



California ISO

SIBR - Scheduling Coordinator Users Guide

January 26, 2024

Revision History

Date	Version	By	Description
1/26/2024	8.0	WT	Added Mock screen for DAME IRU/IRD/RCU/RCD products (pg 61-62)
8/21/2023	7.3	WT	Update for new Hourly component for Off Grid Charge. (pg 55-56)
2/23/2023	7.2	WT	Update for browser support Edge Chrome.
12/20/2022	7.1	WT	Update UI Transaction Wheel Counter Resource reference.
6/8/2022	7.0	WT	New UI tabs added for Messages (FERC 831), Ancilliary Service Resource

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			(ASR), Resource Dynamic Limits (DYN) and Export Priority Report for Exports using a Support Resource.
1/4/2021	6.8	WT	Update for added detail on functionality for CCDEBE
6/12/2020	6.7	WT	Update for added functionality CCDEBE and WebSDK3.5
6/14/2018	6.6	WT	Update for added functionality for in-line filter and state selections (MSG).
5/11/2018	6.5	WT	Update add change for in line filter by hour.
3/2/2018	6.4	WT	Update added for grid expansion and Favorites.
2/2/2018	6.3	WT	Update with WebSDK 3.4 UI layout and functions for SIBR application.
1/18/2018	6.2	WT	Update with WebSDK 3.4 UI layout and functions for SIBR bidding. DRAFT in progress up to section 5 Convergence Bids.
12/28/2017	6.1	WT	Update with WebSDK 3.4 UI layout and functions for SIBR bidding. DRAFT in progress up to section 4 Trades.
12/14/2017	6	WT	Update with WebSDK 3.4 UI layout and functions for SIBR bidding. DRAFT in progress up to Creating Bids.
6/15/2016	5.5	DC	Updated section 3.4 for ESDER Project Fall 2016 Project (State of Charge - Daily Component)
5/27/2016	5.4	WT	Updated section 1.2.2 and 3.2 for Daily Components to add re-bidding in RTM. Added Figure 27a to section


			3.4 for RTM tab Daily Components.
10/1/2015	5.3	WT	Added GHG bid component to the Hourly Display and removed it from Day-Ahead. Added GHG Bid Component. Added note for IE compatibility setting.
6/5/2015	5.2	WT	Added GHG bid component and removed BSAP (BSAP has a separate User Guide).
4/15/2015	5.1	WT	Added CB On Ties UI functionality.
11/4/14	5.0	WT	Fall 2014 Release Functionality added. (Wheeling, Transaction bids) EIM Base Schedule.
5/14/13	4.0	WT	Functionality documentation added from post Go-Live through Pay for Performance Regulation Mileage.
8/24/09	3.4	WT	Capacity Limit Ind Flag on EN Product for RA.
12/7/07	3.3	WT	Review of Trades Status Removed outdated info. Added ETC scheduling screenshot.
11/20/07	3.2	WT	Updated for IMS Update 2
10/11/07	3.1	WT	Updated for IMS Update 1
2/28/07	3.0	MM	Added information on Indicator Viewer Screen. Added screen shots for uploading bids and trades

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1 Introduction

In response to the California energy crisis of 2000 and 2001 the California Independent System Operator (CAISO) management initiated the MRTU project to:

- Take a comprehensive view of the changes needed in the structure of California’s electricity markets with a focus on those markets that are operated by the CAISO in performance of its core functions, and
- Develop an integrated program of proposed market design changes that will address current problems in a systematic fashion and create a framework for a sustainable, workably competitive electric industry that benefits all California consumers and is compatible with the rest of the western region.

One part of the CAISO system is the Scheduling Infrastructure Business Rules (SIBR) component. From the viewpoint of a Scheduling Coordinator (SC) who interacts with the system, this component:

- Accepts bids and trades for energy and energy-related commodities from Scheduling Coordinators that are certified to interact with CAISO,
- Ensures that those bids and trades are valid and modifies bids for correctness when necessary.
- Enters those bids and trades into a database for processing by other components of CAISO’s management systems, and
- Provides required feedback in the form of messages displayed to SCs concerning bids and trades that have been submitted.

This manual will instruct a Scheduling Coordinator (SC) in the usage of the California ISO Scheduling Infrastructure Business Rules (SIBR) web user interface for entering and submitting bid data.

