**Red-line for Variable Operations and Maintenance Tariff Revisions**

**All the tariff revisions shown below will become effective on January 1, 2022, except for the revisions noted below in Section 30.4.5.4.3.2 that will become effective on April 1, 2022**

**\* \* \* \* \***

**11.8.2.1 IFM Bid Cost Calculation**

For each Settlement Interval, the CAISO shall calculate IFM Bid Cost for each Bid Cost Recovery Eligible Resource as the algebraic sum of the IFM Start-Up Cost, IFM Transition Cost, IFM Minimum Load Cost, IFM Pump Shut-Down Cost, IFM Energy Bid Cost, IFM Pumping Cost, and IFM AS Bid Cost. For Multi-Stage Generating Resources, in addition to the specific IFM Bid Cost rules described in Section 11.8.2.1, the CAISO will apply the rules described in Section 11.8.1.3 to further determine the applicable MSG Configuration-based CAISO Market Start-Up Bid Cost, Transition Bid Cost, and Minimum Load Bid Cost in any given Settlement Interval. For Multi-Stage Generating Resources, the incremental IFM Start-Up Costs, IFM Minimum Load Costs, and IFM Transition Costs to provide Energy Scheduled in the Day-Ahead Schedule or awarded RUC or Ancillary Service capacity for an MSG Configuration other than the self-scheduled MSG Configuration are determined by the IFM rules specified in Section 31.3. For RMR Resources, the CAISO shall calculate the IFM Bid Cost as the algebraic sum of the IFM Start-Up Cost adjusted to remove Opportunity Costs, IFM Transition Cost adjusted to remove Opportunity Costs, IFM Minimum Load Costs adjusted to remove Opportunity Costs, IFM Energy Bid Cost adjusted to remove Opportunity Costs, and IFM AS Bid Cost. The CAISO will also adjust the IFM Bid Costs for RMR Resources, to remove any bid adder that includes costs that were recovered under the RMR Contract.

**\* \* \* \* \***

**11.8.2.1.2 IFM Minimum Load Cost**

The IFM Minimum Load Cost for the applicable Settlement Interval shall be the Minimum Load Bid Cost applicable to the Integrated Forward Market, divided by the number of Settlement Intervals in a Trading Hour subject to the rules described below.

(a) For each Settlement Interval, only the IFM Minimum Load Cost in a CAISO IFM Commitment Period is eligible for Bid Cost Recovery.

(b) The IFM Minimum Load Cost for any Settlement Interval is zero if: (1) the Settlement Interval is in an IFM Self Commitment Period for the Bid Cost Recovery Eligible Resource; or (2) the Bid Cost Recovery Eligible Resource is manually pre-dispatched under a Legacy RMR Contract prior to the Day-Ahead Market or the resource is flagged as an RMR Dispatch in the Day-Ahead Schedule for the applicable Settlement Interval.

(c) If the CAISO commits a Bid Cost Recovery Eligible Resource in the Day-Ahead and the resource receives a Day-Ahead Schedule and the CAISO subsequently de-commits the resource in the Real-Time Market, the IFM Minimum Load Costs are subject to the Real-Time Performance Metric for each case specified in Section 11.8.4.4. If the CAISO commits an RMR Resource in the Day-Ahead and the resource receives a Day-Ahead Schedule and the CAISO subsequently de-commits the resource in the Real-Time Market, the sum of IFM Minimum Load Costs, adjusted to remove Minimum Load Opportunity Costs and Variable Minimum Load Operations and Maintenance Adders, are subject to the Real-Time Performance Metric for each case specified in Section 11.8.4.4.

