



## Release Notes – Business Rules Version 10.2X Up to Fall 2019 Release for SIBR/BSAP/RC-BSAP

### Revision History

Date	Version	By	Description
7/22/2019	1.0	WT	Initial Draft for Fall 2019 set. CCDEBE/ESDER3



For the Release Notes version 1.0 this will be the Baseline Release and is referenced in the revision history as the Initial Draft.

For modifications and adjustments of the Business Rules(BR) for SIBR/BSAP/RC-BSAP that come after the Baseline Release the revision history will show an Incremental change with the new BR(vX.X.x). The incremental changes will be listed on top of the baseline.

The Baseline Release will identify all the Projects associated with the SIBR/BSAP/RC-BSAP Release and if there are any changes to the UI or API web services. Changes to the UI will be documented in the SIBR SC Users Guide, BSAP Users Guide, or the RC-BSAP Users Guide. Web services changes will be documented in the Technical Specifications and posting of the related artifacts on the application pages on our Developers site.

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## //////////////////////////////////// Baseline Release //////////////////////////////////////

This set of Release Notes covers the changes going forward from the Business Rules Version 10.1.2



## Fall 2019 Release Impacts

Business Rule changes within a release may force changes to the User Interfaces or Web Services depending on the requirement changes that are needed to support new or modified functionality within system applications. The following elements defined below give a quick overview of expected changes to the systems that interface with the Business Rules.

Application	Element	Change	Comment
<b>SIBR</b>	<i>SIBR UI</i>	<b>YES</b>	<b>ExAnte sub tab</b>
	<i>SIBR Web Services</i>	<b>YES</b>	<b>V5 Web Services (ExAnte added)</b>
	<i>SIBR Rules</i>	<b>YES</b>	<b>ExAnte/ESDER3</b>
<b>BSAP</b>	<i>BSAP UI</i>	<b>YES</b>	<b>Copy forward</b>
	<i>BSAP Web Services</i>	<b>YES</b>	<b>BalancingTestResults (Base Deviation and Market Type added to results)</b>
	<i>BSAP Rules</i>	<i>NO</i>	
<b>RC-BSAP</b>	<i>RC-BSAP UI</i>	<i>NO</i>	
	<i>RC-BSAP Web Services</i>	<i>NO</i>	
	<i>RC-BSAP Rules</i>	<i>NO</i>	

Please visit the relevant user documentation on the Release Planning page for the updates to the documents associated to a specific Release.

<http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx>

SIBR User Guide – UI changes will be documented in this document.

SIBR Interface Specifications - all web service (wsdl, xsd, xml) changes will be documented in this document.

<https://developer.caiso.com>



BSAP User Guide – UI changes will be documented in this document.

Base Schedule Interface Specification Web Services - all web service (wsdl, xsd, xml) changes will be documented in this document. <https://developer.caiso.com>

RC-BSAP User Guide – UI changes will be documented in this document.

RC Base Schedule Interface Specification Web Services - all web service (wsdl, xsd, xml) changes will be documented in this document. <https://developer.caiso.com>

### **Business Rules Fall 2019 Release Projects (included Independent Projects)**

The **Fall 2019 Release** rules capture changes associated with the following projects targeted for implementation near November 2019 timeframe.

ESDER3a (Energy Storage and Distributed Energy Resource)

Dispatch Options for ESDER resources (see rules for details), these will be indicated with **highlight** in comments with ESDER3a.

CCDEBE (Commitment Cost Default Energy Bid Enhancement)

Bidding flexibility reflecting costs and business needs to manage portfolio resources due to changing conditions (see rules for details).

<http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx> this set may also include updates to rule modifications not tied to a release.

The full set of the Business Rules promoted to Production can be seen under the SIBR user documentation under the Application Access/ in SIBR user documentation for all rules related to SIBR/BSAP/RC-BSAP.

<http://www.caiso.com/participate/Pages/ApplicationAccess/Default.aspx>

## Revision History for Rules: (10.2)

Version	Date	Changes	Reference
10.2	6/14/2019	Incorporated changes from v.10.1.1-2	
10.2	6/14/2019	Modified 21017 and 21018 to include Bid Components for ex-ante adjustment requests.	CCDEBE
10.2	6/14/2019	Modified 31327 to use the Energy Bid Soft Cap.	CCDEBE
10.2	6/14/2019	Modified 41119, 41120, 41126, 41127, 41204, 41205, 41211, 41212, and 41988 for handling Generating Resource ex-ante adjustment requests.	CCDEBE
10.2	6/14/2019	Modified 41318 to use Default Energy Bids for the generated/extended bid.	CCDEBE
10.2	6/14/2019	Deleted 21201 for previous changes to the Minimum Load Cost Bid Component.	CCDEBE
10.2	6/14/2019	Deleted 41319, 41320 and 41322 as part of using Default Energy Bids for the generated bid.	CCDEBE
10.2	6/14/2019	Added 10070-10072 to include initialization rules for Generating Resource ex-ante adjustment requests.	CCDEBE
10.2	6/14/2019	Added 10073 and 10074 to include initialization rules for the new energy bid cap	CCDEBE
10.2	6/14/2019	Added 21643-21654 to include content rules for Generating Resource ex-ante adjustment requests.	CCDEBE
10.2	6/14/2019	Added 31645-31649 and 31657-31666 to include validation rules for Generating Resource ex-ante adjustment requests.	CCDEBE
10.2	6/14/2019	Added 41131-41134, 41225-41228, 41351 and 41352 to include rules for validating and generating bid components.	CCDEBE
10.2	6/14/2019	Added 41325 and 42306 to include processing rules for the Generating Resource bid cap.	CCDEBE
10.2	6/14/2019	Added 41013, 41014, 41323, 41324, 41645-41650, and 41652-41658 to include processing rules for Generating Resource ex-ante adjustment requests.	CCDEBE
10.2	6/14/2019	Added 51022 to include final processing rules for broadcasting Default Energy Bids.	CCDEBE
10.2	6/14/2019	Added 61038-61041 to include special rules for refiring processing rules when gas prices change intra-day.	CCDEBE
10.2	6/14/2019	Activated and modified 31327, 31328 and 31329 to include rules for validating energy bids for PDR and RDRR resources.	<a href="#">ESDER 3</a>
10.2	6/14/2019	Added 31333 and 31334 to include rules for validating energy bids for PDR and RDRR resources.	<a href="#">ESDER 3</a>

## Revision of Terms for Fall 2019 Release:

Name	Acronym	Definition
Calculated Energy Bid		The Energy Bid that is the source of the Default Energy Bid, unless modified by the ex-ante adjustment process; calculated by upstream systems.
Calculated Energy Bid Origin		The means used to calculate the Calculated Energy Bid. Examples: Proxy, Negotiated, LMP, Manual Consult, RMR.
Current Gas Price Flag		A Yes/No flag indicating whether the Gas Price Index was compiled based on recent data or not.
Default Energy Bid		The Energy Bid used by SIBR for generating and extending bids.
Default Energy Bid Origin		The means used to calculate the Energy Bid used by SIBR for generating and extending bids. Examples: Proxy, Negotiated, LMP, Ex-Ante, Manual Consult, RMR.
Default Energy Bid Price		The default Energy Bid Price used for a Resource with no Energy Bid Component and no registered cost information.
Default Minimum Load Bid		An approximation of the actual MLC for a Generating Resource.
Default Minimum Load Bid Origin		The means used to calculate the Default Minimum Load Bid. Examples: Proxy, Registered, Ex-Ante.
Default Start-Up Bid Curve		An approximation of the actual SUC for a Generating Resource.
Default Start-Up Bid Curve Origin		The means used to calculate the Default Start-Up Bid Curve. Examples: Proxy, Registered, Ex-Ante.
Demand Response Net Benefit Test		A calculation of a threshold market clearing price for use in adjusting the settlement of Proxy Demand Resources. Used in SIBR as a bidding floor for various demand response resources.
Energy Bid Soft Cap		The maximum price allowed in a Generating Resource Energy Bid Component, without prior cost justification.
Fuel-Region-Specific Gas-Fired		A scalar used in determining the high validation limit for a Generating Resource Default Bid