This manual is intended to be used by persons who wish to use the web-based user interface supplied by the CAISO system to submit bids and trades for energy and energy-related commodities and services

The organization of this manual is as follows:

- Chapter 1 is introductory material. Notably, it contains an overview of the process that the California ISO (and the software system that has been put into place by CAISO) follows in accepting and evaluating bids. This material is useful in understanding how bids are processed including bid statuses, the order in which processing steps occur, etc. The chapter also explains how to access the system.

All users of the system should read this chapter.



- Chapter 2 describes basics of the user interface used to enter bids. All user interface screens are constructed of certain basic elements; they are described here.

All users who will interact with the SIBR User Interface should read this chapter.

- Chapter 3 discusses the components of bids and how to enter them. It also describes how to submit bids, how to view bid status as a bid progresses through the system, how to cancel a bid, how to create a new bid to replace one that is already in the system, etc.

Personnel who enter, submit, or need to view the status of bids should read this chapter.

- Appendix A is a glossary. In this instance, the glossary is quite large in an effort to provide a common vocabulary for all persons involved in the bidding process.
- Appendix B contains flowcharts for both Day-Ahead and Real-Time bid processing. These are of interest to persons who wish to see the entire process described in a single diagram.

1.1 References

1.2 Overview

The following chapter will discuss how the bidding process works at the California ISO, using the software system that has been jointly designed by CAISO and Siemens and built by Siemens. Not only will we discuss how the process works, but we will also establish a common vocabulary for that discussion¹.

Note that the overview in this chapter is not intended to explain every detail of the process. It will, however describe the major steps in bid processing. The overview is in three sections:

- Theory: where we explain how the main flows in the process work.
- Practice: where we discuss in general terms how an SC interacts with the system via the user interface.
- FAQ: where we answer questions – some which have come from customers and some that we've made up ourselves on behalf of customers.

1.2.1 Theory

Bids

A bid is an “offer for the supply (or demand) of a market commodity for a specified market. The CAISO has adopted the use of a single energy curve for all services offered by a single resource. A

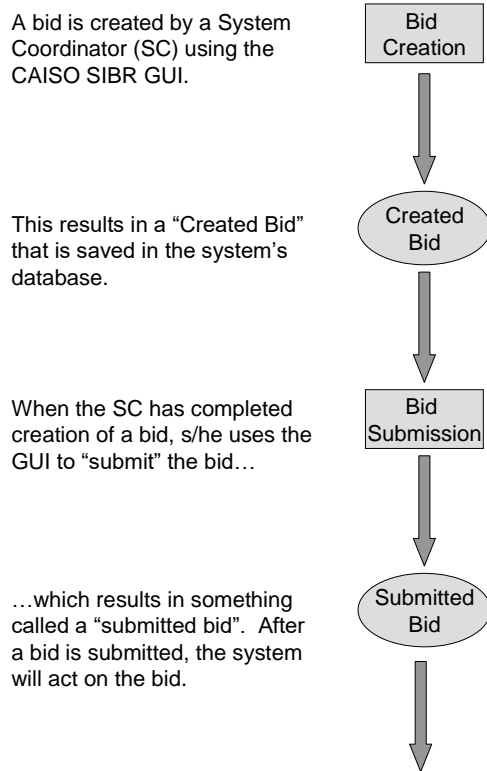
¹ This document includes an extensive glossary of terms and acronyms used in the context of the CAISO system.

bid in the CAISO SIBR system will contain all commodities and self-schedules being offered to a specified CAISO markets on a resource.

Create and Submit


Figure 1 illustrates the process of creating and submitting a bid. In this case, we are discussing a bid for the Day Ahead Market. (Note that flowcharts for the complete Day Ahead and Real-Time processing flow are included in Appendix B.)

Figure 1: Day-Ahead Bid Creation & Submission



Although this process seems simple, there are important subtleties. Specifically, there is an important difference between "created bid" and "submitted bid". An SC uses the GUI to create a bid by entering values for all the bid components. During this process, beyond some very simple validation (e.g., no alpha characters in numeric fields) and saving the bid in the database, the system takes little interest in the actual contents of the bid.