(d) If a Multi-Stage Generating Resource is committed by the CAISO and receives a Day-Ahead Schedule and subsequently is committed by the CAISO to a lower MSG Configuration where its Minimum Load capacity as registered in the Master File in the Real-Time Market is lower than the CAISO IFM Commitment Period MSG Configuration’s Minimum Load as registered in the Master File, the resource’s IFM Minimum Load Costs are subject to the Real-Time Performance Metric for each case specified in Section 11.8.4.4. If the CAISO commits an RMR Multi-Stage Generating Resource in the Day-Ahead and the resource receives a Day-Ahead Schedule and the CAISO subsequently de-commits the resource in the Real-Time Market, the sum of IFM Minimum Load Costs, adjusted to remove Minimum Load Opportunity Costs and Variable Minimum Load Operations and Maintenance Adders, are subject to the Real-Time Performance Metric for each case specified in Section 11.8.4.4.

(e) If the conditions in Sections 11.8.2.1.2 (c) and (d) do not apply, then the IFM Minimum Load Cost for any Settlement Interval is zero if the Bid Cost Recovery Eligible Resource is determined to be Off during the applicable Settlement Interval. For the purposes of determining IFM Minimum Load Cost, a Bid Cost Recovery Eligible Resource is assumed to be On if its metered Energy in a Settlement Interval is equal to or greater than the difference between its (i) Minimum Load as registered in the Master File, or if applicable, as modified pursuant to Section 9.3.3, and (ii) the Tolerance Band, and the Metered Energy is greater than zero (0) MWh. Otherwise, such resource is determined to be Off.

(f) For Multi-Stage Generating Resources, the commitment period is determined based on application of section 11.8.1.3. If application of section 11.8.1.3 dictates that the IFM is the Commitment Period, then the calculation of the IFM Minimum Load Costs will depend on whether the IFM committed MSG Configuration is determined to be On. If it is determined to be On, then, the IFM Minimum Load Costs will be based on the Minimum Load Bid Costs of the IFM committed MSG Configuration. For the purposes of determining IFM Minimum Load Cost for a Multi-Stage Generating Resource, a Bid Cost Recovery Eligible Resource is determined to be On if its metered Energy in a Settlement Interval is equal to or greater than the difference between its IFM MSG Configuration Minimum Load as registered in the Master File, or if applicable, as modified pursuant to Section 9.3.3, and the Tolerance Band, and the Metered Energy is greater than zero (0) MWh. Otherwise, such resource is determined to be Off.

(g) The IFM Minimum Load Costs calculation is subject to the Shut-Down State Variable and is disqualified as specified in Section 11.17.2.

**\* \* \* \* \***

**11.8.3.1 RUC Bid Cost Calculation**

For each Settlement Interval, the CAISO shall determine the RUC Bid Cost for a Bid Cost Recovery Eligible Resource as the algebraic sum of the RUC Start-Up Cost, RUC Transition Cost, RUC Minimum Load Cost, and RUC Availability Bid Cost. For Multi-Stage Generating Resources, in addition to the specific RUC Bid Cost rules described in Section 11.8.3.1, the rules described in Section 11.8.1.3 will be applied to further determine the applicable MSG Configuration-based CAISO Market Start-Up Bid Costs, Transition Bid Costs, and Minimum Load Bid Costs. For Multi-Stage Generating Resources, the incremental RUC Start-Up Costs, RUC Minimum Load Costs, and RUC Transition Costs to provide RUC awarded capacity for an MSG Configuration other than the self-scheduled MSG Configuration are determined by the RUC optimization rules in specified in Section 31.5. For each Settlement Interval, the CAISO shall determine the RUC Bid Cost for an RMR Resource as the algebraic sum of the RUC Start-Up Cost adjusted to remove Opportunity Costs and Variable Start-Up Operations and Maintenance Adders, and RUC Transition Cost adjusted to remove Opportunity Costs and Variable Start-Up Operations and Maintenance Adders.