Current Volatility Scalar		Adjustment Request; applies to gas-fired resources. Current value indicates the scalar used when the commodity price has been updated recently.
Fuel-Region-Specific Gas-Fired Non-Current Volatility Scalar		A scalar used in determining the high validation limit for a Generating Resource Default Bid Adjustment Request; applies to gas-fired resources. Non-current value indicates the scalar used when the commodity price has not been updated recently.
Fuel-Region-Specific Non-Gas-Fired Volatility Scalar		A scalar used in determining the high validation limit for a Generating Resource Default Bid Adjustment Request; applies to non-gas-fired resources.
Generating Resource Default Bid Adjustment		A request by an SC to submit cost-based bids for a Generating Resource that will be used in place of the cost-based bids calculated by the CAISO.
Generating Resource Default Energy Bid Adjustment Component		A Generating Resource Default Bid Adjustment Component for Energy.
Generating Resource Default Minimum Load Bid Adjustment Component		A Generating Resource Default Bid Adjustment Component for Minimum Load.
Generating Resource Default Start-Up Bid Adjustment Component		A Generating Resource Default Bid Adjustment Component for Start-Up.
Minimum Load Cap Denominator		The smallest minimum load value used in calculating a minimum load cost using the Energy Bid Ceiling.
Net Benefit Off-Peak Floor		The minimum acceptable price as determined by the monthly Demand Response Net Benefit Test for Off-Peak Trading Hours.
Net Benefit On-Peak Floor		The minimum acceptable price as determined by the monthly Demand Response Net Benefit Test for On-Peak Trading Hours.
Reasonableness Threshold Commodity Price Index		The commodity component of the natural gas price at a specific Location and period of time; Used for reasonableness threshold calculations.
Reasonableness Threshold Default Energy Bid		The maximum Default Energy Bid considered for a Generating Resource Default Energy Bid Adjustment Request.
Reasonableness Threshold Gas Price Index		The average natural gas price at a specific Location and period of time; Used for reasonableness threshold calculations.
Reasonableness Threshold Minimum Load Bid		The maximum Default Minimum Load Bid considered for a Generating Resource Default Minimum Load Bid Adjustment Request.
Reasonableness Threshold Non-Commodity Price Index		The components of the natural gas price excluding the commodity price, at a specific Location and period of time; used for reasonableness threshold calculations.
Reasonableness Threshold Start-Up Bid Curve		The maximum Default Start-Up Bid Curve considered for a Generating Resource Default Start-Up Bid Adjustment Request.
Resource-Specific Volatility Current Scalar		A resource-specific modifying scalar used when the calculated gas price reflects recent data.
Resource-Specific Volatility Non-		A resource-specific modifying scalar used when the calculated gas price reflects older data.



## **Business Rules Impacted – Fall 2019 Release:**

Rule changes for the Version 10.2x are located below. Modified Text in red, new rules will be all red. Comments section will contain highlight for ESDER3a.





**SIBR Business Rules 10.2 are as follows:**

Modified rules:

Market	Business Rule ID	Description	Comments
DAM	21017	<p>A Generating Resource Bid may include the following: 1) at most one Start-Up Bid Component for each registered Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid; 2) at most one Minimum Load Cost Bid Component for each registered Online Generating Resource State; 3) at most one Energy Bid Component for each registered Online Generating Resource State and each Trading Hour in that Bid Period; 4) at most one Self-Schedule Bid Component for each Trading Hour in that Bid Period; 5) at most one Ancillary Service Bid Component for each registered Online Generating Resource State and each Trading Hour in that Bid Period; 6) at most one Ramp Rate Bid Component for each registered Online Generating Resource State; 7) at most one Energy Limit Bid Component; 8) at most one Distribution Bid Component for each Trading Hour in that Bid Period; 9) at most one RUC Bid Component for each registered Online Generating Resource State and each Trading Hour in that Bid Period; 10) at most one Wheeling Bid Component for each Trading Hour in that Bid Period, if and only if that Generating Resource is registered as an Inter-Tie Generating Resource for that Bid Period; 11) at most one Pumping Bid Component for each Trading Hour in that Bid Period, if and only if that Generating Resource is registered as a Pumped Storage Hydro Unit or a Pump for that Bid Period; 12) at most one State Transition Bid Component, if and only if that Generating Resource is registered as a MSG for that Bid Period; 13) at most one Miscellaneous Bid Component for each Trading Hour in that Bid Period; 14) at most one Contingency Dispatch Indicator; 15) at most one Default Start-Up Bid Adjustment Component for each registered Online Generating Resource State, if and only if that Generating Resource is not registered with a Start-Up Cost Basis of "Registered Cost" for that Bid Period; 16) at most one Default Minimum Load Bid Adjustment Component for each registered Online Generating Resource State, if and only if that Generating Resource is not registered with a Minimum Load Cost Basis of "Registered Cost" for that Bid Period; and 17) at most one Default Energy Bid Adjustment Component for each registered Online Generating Resource State and each Trading Hour in that Bid Period, if and only if the Calculated Energy Bid Origin for that Online Generating Resource State of that Generating Resource and Trading Hour is not set to "Hydro".</p>	<p>MFR: Pseudo-Tie registry for Generating Resources. MSG registry for Generating Resources; MSG must not be COG, Pump, LFR, or Pseudo-Tie.            ECIC: Calculated Energy Bid Origin for every Generating Resource.</p>