After the SC has created the bid, it is submitted by clicking a button on the bid creation page. At this point, the system queues the bid for validation by the "rules engine" and informs the SC that the bid has been submitted.

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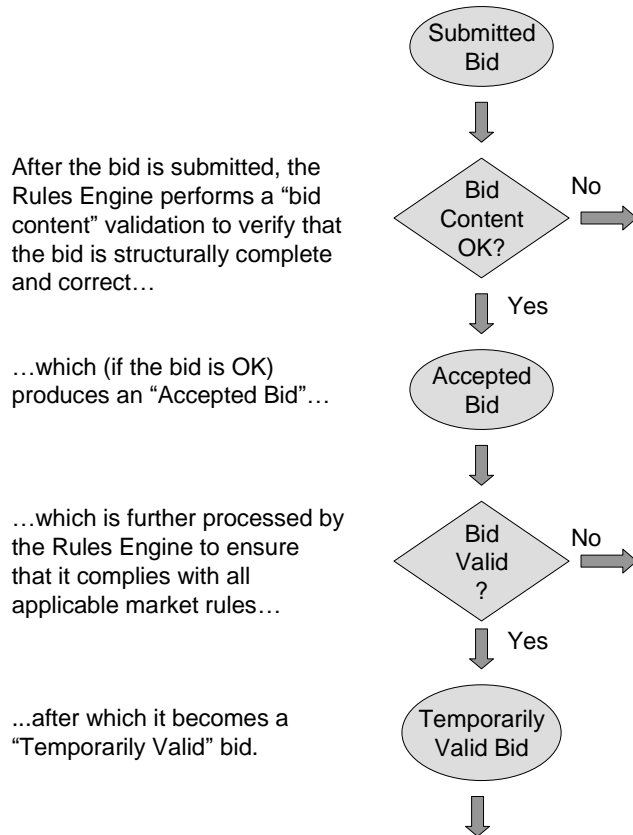
After a bid is submitted, the system maintains a complete history of the bid and actions performed. The SC can view the bid; it may also be used as the basis for creating another bid.

Validation

Once an SC submits a bid, it is available for the system to validate. The SIBR Rules Engine performs validation. The SIBR Rules Engine is programmed with several hundred rules that are used to validate the bid.

Flowcharts for the complete Day Ahead and Real-Time processing flow are included in Appendix B.

Figure 2: Day-Ahead Bid Validation (Simplified)



The process of validating a bid actually takes place in multiple steps; however, these multiple steps are automatic and are seamless to the user. Figure 2 illustrates two of those steps:

- Content Validation determines that the bid adheres to the structural rules required of all bids. This includes such things as validating that all required components are present, the units or services contained in the bid actually exist, etc.
 - If the Content check fails, the bid becomes a “Rejected Bid”.
 - After Content Validation succeeds, Bid Validation verifies that the various components of the bid adhere to the applicable market rules. If this validation passes, the bid becomes eligible to be used in a market.

These and all future bid processing steps can be said to be performed “in the background”. This means that the system will not immediately inform the SC of errors. After the validation process has



completed, the system remembers any errors; it will then inform the SC that validation has completed and will present error analysis to the SC. (If the SC has logged off, error analysis will be available the next time s/he logs on.).

If all validation up to this point passes, the bid becomes a “Temporarily Valid Bid”. If validation fails, the bid becomes an “Invalid Bid”. (For the sake of simplicity, failure paths are not shown in Figure 2)

So, now the system has a “Temporarily Valid Bid”. Based upon market requirements and prior agreements, the bid may either be accepted as-is or modified by the system. Figure 3 shows the first portions of Bid Processing in flowchart form.

The system analyzes the Temporarily Valid Bid produced in Figure 2. Depending upon master file data, data contained in the bid and market rules, SIBR may automatically modify the bid to produce a valid bid that can be accepted into the designated CAISO market.

- If the bid is acceptable to the system as-is, it is called a Conditionally Valid Bid for dates beyond the latest Master File date, and would be a Valid Bid for the date the last Master File was received.
- If the bid is acceptable only after the system has automatically modified it, it is called a Conditionally Modified Bid for dates beyond the latest Master File date, and would be a Modified Bid for the date the last Master File was received. Some examples of when a bid would be modified by the SIBR system are as follows:

The Regulation Mileage Up or Down was not included in the submitted bid when a Regulation component did exist. SIBR will insert the Regulation Mileage bid at the default cost.