**\* \* \* \* \***

**11.8.4.1 RTM Bid Cost Calculation**

For each Settlement Interval, the CAISO shall calculate RTM Bid Cost for each Bid Cost Recovery Eligible Resource, as the algebraic sum of the RTM Start-Up Cost, RTM Minimum Load Cost, RTM Transition Cost, RTM Pump Shut-Down Cost, RTM Energy Bid Cost, RTM Pumping Cost and RTM AS Bid Cost. For each Settlement Interval, the CAISO shall calculate RTM Bid Cost for each RMR Resource as the algebraic sum of the RTM Start-Up Cost adjusted to remove Opportunity Costs and Variable Start-Up Operations and Maintenance Adders, RTM Transition Costs adjusted to remove Opportunity Costs and Variable Start-Up Operations and Maintenance Adders, RTM Energy Bid Cost adjusted to remove Opportunity Costs and Variable Energy Operations and Maintenance Adders, and RTM AS Bid Cost. For Multi-Stage Generating Resources, in addition to the specific RTM Bid Cost rules described in Section 11.8.4.1, the rules described in Section 11.8.1.3 will be applied to further determine the applicable MSG Configuration-based CAISO Market Start-Up Bid Cost, Transition Bid Cost, and Minimum Load Bid Cost, in a given Settlement Interval. For Multi-Stage Generating Resources, the incremental RTM Start-Up Cost, RTM Minimum Load Cost, and RTM Transition Cost to provide RTM committed Energy or awarded Ancillary Services capacity for an MSG Configuration other than the self-scheduled MSG Configuration are determined by the RTM optimization rules in specified in Section 34.

**\* \* \* \* \***

**11.13.3 Daily Variable Cost Payment**

For each Trading Day, the CAISO shall calculate IFM Bid Cost Recovery Amount described in Section 11.8.2 and RTM Bid Cost Recovery Amount described in Section 11.8.4 for each RMR Resource while adjusting to remove Major Maintenance Cost and Opportunity Cost adders, calculated pursuant to Section 30.4.6, including any if the limits used to calculate the Opportunity Cost are established pursuant to Article 6 of the RMR Contract. The RMR Resource shall receive any Unrecovered Bid Cost Uplift Payment(s) as described in Section 11.8.5. The Daily Variable Cost Uplift Settlement is the sum of the IFM Unrecovered Bid Cost Uplift Payment as described in Section 11.8.5.1 and the RUC and RTM Unrecovered Bid Cost Uplift Payment as described in Section 11.8.5.2.

**\* \* \* \* \***

**30.4.5 Proxy Cost Methodology**

The CAISO will calculate Proxy Costs as described in this Section 30.4.5.

**30.4.5.1 Natural Gas-Fired Resources**

For each natural gas-fired resource, the CAISO will calculate a resource’s Proxy Costs based on the resource’s actual unit-specific performance parameters and applicable gas prices as described below.

(a) **Fuel Input.** The CAISO will calculate Proxy Costs using formulaic natural gas cost values adjusted for fuel-cost variation, based on the natural gas price calculated pursuant to Section 39.7.1.1.1.3, and consistent with the requirements specified below.

(b) **Proxy Start-Up Cost.** Proxy Start-Up Costs will also include:

(i) a Variable Start-Up Operations and Maintenance Adder as provided in Section 30.4.5.4;

(ii) a greenhouse gas cost adder for each resource located within the CAISO Balancing Authority Area or an EIM Entity Balancing Authority Area within California, and registered with the California Air Resources Board as having a greenhouse gas compliance obligation, which is calculated for each Start-Up as the product of the resource’s fuel requirement per Start-Up, the greenhouse gas emissions rate authorized by the California Air Resources Board, and the applicable Greenhouse Gas Allowance Price;

(iii) the rates for the Market Services Charge and System Operations Charge multiplied by the shortest Start-Up Time listed for the resource in the Master File, multiplied by the PMin of the resource as registered in the Master File, multiplied by 0.5; and

(iv) the cost of auxiliary power calculated using the unit-specific MWh quantity of auxiliary power used for Start-Up multiplied by a resource-specific electricity price.

(c) **Proxy Cost Minimum Load Costs.** Proxy Cost Minimum Load Costs will also include:

(i) a Variable Energy Operations and Maintenance Adder as provided in Section 30.4.5.4;

(ii) a Variable Minimum Load Operations and Maintenance Adder as provided in Section 30.4.5.4.