RTM	21018	<p>A Generating Resource Bid may include the following: 1) at most one Start-Up Bid Component for each registered Online Generating Resource State of the Generating Resource specified in that Bid; 2) at most one Minimum Load Cost Bid Component for each registered Online Generating Resource State; 3) at most one Energy Bid Component for each registered Online Generating Resource State; 4) at most one Self-Schedule Bid Component for each registered Online Generating Resource State; 5) at most one Ancillary Service Bid Component for each registered Online Generating Resource State; 6) at most one Ramp Rate Bid Component for each registered Online Generating Resource State; 7) at most one Distribution Bid Component; 8) at most one Wheeling Bid Component, if and only if the Generating Resource specified in the Bid is registered as an Inter-Tie Generating Resource for the Trading Hour specified in that Bid; 9) at most one Pumping Bid Component, if and only if the Generating Resource specified in the Bid is registered as a Pump Storage Hydro or a Pump for that Trading Hour; 10) at most one State Transition Bid Component, if and only if the Generating Resource specified in the Bid is registered as a MSG for that Trading Hour; 11) at most one Miscellaneous Bid Component; 12) at most one Greenhouse Gas Bid Component, if and only if that Generating Resource is registered as an EIM Resource with GHG Flag "N" for that Trading Hour; 13) at most one Default Start-Up Bid Adjustment Component for each registered Online Generating Resource State, if and only if that Generating Resource is not registered with a Start-Up Cost Basis of "Registered Cost" for that Trading Hour; 14) at most one Default Minimum Load Bid Adjustment Component for each registered Online Generating Resource State, if and only if that Generating Resource is not registered with a Minimum Load Cost Basis of "Registered Cost" for that Trading Hour; and 15) at most one Default Energy Bid Adjustment Component for each registered Online Generating Resource State, if and only if the Calculated Energy Bid Origin for that Online Generating Resource State of that Generating Resource and Trading Hour is not set to "Hydro".</p>	<p>MFR: GHG Flag registration for Resources.          ECIC: Calculated Energy Bid Origin for every Generating Resource.</p>
DAM	31328	<p>All Energy Bid Prices of the Energy Bid Curve specified in a Generating Resource Energy Bid Component must not be less than the <b>Net Benefit On-Peak Floor for that Trading Period</b>, if that Generating Resource is registered as a RDRR or PDR for that Trading Period, and the Trading Period is an On-Peak Trading Hour.</p>	<p>RDRR and PDR only. On-Peak.          RLC: <b>Net Benefit On-Peak Floor</b>. <b>ESDER3a</b></p>
DAM	31329	<p>All Energy Bid Prices of the Energy Bid Curve specified in a Generating Resource Energy Bid Component must not be less than the <b>Net Benefit Off-Peak Floor for that Trading Period</b>, if that Generating Resource is registered as a RDRR or PDR for that Trading Period, and the Trading Period is an Off-Peak Trading Hour.</p>	<p>RDRR and PDR only. Off-Peak.          RLC: <b>NET Benefit Off-Peak Floor</b>. <b>ESDER3a</b></p>

RTM	31327	All Energy Bid Prices of the Energy Bid Curve specified in an Energy Bid Component for a Generating Resource and a Trading Hour in a Generating Resource Bid must not be less than the product of the Relative RDRR Energy Bid Floor and the Energy Bid <b>Soft Cap</b> , if that Generating Resource is registered as a RDRR for that Trading Hour.	RDRR only. <b>ESDER3a</b>
ALL	41126	The Start-Up Cost Bid Curve specified in the Start-Up Bid Component for an Online Generating Resource State of a Generating Resource Bid must be replaced by the <b>Default Start-Up Bid Curve</b> for that Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid, if that Generating Resource is registered with a Start-Up Cost Basis of "Registered Cost" for that Bid Period. If the External Bid Status is not set to "M" (Modified) or "CM" (Conditionally Modified), set the External Bid Status to "MI" (Valid).	MFR: Start-Up Cost Curve registry by online state for Generating Resources registered with a Start-Up Cost Basis of "Registered Cost".
ALL	41119	The Start-Up Cost Bid Curve specified in the generated Start-Up Bid Component for an Online Generating Resource State in a Generating Resource Bid must be the <b>Default Start-Up Bid Curve</b> for that Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid, if that Generating Resource is registered with a Start-Up Cost Basis of "Registered Cost" for that Bid Period. If the External Bid Status is not set to "M" (Modified) or "CM" (Conditionally Modified), set the External Bid Status to "MI" (Valid).	
ALL	41127	If a Start-Up Cost in the Start-Up Cost Bid Curve specified in a Start-Up Bid Component for an Online Generating Resource State in a Generating Resource Bid is greater than the corresponding Start-Up Cost of the <b>Default Start-Up Bid Curve</b> for that Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid, <del>multiplied by the Relative Proxy Start-Up Cost Ceiling, plus the Start-Up Opportunity Cost for that Online Generating Resource State,</del> that Start-Up Cost in that Start-Up Cost Bid Curve must be replaced by the corresponding Start-Up Cost of that <b>Default Start-Up Bid Curve, multiplied by the Relative Proxy Start-Up Cost Ceiling, plus that Start-Up Opportunity Cost,</b> if that Generating Resource is registered with a Start-Up Cost Basis of "Proxy Cost" for that Bid Period.	ECIC: Start-Up Opportunity Cost for each startable Online Generating Resource State of each Generating Resource; zero if not applicable.

ALL	41120	The Start-Up Cost Bid Curve specified in the generated Start-Up Bid Component for an Online Generating Resource State in a Generating Resource Bid must be the <b>difference between the Default Start-Up Bid Curve for that Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid and the Start-Up Opportunity Cost for that Online Generating Resource State of that Generating Resource and Bid Period, and then divided by the Relative Proxy Start-Up Cost Ceiling</b> , plus the Start-Up Opportunity Cost for that Online Generating Resource State of that Generating Resource and Bid Period, if that Generating Resource is registered with a Start-Up Cost Basis of "Proxy Cost" for that Bid Period. If the External Bid Status is not set to "M" (Modified) or "CM" (Conditionally Modified), set the External Bid Status to "MI" (Valid).	
ALL	41211	The Minimum Load Cost specified in the Minimum Load Cost Bid Component for an Online Generating Resource State in a Generating Resource Bid must be replaced by the <b>Default Minimum Load Bid</b> for that Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid, if that Generating Resource is registered with a Minimum Load Cost Basis of "Registered Cost" for that Bid Period. If the External Bid Status is not set to "M" (Modified) or "CM" (Conditionally Modified), set the External Bid Status to "MI" (Valid).	MFR: Minimum Load Cost registry by online state for Generating Resources registered with a Minimum Load Cost Basis of "Registered Cost".
ALL	41204	The Minimum Load Cost specified in the generated Minimum Load Cost Bid Component for an Online Generating Resource State in a Generating Resource Bid must be the <b>Default Minimum Load Bid</b> for that Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid, if that Generating Resource is registered with a Minimum Load Cost Basis of "Registered Cost" for that Bid Period. If the External Bid Status is not set to "M" (Modified) or "CM" (Conditionally Modified), set the External Bid Status to "MI" (Valid).	
ALL	41212	If the Minimum Load Cost specified in the Minimum Load Cost Bid Component for an Online Generating Resource State in a Generating Resource Bid is greater than the <b>Default Minimum Load Bid</b> for that Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid, <del>multiplied by the Relative Proxy Minimum Load Cost Ceiling, plus the Minimum Load Opportunity Cost for that Online Generating Resource State,</del> that Minimum Load Cost must be replaced by that Default Minimum Load Bid, if that Generating Resource is registered with a Minimum Load Cost Basis of "Proxy Cost" for that Bid Period.	ECIC: Minimum Load Opportunity Cost for each Online Generating Resource State of each Generating Resource; zero if not applicable.

