD on the Bids that apply to the RTUC, STUC, and RTD; and 3) conducts the RTUC for the hourly pre-dispatch of Energy and Ancillary Services.

- **Integrated Forward Market (IFM)**

The pricing run conducted by the CAISO using SCUC in the Day-Ahead Market, after the MPM-RRD process, which includes Unit Commitment, Ancillary Service procurement, Congestion Management and Energy procurement based on Supply and Demand Bids.

- **Manual RMR Dispatch**

An RMR Dispatch Notice issued by the CAISO other than as a result of the MPM-RRD process.

- **MPM-RRD**

Market Power Mitigation - Reliability Requirement Determination

- **Resource Control Agreement**

An agreement that gives an entity bidding, scheduling, and/or operational control over a physical resource owned by or under contract to another entity, or otherwise directs the manner in which such a resource participates in the ISO markets.
B. **System Marginal Energy Cost Component of LMP**

The SMEC shall be the same for each location throughout the system. SMEC is the sensitivity of the power balance constraint at the optimal solution. The power balance constraint ensures that the physical law of conservation of Energy (the sum of Generation and imports equals the sum of Demand, including exports and Transmission Losses) is accounted for in the network solution. For the designated reference location the CAISO will utilize a distributed Load Reference Bus for which constituent PNodes are weighted using the Reference Bus distribution factors. The Load distributed Reference Bus distribution factors are based on the Load Distribution Factors at each PNode that represents cleared Load in the Integrated Forward Market or forecast Load for MPM-RRD, RUC, HASP and RTM. In the Integrated Forward Market, in the event that the market is not able to clear based on the use of a distributed load Reference Bus, the CAISO will use a distributed generation Reference Bus for which the constituent nodes and the weights are determined economically within the running of the Integrated Forward Market based on available economic bids. In the event that the CAISO employs a distributed generation Reference Bus, it will notify Market Participants of which Integrated Forward Market runs required the use of this backstop mechanism. A distributed Load Reference Bus will be used for MPM-RRD, RUC, HASP and RTM regardless of whether a distributed Generation Reference Bus were used in the corresponding Integrated Forward Market run. Once the Reference Bus is selected, the System Marginal Energy Cost is the cost of economically providing the next increment of Energy at the distributed Reference Bus, based on submitted Bids.