(iii) a greenhouse gas cost adder for each resource located within the CAISO Balancing Authority Area or an EIM Entity Balancing Authority Area within California, and registered with the California Air Resources Board as having a greenhouse gas compliance obligation, which is calculated for each run-hour as the product of the resource’s fuel requirement at Minimum Load as registered in the Master File, the greenhouse gas emissions rate authorized by the California Air Resources Board, and the applicable Greenhouse Gas Allowance Price;

(iv) the rates for the Market Services Charge and System Operations Charge multiplied by the PMin of the resource as registered in the Master File; and

(v) the Bid Segment Fee.

(d) **Proxy Transition Costs.** For each Multi-Stage Generating Resource under the Proxy Cost methodology, the CAISO will calculate the Proxy Transition Costs utilized for each feasible transition from a given MSG Configuration to a higher MSG Configuration based on the difference between the Proxy Start-Up Costs for the higher MSG Configuration, and the Proxy Start-Up Costs for the lower MSG Configuration, as those costs are determined in accordance with the Proxy Start-Up Cost calculation methodology set forth in Section 30.4.5. If the result of this calculation is negative for any transition between two MSG Configurations, then the associated Proxy Transition Cost shall be zero.

**30.4.5.2 Non-Natural Gas-Fired Resources**

For each non-natural gas-fired resource, the CAISO shall calculate the Proxy Start-Up Cost and Proxy Minimum Load Cost values under the Proxy Cost methodology as specified below.

(a) **Fuel Input.** The Scheduling Coordinator for the resource will provide the fuel or fuel-equivalent input costs, which the CAISO will maintain in the Master File, pursuant to Section 39.7.1.1.1.2.

(b) **Proxy Start-Up Costs.** Proxy Start-Up Costs will also include, if applicable:

(i) a Variable Start-Up Operations and Maintenance Adder as provided in Section 30.4.5.4;

(ii) greenhouse gas allowance costs for each resource located within the CAISO Balancing Authority Area or an EIM Entity Balancing Authority Area within California, and registered with the California Air Resources Board as having a greenhouse gas compliance obligation, as provided to the CAISO by the Scheduling Coordinator;

(iii) the rates for the Market Services Charge and System Operations Charge multiplied by the shortest Start-Up Time listed for the resource in the Master File, multiplied by the PMin of the resource as registered in the Master File, multiplied by 0.5.

(c) **Proxy Minimum Load Costs.** Proxy Minimum Load Costs will also include, if applicable:

(i) a Variable Energy Operation and Maintenance Adder as provided in Section 30.4.5.4;

(ii) a Variable Minimum Load Operations and Maintenance Adder as provided in Section 30.4.5.4;

(iii) greenhouse gas allowance costs for each resource located within the CAISO Balancing Authority Area or an EIM Entity Balancing Authority Area within California, and registered with the California Air Resources Board as having a greenhouse gas compliance obligation, as provided to the CAISO by the Scheduling Coordinator;

(iv) the rates for the Market Services Charge and System Operations Charge multiplied by the PMin of the resource as registered in the Master File; and

(v) the Bid Segment Fee.

(d) **Proxy Transition Costs.** For each Multi-Stage Generating Resource under the Proxy Cost methodology, the CAISO will calculate the Proxy Transition Costs utilized for each feasible transition from a given MSG Configuration to a higher MSG Configuration based on the difference between the Proxy Start-Up Costs for the higher MSG Configuration, and the Proxy Start-Up Costs for the lower MSG Configuration, as those costs are determined in accordance with the Proxy Start-Up Cost calculation methodology set forth in Section 30.4.5. If the result of this calculation is negative for any transition between two MSG Configurations, then the associated Proxy Transition Cost shall be zero.

**30.4.5.3 Multi-Stage Generating Resources**

**30.4.5.3.1 Application of Proxy Costs**

For Multi-Stage Generating Resources under the Proxy Cost methodology, the CAISO will apply the Proxy Cost methodology to all the MSG Configurations. The Proxy Costs for Multi-Stage Generating Resources will be calculated for each specific MSG Configuration, including for each MSG Configuration that cannot be directly started.