ALL	41205	<p>The Minimum Load Cost specified in the generated Minimum Load Cost Bid Component for an Online Generating Resource State of a Generating Resource Bid must be <del>the difference between the Default Minimum Load Bid for that Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid and the Minimum Load Opportunity Cost for that Online Generating Resource State of that Generating Resource and Bid Period, and then divided by the Relative Proxy Minimum Load Cost Ceiling, plus the Minimum Load Opportunity Cost for that Online Generating Resource State of that Generating Resource and Bid Period, if that Generating Resource is registered with a Minimum Load Cost Basis of "Proxy Cost" for that Bid Period.</del></p> <p>If the External Bid Status is not set to "M" (Modified) or "CM" (Conditionally Modified), set the External Bid Status to "MI" (Valid).</p>	
ALL	41318	<p>The Energy Bid Curve of a generated Energy Bid Component, or the Energy Bid Curve extension of an Energy Bid Component, for a Trading Hour and an Online Generating Resource State in a Generating Resource Bid for a Generating Resource that is not registered as a COG for that Trading Hour, must be the <del>Default Energy Bid for that Trading Hour and Online Generating Resource State of that Generating Resource. calculated as the lower of a) the sum of i) the Incremental Fuel Cost Curve, ii) the registered Operation and Maintenance Cost (\$/MWh), iii) the registered Greenhouse Gas Energy Cost Allowance Curve, iv) the Grid Management Charge Energy Cost Rate, and v) the Energy Opportunity Cost, for that Online Generating Resource State of that Generating Resource and Trading Hour, or b) the Energy Price Ceiling.</del></p>	
ALL	41988	<p>The Proxy State Transition Cost for a State Transition Definition of a Generating Resource must be calculated as the positive difference between 1) <del>the highest Start-Up Cost in the Default Start-Up Bid Curve of the Final Online Generating Resource State in that State Transition Definition minus the Start-Up Opportunity Cost for that Final Online Generating Resource State, divided by the Relative Proxy Start-Up Cost Ceiling and 2) the highest Start-Up Cost in the Default Start-Up Bid Curve of the Initial Online Generating Resource State in that State Transition Definition minus the Start-Up Opportunity Cost for that Initial Online Generating Resource State, divided by the Relative Proxy Start-Up Cost Ceiling, if that State Transition Definition is registered as an Upward State Transition and that Generating Resource is registered as a MSG with a Start-Up Cost Basis of "Proxy Cost" for that Bid Period.</del></p>	<p>MSG only. MFR: Upward/Downward attribute for each State Transition Definition of MSG. NOTE: The Proxy Start-Up Cost Curve must be calculated by 41129 for all MSG configurations (startable or not) irrespective of whether there is a Start-Up Bid Component in that configuration.</p>

Deleted Rules:

Market	Business Rule ID	Description	Comments
DEL	10044	The configurable Net Benefit On-Peak Floor must be initialized to -\$9999/MWh.	Obtained from RLC. <a href="#">ESDER3a</a>
DEL	10045	The configurable Net Benefit Off-Peak Floor must be initialized to -\$9999/MWh.	Obtained from RLC. <a href="#">ESDER3a</a>
DEL	21201	The Generating Resource Minimum Load Cost Bid Component must be considered applicable to the Trading Day that includes the Bid Period specified in the Bid.	The Generating Resource Minimum Load Cost Bid Component is a daily bid for each online state.
DEL	41319	The Incremental Fuel Cost Curve used to derive the Energy Bid Curve of a generated Energy Bid Component, or the Energy Bid Curve extension of an Energy Bid Component, for a Trading Hour and an Online Generating Resource State in a Generating Resource Bid, must be calculated as the product of the Incremental Heat Rate Curve of the Generating Resource specified in that Bid for that Online Generating Resource State and Trading Hour, and the registered Gas Price Index (\$/MMBtu) for that Generating Resource and Trading Hour, if that Generating Resource is registered as a Natural Gas Resource for that Trading Hour. The Incremental Heat Rate Curve must be a staircase curve of Incremental Heat Rate (Btu/kWh) versus Operating Level (MW). The Incremental Heat Rate of the Incremental Heat Rate Curve segment between two Operating Levels must be calculated as the ratio of the difference between the product of the registered Average Heat Rate at the higher Operating Level times that Operating Level, minus the product of the registered Average Heat Rate at the lower Operating Level times that Operating Level, over the difference between the higher Operating Level and the lower Operating Level.	

DEL	41320	The Incremental Fuel Cost Curve used to derive the Energy Bid Curve of a generated Energy Bid Component, or the Energy Bid Curve extension of an Energy Bid Component, for a Trading Hour and an Online Generating Resource State in a Generating Resource Bid, must be calculated from the registered Average Fuel Costs (\$/kWh) of the Generating Resource specified in that Bid for that Online Generating Resource State and Trading Hour, if that Generating Resource is not registered as a Natural Gas Resource for that Trading Hour. The Incremental Fuel Cost Curve must be a staircase curve of Incremental Fuel Cost (\$/kWh) versus Operating Level (MW). The Incremental Fuel Cost of the Incremental Fuel Cost Curve segment between two Operating Levels must be calculated as the ratio of the difference between the product of the registered Average Fuel Cost at the higher Operating Level times that Operating Level, minus the product of the registered Average Fuel Cost at the lower Operating Level times that Operating Level, over the difference between the higher Operating Level and the lower Operating Level.	
DEL	41322	The Energy Bid Curve of a generated Energy Bid Component for an Online Generating Resource State of a Generating Resource and Trading Hour in a Generating Resource Bid must be a single segment set equal to the Energy Bid Soft Cap, if that Generating Resource is not registered as a Natural Gas Resource for that Trading Hour, and a registered Average Fuel Cost (\$/kWh) does not exist for the Generating Resource specified in that Bid for that Online Generating Resource State and Trading Hour.	ODCP: proxy cost when data for constructing a generated bid does not otherwise exist.

#### Added Rules:

Market	Business Rule ID	Description	Comments
ALL	10074	The configurable Energy Bid Soft Cap must be initialized to \$1000/MWh.	
ALL	10070	The configurable Fuel-Region-Specific Gas-Fired Current Volatility Scalar must be initialized to 1.1.	
ALL	10071	The configurable Fuel-Region-Specific Gas-Fired Non-Current Volatility Scalar must be initialized to 1.25.	
ALL	10072	The configurable Fuel-Region-Specific Non-Gas Volatility Scalar must be set to 1.1.	
ALL	10073	The configurable Minimum Load Cap Denominator must be initialized to 1 MW.	

ALL	21643	The Generating Resource Default Start-Up Bid Adjustment Component must be associated with an Online Generating Resource State.	The Generating Resource Default Start-Up Bid Adjustment Component is a daily bid for each online state.
RTM	21644	The Generating Resource Default Start-Up Bid Adjustment Component must be considered applicable to the Trading Day that includes the Bid Period specified in the Bid.	The Generating Resource Default Start-Up Bid Adjustment Component is a daily bid for each online state.
ALL	21645	A Generating Resource Default Start-Up Bid Adjustment Component must specify an Online Generating Resource State, if and only if the Generating Resource specified in the Bid is registered as a MSG for the Bid Period specified in the Bid.	MFR: Generating Resource State registration; zero (0) for offline state, one (1) for default online state, and greater than one (2, 3, etc.) for additional online states for MSG. For non-MSG, the default online state of one (1) is assumed. The default online state (1) is assumed to be the designated RA state for RA Generating Resources. The registered Maximum Capacity must be greater than the registered Minimum Load for each online state.
ALL	21646	A Start-Up Bid Component in a Generating Resource Default Bid Adjustment must specify a Start-Up Cost Bid Curve.	
ALL	21647	The Start-Up Cost Bid Curve specified in a Generating Resource Default Start-Up Bid Adjustment Component must be a staircase curve of Start-Up Cost (\$) versus Cooling Time (min), with any number of segments from 1 to the Maximum Start-Up Time/Cost Curve Segment Number.	Up to 3 Start-Up Costs for different states: cool, intermediate, warm.
ALL	21648	The Generating Resource Default Minimum Load Bid Adjustment Component must be associated with a Trading Hour in the Bid Period specified in the Bid and with a registered Online Generating Resource State.	The Generating Resource Default Minimum Load Bid Adjustment Component is an hourly bid for each online state.