The energy bid curve range specified in a bid does not cover the Reliability Availability Obligation for the resource. SIBR will extend the energy bid curve to cover the additional capacity specified for the resource.

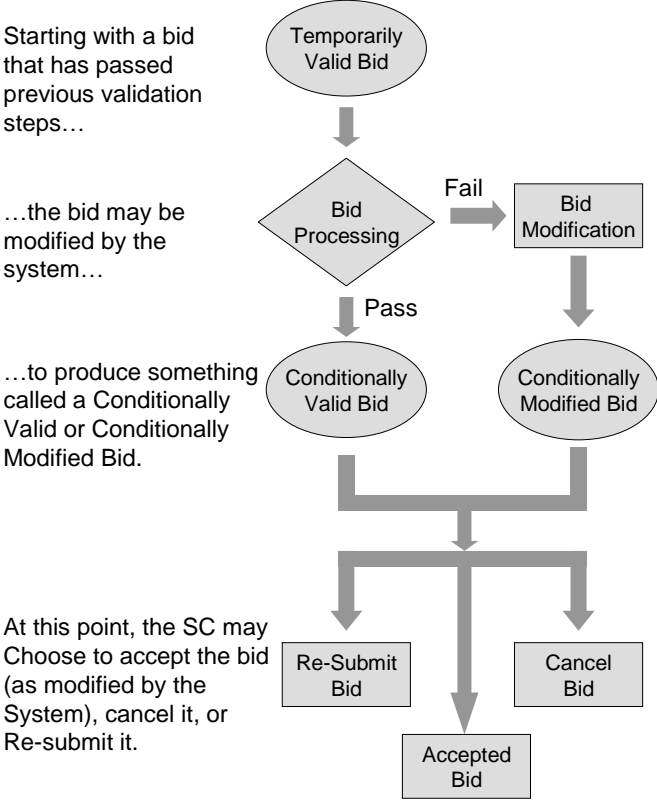
At this point, the SC has the option to view the bid and:

- Cancel the bid, in which case the bid is retained in the system database as a Cancelled Bid. Cancelled bids will not be further processed.
- Note: Cancel is used for Market Accepted bids, those are bids that are in a Conditionally Modified / Modified or Conditionally Valid / Valid or MF Inserted status.

Do not use ‘Delete’ for Market Accepted bids, Delete is for bids that are in a ‘Create’, ‘Invalid’ or ‘Rejected’ status.

- Modify and re-submit the bid, in which case the original bid is retained in the system database as an Obsolete Bid. Obsolete bids will not be further processed. If the bid is re-submitted, processing begins again as shown in Figure 1. (Note that the GUI allows the SC to use a Conditionally Valid / Valid Bid or a Conditionally Modified / Modified Bid or MF Inserted as the basis for a new bid for re-submission.)
- Leave the Conditionally Modified / Modified or Conditionally Valid / Valid or MF Inserted bid as-is to be processed in the designated CAISO market.