**30.4.5.3.2 Insufficient Information**

Notwithstanding the rules set forth in Sections 30.4.5.1 and 30.4.5.2, to the extent that a Scheduling Coordinator for a Multi-Stage Generating Resource, other than in its lowest configuration in which the Multi-Stage Generating Resource can be started, does not provide sufficient data for the CAISO to determine a component of the Proxy Start-Up Costs or Proxy Minimum Load Costs for a particular MSG Configuration, the CAISO will, if feasible, use the value for that component associated with the next-lowest MSG Configuration.

**30.4.5.4 Variable Operations and Maintenance Adders**

**30.4.5.4.1 Generally**

Each resource that satisfies the applicable fuel source and technology requirements set forth in Section 30.4.5.4.2 will receive the default Variable Operations and Maintenance Adders specified thereunder. The Scheduling Coordinator for any resource may choose to negotiate with the CAISO pursuant to Section 30.4.5.4.3 for negotiated Variable Operations and Maintenance Adders that supersede and replace or are in addition to any default Variable Operations and Maintenance Adders the resource may receive. Variable Operations and Maintenance Adders are subject to renegotiation pursuant to Section 30.4.5.4.4 and to informational filings pursuant to Section 30.4.5.4.5. Pursuant to Section 30.4.5.4.6, the CAISO will convert negotiated operations and maintenance values that were established for a resource prior to January 1, 2022 into corresponding negotiated Variable Operations and Maintenance Adders.

**30.4.5.4.2 Default Variable Operations and Maintenance Adders**

The default Variable Start-Up Operations and Maintenance Adder for a frame combustion turbine resource will equal $52.13 per start per MW multiplied by the PMax of the resource.

The default Variable Minimum Load Operations and Maintenance Adder will vary by fuel source or technology as follows: (1) for a natural gas-fired combined cycle resource, the adder will equal $1.74 per run-hour per MW multipled by the PMax of the resource or MSG Configuration of the resource; (2) for an aeroderivative combustion turbine resource, the adder will equal $4.38 per run-hour per MW multiplied by the PMax of the resource or MSG Configuration of the resource; and (3) for a hydroelectric resource, the adder will equal $0.65 per run-hour per MW multiplied by the PMax of the resource or MSG Configuration of the resource.

The default Variable Energy Operations and Maintenance Adder will vary by fuel source or technology as follows: (1) nuclear $1.08/MWh; (2) coal $2.69/MWh; (3) wind $0.28/MWh; (4) natural gas-fired combined cycle units $0.59/MWh; (5) steam units $0.33/MWh; (6) geothermal $1.16/MWh; (7) landfill gas $1.21/MWh; (8) frame combustion turbines $0.97/MWh; (9) aeroderivative combustion turbines $2.15/MWh; (10) reciprocating internal combustion engines $1.10/MWh; and (11) biomass $1.65/MWh.

Effective January 1, 2022, default adders established pursuant to this Section 30.4.5.4.2 will supersede and replace any then-existing default adders previously established for resources with the same fuel source or technology.

**30.4.5.4.3 Negotiated Variable Operations and Maintenance Adders**

**30.4.5.4.3.1 Principles**

The CAISO will negotiate resource-specific and MSG Configuration-specific Variable Operations and Maintenance Adders with a Scheduling Coordinator based on the following principles:

(a) Any operations costs proposed for inclusion in the Variable Operations and Maintenance Adders must be variable operations costs, meaning the costs of consumables and other costs that vary directly with electrical production (*i.e.*, Start-Up/Shut-Down, run-hours, or electricity output) of a resource. Variable operations costs exclude maintenance costs, auxiliary power costs, Greenhouse Gas Allowance Prices, fuel costs, grid management charges, Opportunity Costs,.and other excluded costs set forth in the Business Practice Manual.