ALL	21649	A Generating Resource Default Minimum Load Bid Adjustment Component must specify an Online Generating Resource State, if and only if the Generating Resource specified in the Bid is registered as a MSG for the Bid Period specified in the Bid.	For non-MSG, the default online state of one (1) is assumed.
ALL	21650	A Default Minimum Load Bid Adjustment Component in a Generating Resource Bid must specify a Minimum Load Cost (\$/hr)	
ALL	21651	The Generating Resource Default Energy Bid Adjustment Component must be associated with a Trading Hour in the Bid Period specified in the Bid and with a registered Online Generating Resource State.	The Generating Resource Default Energy Bid Adjustment Component is an hourly bid for each online state.
ALL	21652	A Generating Resource Default Energy Bid Adjustment Component must specify an Online Generating Resource State, if and only if the Generating Resource specified in the Bid is registered as a MSG for the Bid Period specified in the Bid.	For non-MSG, the default online state of one (1) is assumed.
ALL	21653	A Generating Resource Default Energy Bid Adjustment Component must specify an Energy Bid Curve.	
ALL	21654	The Energy Bid Curve specified in a Generating Resource Default Energy Bid Adjustment Component must be a staircase curve of Energy Bid Price (\$/MWh) versus Energy Bid Quantity (MW), with any number of segments from 1 to the Maximum Energy Curve Segment Number.	
RTM	31333	All Energy Bid Prices of the Energy Bid Curve specified in a Generating Resource Energy Bid Component must not be less than the Net Benefit On-Peak Floor for that Trading Period, if that Generating Resource is registered as a PDR for that Trading Period, and the Trading Period is an On-Peak Trading Hour.	PDR only. On-Peak. ESDER3a
RTM	31334	All Energy Bid Prices of the Energy Bid Curve specified in a Generating Resource Energy Bid Component must not be less than the Net Benefit Off-Peak Floor for that Trading Period, if that Generating Resource is registered as a PDR for that Trading Period, and the Trading Period is an Off-Peak Trading Hour.	PDR only. Off-Peak. ESDER3a
ALL	31645	If there is a Default Start-Up Bid Adjustment Component in a Generating Resource Bid, the Scheduling Coordinator specified in that Bid must be eligible to submit Default Bid Adjustment Components for the Generating Resource and Bid Period specified in that Bid.	MFR: SC eligibility for Default Bid Adjustment.
ALL	31646	The Online Generating Resource State specified in a Default Start-Up Bid Adjustment Component in a Generating Resource Bid must be a registered Online Generating Resource State for the Generating Resource and Bid Period specified in that Bid.	MSG only. MFR: online state registry for MSG.

ALL	31647	The Cooling Time Break Points of the Start-Up Cost Bid Curve specified in a Default Start-Up Bid Adjustment Component for an Online Generating Resource State in a Generating Resource Bid must match the corresponding Cooling Time Break Points in number, sequence, and magnitude, of the registered Start-Up Time Curve for that Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid.	MFR: Start-Up Time Curve registry by online state for Generating Resources.
ALL	31648	The Start-Up Cost Bid Curve specified in a Default Start-Up Bid Adjustment Component of a Generating Resource Bid must be monotonically increasing.	
ALL	31649	All Start-Up Costs of the Start-Up Cost Bid Curve specified in a Default Start-Up Bid Adjustment Component of a Generating Resource Bid must not be negative.	
ALL	31657	If there is a Default Minimum Load Bid Adjustment Component in a Generating Resource Bid, the Scheduling Coordinator specified in a that Bid must be eligible to submit Default Bid Adjustment Components for the Generating Resource and Bid Period specified in that Bid.	MFR: SC eligibility for Default Bid Adjustment.
ALL	31658	The Online Generating Resource State specified in a Default Minimum Load Bid Adjustment Component in a Generating Resource Bid must be a registered Online Generating Resource State for the Generating Resource and Bid Period specified in that Bid.	MSG only.
ALL	31659	The Minimum Load Cost specified in a Default Minimum Load Bid Adjustment Component for an Online Generating Resource State in a Generating Resource Bid must not be negative.	
ALL	31660	If there is a Default Energy Bid Adjustment Component in a Generating Resource Bid, the Scheduling Coordinator specified in that Bid must be eligible to submit Default Bid Adjustment Components for the Generating Resource and the Bid Period specified in that Bid.	MFR: SC eligibility for Default Bid Adjustment.
ALL	31666	If there is a Default Energy Bid Adjustment Component in a Generating Resource Bid, a Calculated Energy Bid must exist for the Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid.	ECIC: Calculated Energy Bid used as the generated Energy Bid Component.
ALL	31661	The Online Generating Resource State specified in a Default Energy Bid Adjustment Component in a Generating Resource Bid must be a registered Online Generating Resource State for the Generating Resource and Bid Period specified in that Bid.	MSG only.
ALL	31662	All Energy Bid Quantities of the Energy Bid Curve specified in a Default Energy Bid Adjustment Component in a Generator resource Bid must not be negative.	

ALL	31663	All Energy Bid Quantities of the Energy Bid Curve specified in a Default Energy Bid Adjustment Component in a Generating Resource Bid must be integers if the Generating Resource specified in that Bid is registered as an Inter-Tie Generating Resource for the Bid Period specified in that Bid.	TGs only. MFR: Minimum Load and Maximum Capacity for TGs must be integers. Zero is considered an integer.
ALL	31664	The MW Break Points of the Energy Bid Curve specified in a Default Energy Bid Adjustment Component for an Online Generating Resource State in a Generating Resource Bid must match the corresponding MW Break Points in number, sequence, and magnitude, of the Energy Bid Curve of the Calculated Energy Bid for that Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid.	ECIC: Calculated Energy Bid used as the generated Energy Bid Component.
ALL	31665	The Energy Bid Curve specified in a Default Energy Bid Adjustment Component in a Generating Resource Bid must be monotonically increasing.	
ALL	31666	If there is a Default Energy Bid Adjustment Component in a Generating Resource Bid, a Calculated Energy Bid must exist for the Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid.	ECIC: Calculated Energy Bid used as the generated Energy Bid Component.
ALL	41013	If the registered Gas Price Index for the Generating Resource and Bid Period in a Generating Resource Bid is greater than the registered Reasonableness Threshold Gas Price Index for that Generating Resource and Bid Period, the registered Reasonableness Threshold Gas Price Index for that Generating Resource and Bid Period must be replaced by that registered Gas Price Index and the value of the Current Gas Price Flag of that registered Reasonableness Threshold Gas Price Index must be replaced with the value of the Current Gas Price Flag of that registered Gas Price Index.	ECIC: Current Gas Price Flag associated with a Gas Price Index indicating whether gas prices reflect current data.
ALL	41014	If the Current Gas Price Flag of a registered Reasonableness Threshold Gas Price Index for a Generating Resource and Bid Period in a Generating Resource Bid is "Yes", the Reasonableness Threshold Gas Price Index must be set to the sum of the registered Reasonableness Threshold Non-Commodity Price Index for that Generating Resource and Bid Period plus the product of a) the Reasonableness Threshold Commodity Price Index for that Generating Resource and Bid Period, b) the Fuel-Region-Specific Gas-Fired Current Volatility Scalar for that Generating Resource and Bid Period, and c) the Resource-Specific Volatility Current Scalar for that Generating Resource and Bid Period; otherwise the Reasonableness Threshold Gas Price Index must be set to the sum of the registered Reasonableness Threshold Non-Commodity Price Index for that Generating Resource and Bid Period plus the product of a) the Reasonableness Threshold Commodity Price Index for that Generating Resource and Bid Period, b) the Fuel-Region-Specific Gas-Fired Non-Current Volatility Scalar for that	MFR: Resource Specific Volatility Scalars reflecting current/non-current gas prices.