Figure 3: Day-Ahead Bid Processing

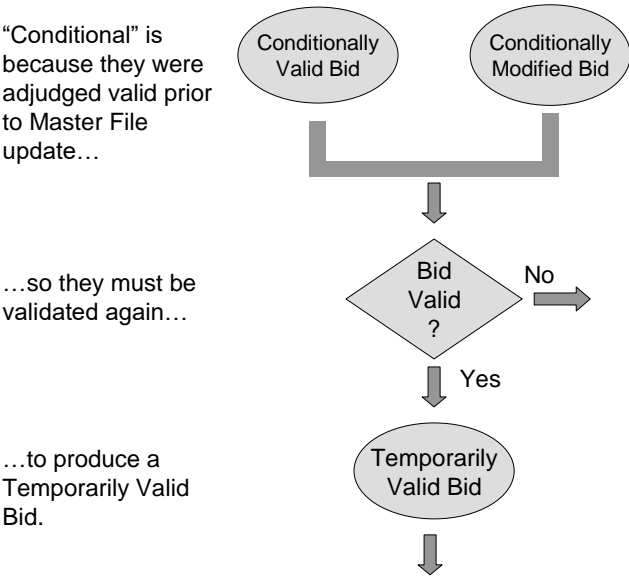


Master File

Master File changes are introduced into the system once per day. Since Master File changes may affect bid acceptance, all bids must be re-validated after the final Master File update and before the designated trading period when the bid will take effect. This explains the use of the word “Conditionally” in our earlier discussion of Bid Processing. Bids for the Day-Ahead market may be submitted up to 7 days in advance. Therefore, a bid that is submitted on Monday afternoon for Thursday’s Day Ahead Market that has a status of Conditionally Valid must be re-validated after the master file has updated each day with data for the next trading day to take into account any changes that may have occurred. Bids will retain the status of Conditional until the master file update has occurred for the designated trading period.

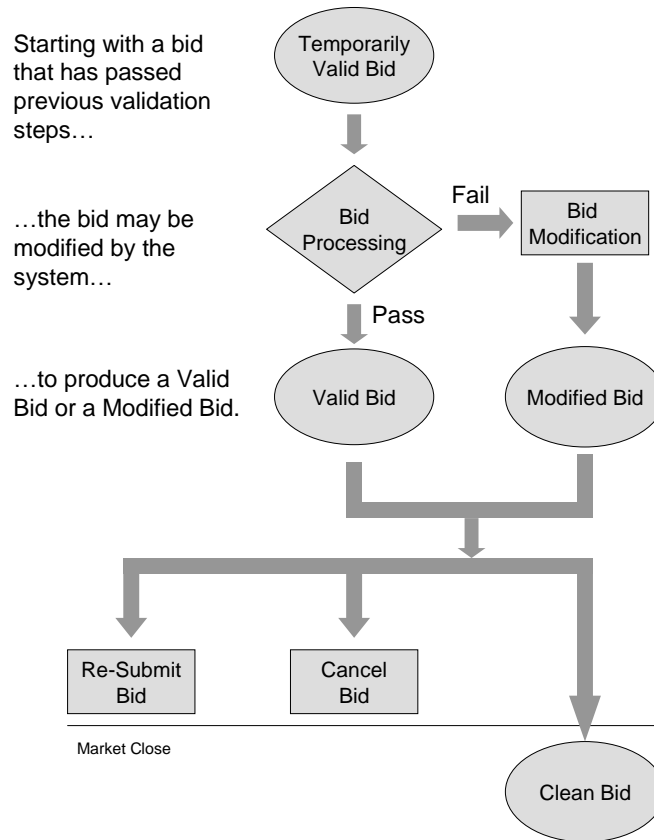
After the Master File has been updated, and the latest Gas Price Index and Commitment Cost adders have been received all “conditional” bids are re-validated via a process very similar to what we’ve seen previously, as illustrated in Figure 4.

Figure 4: Bid Validation (After Master File Update)



Also, after the Master File is updated, the Bid Processing steps are repeated, this time to produce either a Valid Bid or a Modified Bid.

Figure 5: Day Ahead Processing (After Master File Update)



As the illustration shows, this process is quite similar to the processing step that occurs before Master File update. Again, the system can either:

- Accept the bid as-is.
- Modify the bid.

This time, the bid is given a new title, either MF Inserted, Valid Bid or Modified Bid; any reference to “conditional” is gone, as the bid has now been processed with the Master File data that will be in use on the day for which the bid applies.

As in the prior case, the SC can view the bid. As before, the SC may:

- Re-submit the bid, in which case all validation steps and other bid processing are repeated.
- Cancel the bid.



- Allow the bid to stand.

As in all previous processing, if the operator re-submits or cancels the bid, it is retained in the system database but will not be processed further. It may however, be viewed by the SC and possibly used as the basis for future bids.

Handling of Real-Time Market bids is quite similar to what was described earlier for day-ahead. The major difference derives from the fact that Real-Time bids are not submitted days before the target market period; therefore there is no requirement to process the bid before Master File Update and again after. However there are changes to Commitment Cost data for resources that are using a Proxy Cost option, and once the newest cost data is received for the next trading day, all Real-Time bids are revalidated using the most recent data to determine the correct cost. (Note that flowcharts for the complete Day Ahead and Real-Time processing flow are included in Appendix B.)