(b) Any maintenance costs proposed for inclusion in the Variable Operations and Maintenance Adders must be variable maintenance costs, meaning the costs associated with the repair, overhaul, replacement, or inspection of a resource that meet the following conditions:

(i) The costs must vary with the electrical production (*i.e.*, Start-Up/Shut-Down, run-hours, or electricity output) of the resource.

(ii) The costs should reflect future maintenance costs that are expected to be incurred within the service life of a major component of plant or equipment.

(iii) The costs should be consistent with Good Utility Practice.

(iv) The costs should not effect a substantial betterment of the resource.

(v) If the item is a replacement, it cannot be a replacement of an existing major component of plant or equipment.

**30.4.5.4.3.2 CAISO Process**

Scheduling Coordinators may submit updated resource-specificand MSG Configuration-specific information for purposes of seeking a change to any negotiated Variable Operations and Maintenance Adder, no sooner than thirty (30) Business Days after a negotiated Variable Operations and Maintenance Adder has been determined. The CAISO or Independent Entity will evaluate the information provided by Scheduling Coordinators, and may require Scheduling Coordinators to provide additional information, to enable the CAISO or Independent Entity to determine reasonable negotiated Variable Operations and Maintenance Adders or to conduct audits of negotiated Variable Operations and Maintenance Adders.

Within fifteen (15) Business Days of receipt of the information or any requested additional information, the CAISO or Independent Entity will notify the Scheduling Coordinator in writing whether it has sufficient and accurate information to determine reasonable negotiated Variable Operations and Maintenance Adders to be included in the calculations for the Proxy Start-Up Cost, Proxy Minimum Load Cost, and/or Default Energy Bid under the Variable Cost Option. Within ten (10) days after providing written notification to the Scheduling Coordinator that the information is sufficient and accurate, the CAISO or Independent Entity will determine the reasonable negotiated Variable Operations and Maintenance Adders to be included in the Proxy Start-Up Costs, Proxy Minimum Load Costs, and/or Default Energy Bids under the Variable Cost Option, and will so inform the Scheduling Coordinator in writing.

In the event of a dispute regarding the sufficiency or accuracy of the information provided by the Scheduling Coordinator, the CAISO or Independent Entity and the Scheduling Coordinator will enter a period of good-faith negotiations that terminates sixty (60) days after the date the dispute began. If the CAISO or Independent Entity and the Scheduling Coordinator resolve the dispute during the 60-day negotiation period, within ten (10) days of such agreement, the CAISO or Independent Entity will determine the reasonable negotiated Variable Operations and Maintenance Adders and will provide the adders to the Scheduling Coordinator in writing. If the CAISO or Independent Entity and the Scheduling Coordinator fail to agree upon the sufficiency or accuracy of the information during the 60-day negotiation period, the Scheduling Coordinator has the right to petition FERC to resolve the dispute as to the sufficiency or accuracy of its information.

In the event of a dispute regarding the CAISO’s or Independent Entity’s determination of Variable Operations and Maintenance Adders, the CAISO or Independent Entity and the Scheduling Coordinator will enter a period of good-faith negotiations that terminates sixty (60) days after the date the dispute began. If the CAISO or Independent Entity and the Scheduling Coordinator resolve the dispute during the 60-day negotiation period, the agreed-upon negotiated Variable Operations and Maintenance Adders will be effective as of the first Business Day following the resolution date.

**30.4.5.4.3.3 FERC Process**

If the CAISO or Independent Entity and the Scheduling Coordinator fail to agree on the Variable Operations and Maintenance Adders for the Proxy Start-Up Costs, Proxy Minimum Load Costs, and/or Default Energy Bids under the Variable Cost Option following the 60-day negotiation period, the Scheduling Coordinator has the right to file proposed values and supporting information for the adders with FERC pursuant to Section 205 of the Federal Power Act.