		Generating Resource and Bid Period, and c) the Resource-Specific Volatility Non-Current Scalar for that Generating Resource and Bid Period.	
ALL	41131	The Default Start-Up Bid Curve for an Online Generating Resource State in a Generating Resource Bid must be the registered Start-Up Cost Curve for that Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid, if that Generating Resource is registered with a Start-Up Cost Basis of "Registered Cost" for that Bid Period.	MFR: Start-Up Cost Curve registry by online state for Generating Resources registered with a Start-Up Cost Basis of "Registered Cost".
ALL	41132	The Default Start-Up Bid Curve Origin for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid must be set to "Registered", if that Generating Resource is registered with a Start-Up Cost Basis of "Registered Cost" for that Bid Period.	MFR: Start Up Cost Basis
ALL	41133	The Default Start-Up Bid Curve for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid must be the product of the Relative Proxy Start-Up Cost Ceiling and the Proxy Start-Up Cost Curve for that Online Generating Resource State of that Generating Resource and Bid Period, plus the Start-Up Opportunity Cost for that Online Generating Resource State of that Generating Resource and Bid Period, if that Generating Resource is registered with a Start-Up Cost Basis of "Proxy Cost" for that Bid Period.	Start-Up Cost capped by the Relative Proxy Start-Up Cost Ceiling plus the Start-Up Opportunity Cost.
ALL	41134	The Default Start-Up Bid Curve Origin for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid must be set to "Proxy", if that Generating Resource is registered with a Start-Up Cost Basis of "Proxy Cost" for that Bid Period.	
ALL	41225	The Default Minimum Load Bid for an Online Generating Resource State in a Generating Resource Bid must be the registered Minimum Load Cost for that Online Generating Resource State of the Generating Resource and Bid Period specified in that Bid, if that Generating Resource is registered with a Minimum Load Cost Basis of "Registered Cost" for that Bid Period.	MFR: Start-Up Cost Curve registry by online state for Generating Resources registered with a Start-Up Cost Basis of "Registered Cost".
ALL	41226	The Default Minimum Load Bid Origin for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid must be set to "Registered", if that Generating Resource is registered with a Minimum Load Cost Basis of "Registered Cost" for that Bid Period.	MFR: Start Up Cost Basis
ALL	41227	The Default Minimum Load Bid for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid must be the lower of 1) the product of the Relative Proxy Minimum Load Cost Ceiling and the Proxy Minimum Load Cost for that Online Generating Resource State of that Generating Resource and Bid Period, plus the Minimum Load Opportunity Cost for that Online Generating Resource State of that Generating Resource and Bid Period, or 2) the	Minimum Load Cost capped by the Relative Proxy Minimum Load Cost Ceiling plus the Minimum Load Opportunity Cost.

		product of the Energy Bid Ceiling and the higher of the Minimum Load Cap Denominator and the registered Minimum Load for that Online Generating Resource State of that Generating Resource and Bid Period, if that Generating Resource is registered with a Minimum Load Cost Basis of "Proxy Cost" for that Bid Period.	
ALL	41228	The Default Minimum Load Bid Origin for an Online Generating Resource State of a Generating Resource and Bid Period must be set to "Proxy", if that Generating Resource is registered with a Minimum Load Cost Basis of "Proxy Cost" for that Bid Period.	
ALL	41323	The Default Energy Bid for an Online Generating Resource State of a Generating Resource and Trading Hour in a Generating Resource Bid must be the Calculated Energy Bid for that Online Generating Resource State of that Generating Resource and Trading Hour, if a Calculated Energy Bid exists for that Online Generating Resource State of that Generating Resource and Trading Hour.	ECIC: Calculated Energy Bid used as the Default Energy Bid Component, unless modified by the Ex-Ante process. Applies also to generated Energy Bid Components.
ALL	41324	The Default Energy Bid Origin for an Online Generating Resource State of a Generating Resource and Trading Hour in a Generating Resource Bid must be the Calculated Energy Bid Origin for that Online Generating Resource State of that Generating Resource and Trading Hour, if a Calculated Energy Bid exists for that Online Generating Resource State of that Generating Resource and Trading Hour.	ECIC: Calculated Energy Bid Origin used as the Default Energy Bid Origin, unless modified by the Ex-Ante process. Applies also to generated Energy Bid Components.
ALL	41351	The Default Energy Bid for an Online Generating Resource State of a Generating Resource and Trading Hour in a Generating Resource Bid must be must be a single Energy Bid Segment with an Energy Bid Price equal to the Default Energy Bid Price, if no Calculated Energy Bid exists for that Online Generating Resource State of that Generating Resource and Trading Hour.	
ALL	41352	The Default Energy Bid Origin for an Online Generating Resource State of a Generating Resource and Trading Hour in a Generating Resource Bid must be set to "Default", if no Calculated Energy Bid exists for that Online Generating Resource State of that Generating Resource and Trading Hour.	
ALL	41325	If an Energy Bid Price of an Energy Bid Segment of the Energy Bid Curve specified in an Energy Bid Component for an Online Generating Resource State of a Generating Resource and Trading Hour in a Generating Resource Bid is greater than the Energy Bid Soft Cap and the Energy Bid Price of the Energy Bid Segment of the Default Energy Bid for that Online Generating Resource State of that Generating Resource and Trading Hour that overlaps with that Energy Bid Segment of that Energy Bid Curve, that Energy Bid Segment must be partitioned to align with that overlapping Energy Bid Segment of that Default Energy Bid, and the Energy Bid Price of that	