In some cases, for certain generating resources, an SC may be required to bid in the full range of available capacity for that resource on a daily basis to the CAISO. If the SC fails to enter a market accepted bid for the resource, the system will create a bid on the SC's behalf. Such a bid will be created after market close (to avoid conflicting with any bid that the SC may enter) and will be based upon data in the Master File and the Resource Adequacy obligation data. This type of bid is called a Generated Bid. The relevant SC may view these bids, but since they are generated after market close, the SC may not modify them.

Trades

For a tutorial on Trades please use the link below: which is located on the Participate page under Application Access.

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

Trade Tutorial -- note that Trade processing has not changed since the Market Redesign and Technology Upgrade (MRTU) was introduced.

http://www.caiso.com/Documents/SIBRInter-SCTrades_IST_Tutorial.pdf

1.2.2 Practice

In the last several pages, we have discussed how bids and a reference to how trades are validated and processed by SIBR. In the following chapter, we'll cover in general terms, the practical aspects of accessing the system, entering, submitting, and managing bids. The goal here is to understand the basic principles and processes – later chapters will address particulars such as which buttons to push and when.

Basic Display Layout **IMPORTANT**

The SIBR UI will be supported by the Edge browser and Chrome is also available. It was initially designed with Internet Explorer and migrated to Edge with regression testing for that browser.

Application Specific Menu

As stated previously, this document is concerned with entry, submission, and management of bids from the Bids tab. In this case, the Application-Specific menu will contain the following items based on Market Type and date selected:

- **Bid summary** This screen is used to submit or remove bids for the respective market. It is also used to view status of bids that have been submitted or are available for submission. There are sub-tabs below the Bid summary to view details on the selected bid(s).

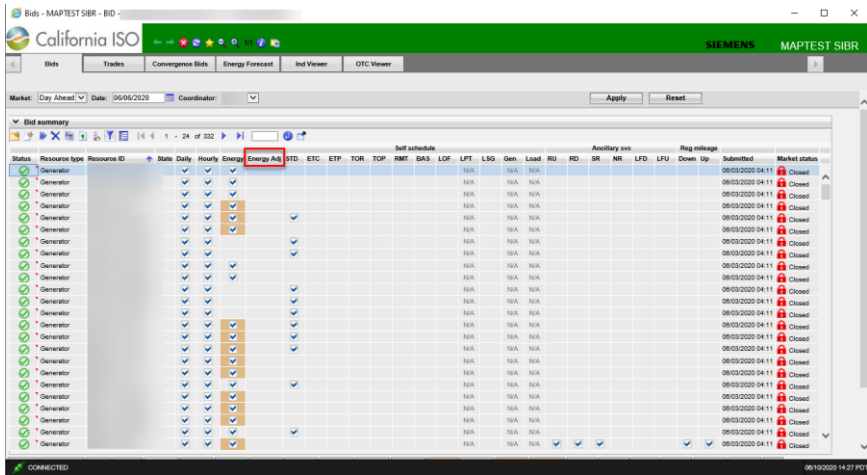
NOTE: Data available for display is subject to the Resource Type, Market Type and or Product Type, for example you will not see an End Of Hour State of Charge (EOHSOC) in the Hourly sub tab for a Generator since it only applies to a Non-generating resource (NGR). You will also not see the EOHSOC in the Hourly sub tab when in the Day-Ahead Display for an NGR since it only applies to the Real Time.

Daily: This screen is used to enter (edit) those bid parameters that do not change for the entire trade day. Start-Up, Minimum Load and Transition Costs can be re-bid into the Real-Time Market.

Hourly: This screen is used to enter (edit) those bid parameters that may be different for each hour of the market period.

Product types: (Energy, Self-Schedules and Ancillary Services)

New product -Energy Adj (Default Energy Curve adjustment). CCDEBE. (*New Product functionality is covered in section 3.2.3 'Product Component Fuctionality*).