**30.4.5.4.3.4 Interim Variable Operations and Maintenance Adders Pending Dispute Resolution**

In the event of a dispute regarding the reasonableness of the Variable Operations and Maintenance Adders determined by the CAISO or Independent Entity, but not a dispute regarding the sufficiency or accuracy of the information provided by the Scheduling Coordinator, the CAISO or Independent Entity will determine reasonable interim Variable Operations and Maintenance Adders until the adders are determined by agreement between the CAISO or Independent Entity and the Scheduling Coordinator or by FERC. Any subsequent agreement or FERC order determining the Variable Operations and Maintenance Adders will be reflected in an adjustment to the interim Variable Operations and Maintenance Adders in the next applicable Settlement Statement.

**30.4.5.4.4 Renegotiation of Variable Operations and Maintenance Adders**

The CAISO may require the renegotiation of any negotiated or interim Variable Operations and Maintenance Adders established pursuant to Section 30.4.5.4.3 that have become outdated, are possibly erroneous, or for which the Scheduling Coordinator has changed. In the renegotiation process, the CAIOS may review and propose modifications to such Variable Operations and Maintenance Adders, and may require the Scheduling Coordinator to provide updated information to support their continuation.

**30.4.5.4.5 Informational Filings**

The CAISO shall make an informational filing with FERC of any default Variable Operations and Maintenance Adders established pursuant to Section 30.4.5.4.2 and any negotiated or interim Variable Operations and Maintenance Adders established pursuant to Section 30.4.5.4.3, no later than seven (7) days after the end of the month for which the Variable Operations and Maintenance Adders were established.

**30.4.5.4.6 Conversion of Existing Negotiated Values**

Notwithstanding any other provision in this Section 30.4.5.4, effective January 1, 2022, the CAISO will convert any then-existing adder values for major maintenance expenses previously established for a resource pursuant to Section 30.4.5.4 (or any predecessor of that Section), and will convert any then-existing negotiated operations and maintenance values previously established for a resource pursuant to Section 39.7.1.1.2 (or any predecessor of that Section), into corresponding negotiated Variable Operations and Maintenance Adders with values equivalent to the previously established values. Each Scheduling Coordinator for a resource for which the CAISO performs such conversions will subsequently have the option to either: (1) retain the corresponding Variable Operations and Maintenance Adders for the resource; (2) negotiate changes to all of the corresponding Variable Operations and Maintenance Adders for the resource pursuant to Section 30.4.5.4.3; or (3) negotiate changes to some of the corresponding Variable Operations and Maintenance Adders for the resource pursuant to Section 30.4.5.4.3, and have the CAISO convert the balance of the corresponding Variable Operations and Maintenance Adders into default Variable Operations and Maintenance Adders pursuant to Section 30.4.5.4.2.

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**39.6.1.6 Maximum Start-Up Cost and Minimum Load Cost Registered Cost Values**

The maximum Start-Up Cost and Minimum Load Cost values registered in the Master File by Scheduling Coordinators for capacity of non-Multi-Stage Generating Resources that are eligible and elect to use the Registered Cost methodology in accordance with Section 30.4 cannot exceed the Minimum Load Cost Hard Cap and will be limited to one hundred fifty percent (150%) of the Projected Proxy Cost. The maximum Start-Up Cost and Minimum Load Cost values registered in the Master File by Scheduling Coordinators for capacity of Multi-Stage Generating Resources that are eligible and elect to use the Registered Cost methodology in accordance with Section 30.4 will be limited to one hundred fifty percent (150%) of the Projected Proxy Cost for each MSG Configuration of the resources. The Projected Proxy Cost for natural gas-fired resources will include a gas price component, a Variable Start-Up Operations and Maintenance Adder component and a Variable Minimum Load Operations and Maintenance Adder component, if available, a volumetric Grid Management Charge component, and, if eligible, a projected Greenhouse Gas Allowance Price component calculated as set forth in this Section 39.6.1.6. The Projected Proxy Cost for non-natural gas-fired resources will be based on costs provided to the CAISO pursuant to Section 30.4.5.2, a Variable Start-Up Operations and Maintenance Adder component and a Variable Minimum Load Operations and Maintenance Adder component, if available, a volumetric Grid Management Charge component, and, if eligible, a projected Greenhouse Gas Allowance Price component calculated as set forth in this Section 39.6.1.6.