		partitioned Energy Bid Segment must be replaced with the greater of the Energy Bid Soft Cap or the Energy Bid Price of that overlapping Energy Bid Segment of that Default Energy Bid.	
ALL	41645	The Reasonableness Threshold Start-Up Bid Curve for an Online Generating Resource State, whether startable or not, of a Generating Resource and Bid Period in a Generating Resource Bid must be derived as the Relative Proxy Start-Up Cost Ceiling multiplied by the sum of a) the Start-Up Energy Cost Curve, b) the Start-Up Fuel Cost Curve, c) the Greenhouse Gas Start-Up Cost Allowance Curve, d) the Major Maintenance Start-Up Cost Adder, and e) the Grid Management Charge Start-Up Cost Adder, plus the Start-Up Opportunity Cost, for that Online Generating Resource State of that Generating Resource and Bid Period, if that Generating Resource is registered with a Start-Up Cost Basis of "Proxy Cost" for that Bid Period.	RLC: Greenhouse Gas Start-Up Cost Allowance Curve for Generating Resources by Online Generating Resource State (\$0/start by default). The curve breakpoints must be the same as the breakpoints of the Start-Up Energy Curve and the Start-Up Fuel Cost Curve or the Start-Up Fuel Curve for that Online Generating Resource State. RLC: Major Maintenance Start-Up Cost Adder for Generating Resources by Online Generating Resource State (\$0/start by default).
ALL	41646	The Start-Up Energy Cost Curve used to derive the Reasonableness Threshold Start-Up Bid Curve for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid must be calculated as the product of the registered Start-Up Energy Curve for that Online Generating Resource State and the registered Energy Price Index, for that Generating Resource and Bid Period, if that Generating Resource is registered with a Start-Up Cost Basis of "Proxy Cost" for that Bid Period.	MFR: Start-Up Energy Curve (Start-Up Energy (MWh) versus Cooling Time (min)) registry by online state and Energy Price Index (\$/MWh) registry for Generating Resources registered with a Start-Up Cost Basis of "Proxy Cost".
ALL	41647	The Start-Up Fuel Cost Curve used to derive the Reasonableness Threshold Start-Up Bid Curve for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid must be calculated as the product of a) the registered Start-Up Fuel Cost Curve for that Online Generating Resource State for that Generating Resource and Bid Period, b) the Fuel-Region-Specific Non-Gas-Fired Volatility Scalar for that Bid Period, and c) the Resource-Specific Volatility Current Scalar for that Generating Resource and Bid Period, if that Generating Resource is registered with a Start-Up Cost Basis of "Proxy Cost" but not as a Natural Gas Resource for that Bid Period.	MFR: Natural Gas Resource registry for Generating Resources. MFR: Start-Up Fuel Cost Curve (Start-Up Fuel Cost (\$) versus Cooling Time (min)) registry by online state for Generating Resources not registered as Natural Gas Resources, but with a Start-Up Cost Basis of "Proxy Cost".

ALL	41648	The Start-Up Fuel Cost Curve used to derive the Reasonableness Threshold Start-Up Bid Curve for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid must be calculated as the product of the registered Start-Up Fuel Curve for that Online Generating Resource State and the registered Reasonableness Threshold Gas Price Index, for that Generating Resource and Bid Period, if that Generating Resource is registered with a Start-Up Cost Basis of "Proxy Cost" and as a Natural Gas Resource for that Bid Period.	MFR: Start-Up Fuel Curve (Start-Up Fuel (Btu) versus Cooling Time (min)) registry by online state and Reasonableness Threshold Commodity Price and Reasonableness Threshold Non-Commodity Price (\$/MMBtu) registry for Generating Resources registered as Natural Gas Resources with a Start-Up Cost Basis of "Proxy Cost".
ALL	41649	If there is a Default Start-Up Bid Adjustment Component for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid, a Start-Up Cost of the Start-Up Cost Curve specified in that Default Start-Up Bid Component is not greater than the corresponding Start-Up Cost of the Reasonableness Threshold Start-Up Bid Curve for that Online Generating Resource State of that Generating Resource and Bid Period, and that Generating Resource is registered with a Start-Up Cost Basis of "Proxy Cost" for that Bid Period, the corresponding Start-Up Cost of the Default Start-Up Bid Curve for that Online Generating Resource State of that Generating Resource and Bid Period must be replaced with that Start-Up Cost from that Default Start-Up Bid Adjustment Component and the Default Start-Up Bid Curve Origin for that Online Generating Resource State of that Generating Resource and Bid Period must be set to "Ex-Ante".	Ex-ante adjustment validation. Replace a proxy startup segment with the requested value if that segment is not greater than the reasonableness threshold value.
ALL	41650	If there is a Default Start-Up Bid Adjustment Component for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid, a Start-Up Cost of the Start-Up Cost Curve specified in that Default Start-Up Bid Component is greater than the corresponding Start-Up Cost of the Reasonableness Threshold Start-Up Bid Curve for that Online Generating Resource State of that Generating Resource and Bid Period, and that Generating Resource is registered with a Start-Up Cost Basis of "Proxy Cost" for that Bid Period, the corresponding Start-Up Cost of the Default Start-Up Bid Curve for that Online Generating Resource State of that Generating Resource and Bid Period must be replaced with the corresponding Start-Up Cost from that Reasonableness Threshold Start-Up Bid Curve and the Default Start-Up Bid Curve Origin for that Online Generating Resource State of that Generating Resource and Bid Period must be set to "Threshold".	Ex-ante adjustment validation. Replace a proxy startup segment with the reasonableness threshold value if that segment is greater than the reasonableness threshold value.

ALL	41652	<p>The Reasonableness Threshold Minimum Load Bid for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid must be derived as the lower of 1) the Relative Proxy Minimum Load Cost Ceiling multiplied by the sum of a) the Minimum Load Fuel Cost, b) the product of the registered Operation and Maintenance Cost and the registered Minimum Load, c) the product of the Greenhouse Gas Minimum Load Cost Allowance and the registered Minimum Load, d) the Major Maintenance Minimum Load Cost Adder, and e) the product of the Grid Management Charge Minimum Load Cost Rate and the registered Minimum Load, plus the Minimum Load Opportunity Cost, for that Online Generating Resource State of that Generating Resource and Bid Period, or 2) the product of the Energy Bid Ceiling and the the higher of the Minimum Load Cap Denominator and the registered Minimum Load for that Online Generating Resource State of that Generating Resource and Bid Period, if that Generating Resource is registered with a Minimum Load Cost Basis of "Proxy Cost" for that Bid Period.</p>	<p>MFR: Minimum Load Fuel Cost (\$/hr) and Operation and Maintenance Cost (\$/MWh) registry by online state for Generating Resources with a Minimum Load Cost Basis of "Proxy Cost".          RLC: Greenhouse Gas Minimum Load Cost Allowance for Generating Resources by Online Generating Resource State (\$0/MWh by default).          RLC: Major Maintenance Minimum Load Cost Adder for Generating Resources by Online Generating Resource State (\$0/h by default).          RLC: Grid Management Charge Minimum Load Cost Rate (\$0/MWh by default).</p>
ALL	41653	<p>The Minimum Load Fuel Cost used to derive the Reasonableness Threshold Minimum Load Bid for an Online Generating Resource State of a Generating Resource and a Bid Period in a Generating Resource Bid must be calculated as the product of a) the registered Average Fuel Cost at the registered Minimum Load for that Online Generating Resource State of that Generating Resource and Bid Period, b) that registered Minimum Load, c) the Fuel-Region-Specific Non-Gas-Fired Volatility Scalar for that Generating Resource and Bid Period, and d) the Resource-Specific Volatility Current Scalar for that Generating Resource and Bid Period, if that Generating Resource is registered with a Minimum Load Cost Basis of "Proxy Cost" but not as a Natural Gas Resource for that Bid Period.</p>	<p>MFR: Average Fuel Cost (\$/kWh) registry by online state for Generating Resources with a Cost Basis of "Proxy Cost" and not registered as Natural Gas Resources (0 by default).          MFR: Minimum Load Run Hour Cost (\$/hr) registry by online state for Generating Resources with a Cost Basis of "Proxy Cost".</p>
ALL	41654	<p>The Minimum Load Fuel Cost used to derive the Reasonableness Threshold Minimum Load Bid for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid must be calculated as the product of 1) the registered Average Heat Rate at the registered Minimum Load for that Online Generating Resource State of that Generating Resource and Bid Period, 2) that registered Minimum Load, and 3) the registered Reasonableness Threshold Gas Price Index for that Generating Resource and Bid Period, if that Generating Resource is</p>	<p>MFR: Average Heat Rate (Btu/kWh) registry by online state and Gas Price Index (\$/MMBtu) registry for Generating Resources with a Cost Basis of "Proxy Cost" registered as Natural Gas</p>



		registered with a Minimum Load Cost Basis of "Proxy Cost" and as a Natural Gas Resource for that Bid Period.	Resources (0 by default). MFR: Minimum Load Run Hour Cost (\$/hr) registry by online state for Generating Resources with a Cost Basis of "Proxy Cost".
ALL	41655	If there is a Default Minimum Load Bid Adjustment Component for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid, the Minimum Load Cost specified in that Bid Component is not greater than the Reasonableness Threshold Minimum Load Bid for that Online Generating Resource State of that Generating Resource and Bid Period, and that Generating Resource is registered with a Minimum Load Cost Basis of "Proxy Cost" for that Bid Period, the Default Minimum Load Bid for that Online Generating Resource State of that Generating Resource and Bid Period must be replaced with the Minimum Load Cost specified in that Default Minimum Load Bid Adjustment Component and the Default Minimum Load Bid Origin for that Online Generating Resource State of that Generating Resource and Bid Period must be set to "Ex-Ante".	Ex-ante adjustment validation. Replace the proxy minimum load cost with the requested value if the requested value is not greater than the reasonableness threshold value.
ALL	41656	If there is a Default Minimum Load Bid Adjustment Component for an Online Generating Resource State of a Generating Resource and Bid Period in a Generating Resource Bid, the Minimum Load Cost specified in that Bid Component is greater than the Reasonableness Threshold Minimum Load Bid for that Online Generating Resource State of that Generating Resource and Bid Period, and that Generating Resource is registered with a Minimum Load Cost Basis of "Proxy Cost" for that Bid Period, the Default Minimum Load Bid for that Online Generating Resource State of that Generating Resource and Bid Period must be replaced with the Reasonableness Threshold Minimum Load Bid for that Online Generating Resource State of that Generating Resource and Bid Period and the Default Minimum Load Bid Origin for that Online Generating Resource State of that Generating Resource and Bid Period must be set to "Threshold".	Ex-ante adjustment validation. Replace the proxy minimum load cost with the reasonableness threshold value if the requested value is greater than the reasonableness threshold value.
ALL	41657	If there is a Default Energy Bid Adjustment Component for an Online Generating Resource State of a Generating Resource and Trading Hour in a Generating Resource Bid and the Energy Bid Price of an Energy Bid Segment of the Energy Bid Curve specified in that Default Energy Bid Adjustment Component is not greater than the Energy Bid Price of the corresponding Energy Bid Segment of the Reasonableness Threshold Default Energy Bid Curve for that Online Generating Resource State of that Generating Resource and Trading Hour, the Energy Bid Price of the corresponding Energy Bid Segment of the Default Energy Bid for that Online Generating Resource State of that Generating Resource and Trading Hour must be replaced with that	ECIC: Reasonableness Threshold Default Energy Bid.

		Energy Bid Price of that Energy Bid Segment specified in that Default Energy Bid Adjustment Component and the Default Energy Bid Origin for that Online Generating Resource State of that Generating Resource and Trading Hour must be set to "Ex-Ante".	
ALL	41658	If there is a Default Energy Bid Adjustment Component for an Online Generating Resource State of a Generating Resource and Trading Hour in a Generating Resource Bid and the Energy Bid Price of an Energy Bid Segment of the Energy Bid Curve specified in that Default Energy Bid Adjustment Component is greater than the Energy Bid Price of the corresponding Energy Bid Segment of the Reasonableness Threshold Default Energy Bid Curve for that Online Generating Resource State of that Generating Resource and Trading Hour, the Energy Bid Price of the corresponding Energy Bid Segment of the Default Energy Bid for that Online Generating Resource State of that Generating Resource and Trading Hour must be replaced with the Energy Bid Price of the corresponding Energy Bid Segment of the Reasonableness Threshold Default Energy Bid Curve for that Online Generating Resource State of that Generating Resource and Trading Hour and the Default Energy Bid Origin for that Online Generating Resource State of that Generating Resource and Trading Hour must be set to "Thresshold".	ECIC: Reasonableness Threshold Default Energy Bid.
ALL	42306	If an Energy Bid Price of the Energy Bid Curve specified in an Energy Bid Component in a Non-Generator Resource Bid is greater than the Energy Bid Soft Cap, that Energy Bid Price must be replaced with the Energy Bid Soft Cap. If the External Bid Status is not set to "M" (Modified) or "CM" (Conditionally Modified), set the External Bid Status to "MI" (Valid).	
ALL	51022	After each Market Close Time, the system must broadcast all Default Energy Bids for that Bid Period that do not have a Default Energy Bid Origin of "Default".	
DAM	61038	If there is a change to the Day-Ahead registered Gas Price Index for a Generating Resource and Trading Day or to the Day-Ahead registered Reasonableness Threshold Gas Price Index for a Generating Resource and Trading Day, the Bid Processing rules for gas prices, commitment cost and commitment cost adjustment (41013, 41014, 41131-41134, 41129, 41121-41123, 41130, 41645-41650, 41105-41110, 41118, 41126, 41135, 41119, 41127, 41225-21228, 41224, 41206, 41207, 41652-41656, 41203, 41215-41220, 41211, 41229, 41204, 41212, 41972-41974, 41985, 41987, 41991, 41988, 41992, and 41986) must re-fire for all Generating Resource Bids for that Generating Resource and Trading Day.	Special processing to re-fire for submitted changes.
RTM	61039	If there is a change to the Real-Time registered Gas Price Index for a Generating Resource and Trading Hour or to the Real-Time registered Reasonableness Threshold Gas Price Index for a Generating Resource and Trading Hour, the Bid Processing rules for gas prices, commitment cost and commitment cost adjustment (41013,	Special processing to re-fire for submitted changes.



		41014, 41131-41134, 41129, 41121-41123, 41130, 41645-41650, 41105-41109, 41111, 41116-41118, 41126, 41135, 41119, 41127, 41225-21228, 41224, 41206, 41207, 41652-41656, 41203, 41215-41219, 41221-41223, 41211, 41229, 41204, 41212, 41971, 41975, 41976, 41972-41974, 41985, 41987, 41991, 41988, 41992, and 41986) must re-fire for all Generating Resource Bids for that Generating Resource and Trading Hour.	
DAM	61040	If there is a change to the Day-Ahead Calculated Energy Bid for a Generating Resource and Trading Day, the Bid Processing rules for energy bid and default energy bid adjustment (41323, 41324, 41657, 41658, 41318, 41339, 41346, 41303, 41307, 41327, 41330, 41328, 41332, 41350, 41340, 41347, 41348, 41325, 41326, and 41321) must re-fire for all Generating Resource Bids for that Generating Resource and Trading Day.	Special processing to re-fire for submitted changes.
RTM	61041	If there is a change to the Real-Time Calculated Energy Bid for a Generating Resource and Trading Hour, the Bid Processing rules for energy bid and default energy bid adjustment (41323, 41324, 41657, 41658, 41318, 41339, 41346, 41341, 41306, 41310, 41311, 41350, 41340, 41347, 41348, 41325, 41326 and 41321) must re-fire for all Generating Resource Bids for that Generating Resource and Trading Hour.	Special processing to re-fire for submitted changes.

The full set of the Business Rules can be seen under SIBR user documentation under the Application Access/ in SIBR user documentation for all rules related to SIBR/BSAP/RC-BSAP.

<http://www.caiso.com/participate/Pages/ApplicationAccess/Default.aspx>

END Document