**\* \* \* \* \***

**39.6.1.6.3 Variable Operations and Maintenance Adder Components**

The Variable Start-Up Operations and Maintenance Adder component and the Variable Minimum Load Operations and Maintenance Adder component are determined based on the process set forth in Section 30.4.5.4.

**\* \* \* \* \***

**39.7.1.1 Variable Cost Option**

For natural gas-fueled units, the Variable Cost Option will calculate the Default Energy Bid by adding incremental cost (comprised of incremental fuel cost plus a volumetric Grid Management Charge adder plus a greenhouse gas cost adder if applicable) with the Variable Energy Operation and Maintenance Adder, by multiplying the sum by the Default Energy Bid Multiplier, adding a Bid Adder if applicable for a Frequently Mitigated Unit, and adding Variable Energy Opportunity Costs, if any. For non-natural gas-fueled units, the Variable Cost Option will calculate the Default Energy Bid by summing incremental fuel or fuel-equivalent cost plus a volumetric Grid Management Charge plus a greenhouse gas cost adder if applicable, multiplying the sum by the Default Energy Bid Multiplier, adding a Bid Adder if applicable for a Frequently Mitigated Unit, and adding Variable Energy Opportunity Costs, if any. For any Default Energy Bids calculated under the Variable Cost Option that exceed $1,000 per MWh because of an approved Reference Level Change Request, any ten percent (10%) adder or Frequently Mitigated Unit adder shall not exceed $100 per MWh.

**\* \* \* \* \***

**39.7.1.1.2 [Not used]**

**\* \* \* \* \***

**39.7.1.3.2 Negotiated Values and Informational Filings**

**39.7.1.3.2.1 Renegotiation of Values**

The CAISO may require the renegotiation of any components including any Opportunity Costs negotiated pursuant to Section 30.4.6.3, any Default Energy Bids negotiated pursuant to this Section 39.7.1.3, or any temporary Default Energy Bids established pursuant to Section 39.7.1.5,that have become outdated, are possibly erroneous, or for which the Scheduling Coordinator has changed. In the renegotiation process, the CAISO may review and propose modifications to such values, and may require the Scheduling Coordinator to provide updated information to support continuation of such values.

**39.7.1.3.2.2 Informational Filings with FERC**

The CAISO shall make an informational filing with FERC of any Opportunity Costs calculated pursuant to Section 30.4.6.2 or negotiated pursuant to Section 30.4.6.3, any Default Energy Bids negotiated pursuant to this Section 39.7.1.3, or any temporary Default Energy Bids established pursuant to Section 39.7.1.5, no later than seven (7) days after the end of the month in which the Opportunity Cost or Default Energy Bid values were established.

**\* \* \* \* \***

**Appendix A**

**Master Definitions Supplement**

**\* \* \* \* \***

**Variable Cost -**

The cost associated with fuel cost and Variable Energy Operations and Maintenance Adders.

**Variable Cost Option -**

A method of calculation Default Energy Bids based on fuel costs and Variable Energy Operations and Maintenance Adders.

**Variable Energy Operations and Maintenance Adder -**

An adder to Minimum Load Costs and to Default Energy Bids calculated under the Variable Cost Option that is determined pursuant to Section 30.4.5.4.

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**Variable Minimum Load Operations and Maintenance Adder -**

An adder to Minimum Load Costs that is determined pursuant to Section 30.4.5.4.

**Variable Operations and Maintenance Adder -**

A Variable Start-Up Operations and Maintenance Adder, Variable Minimum Load Operations and Maintenance Adder, or Variable Energy Operations and Maintenance Adder.

**Variable Start-Up Operations and Maintenance Adder -**

An adder to Start-Up costs that is determined pursuant to Section 30.4.5.4.

**\* \* \* \* \***