Status	Resource type	Resource ID	State	Daily	Hourly	Energy	Energy Adj	STD	ETC	ETP	TOR	TOP	RMC	BAS	LOF	LFT	LSG	Gen	Load	RZ	RD	SR	NR	LFD	LJU	Down Up	Ring mileage	Submitted	Market status
✔	Generator		▼	▼	▼	▼	▼										N/A	N/A	N/A								06/03/2020 04:11	✔	Closed
✔	Generator		▼	▼	▼	▼	▼										N/A	N/A	N/A								06/03/2020 04:11	✔	Closed
✔	Generator		▼	▼	▼	▼	▼										N/A	N/A	N/A								06/03/2020 04:11	✔	Closed
✔	Generator		▼	▼	▼	▼	▼										N/A	N/A	N/A								06/03/2020 04:11	✔	Closed
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✔	Generator		▼	▼	▼	▼	▼										N/A	N/A	N/A								06/03/2020 04:11	✔	Closed

Figure 6 Display Layout Bids

Other Application-Specific menu tabs contain will contain the following items and displays for each tab that is on the application:

- **Trades:** An SC can create Trades for DAM and RTM
 - Manage DAM Trades
 - APN
 - IST Physical
 - Manage RTM Trades
 - IST Physical
 - APN
 - UCT (Unit Contingent Trade)
 - AST (Ancillary Service Trade – Spin/Non-Spin/Regulation Up/Dn)

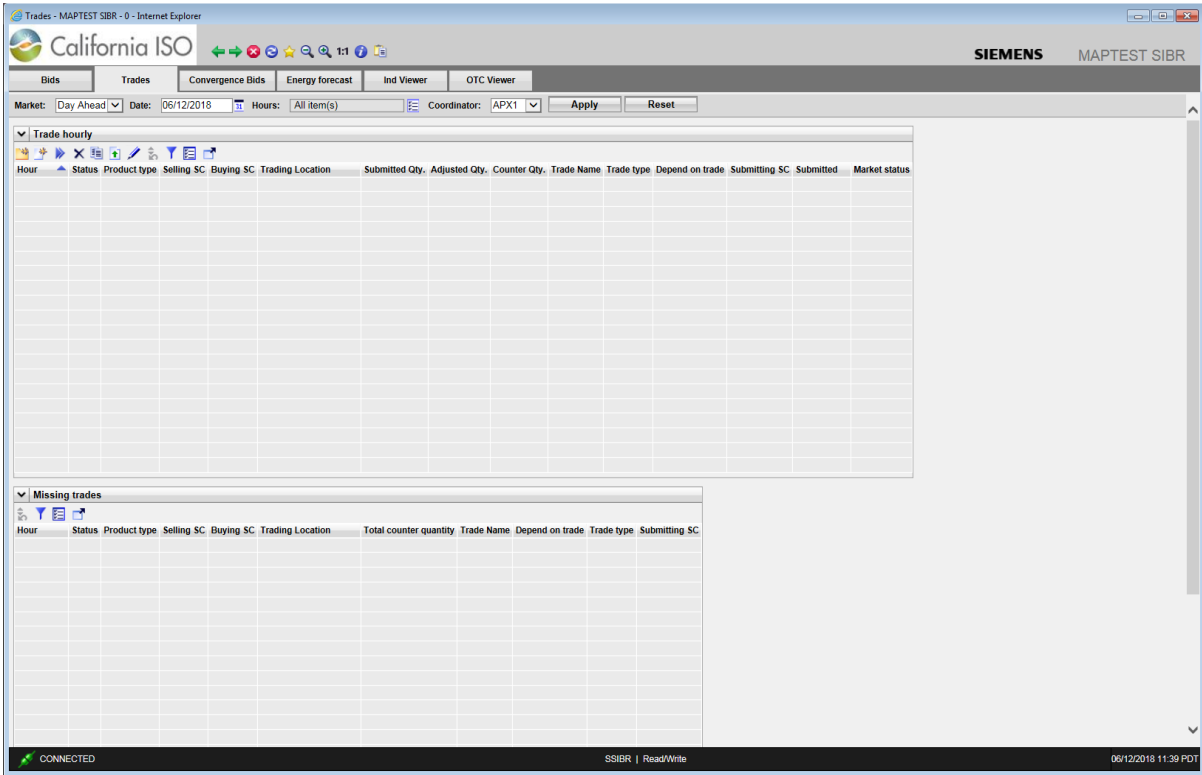


Figure 7: Display Layout Trades

- **Convergence Bids:** Screens accessible through this menu item are used to create, submit, and manage Convergence bids (also known as Virtual Bids) for a day-ahead market.

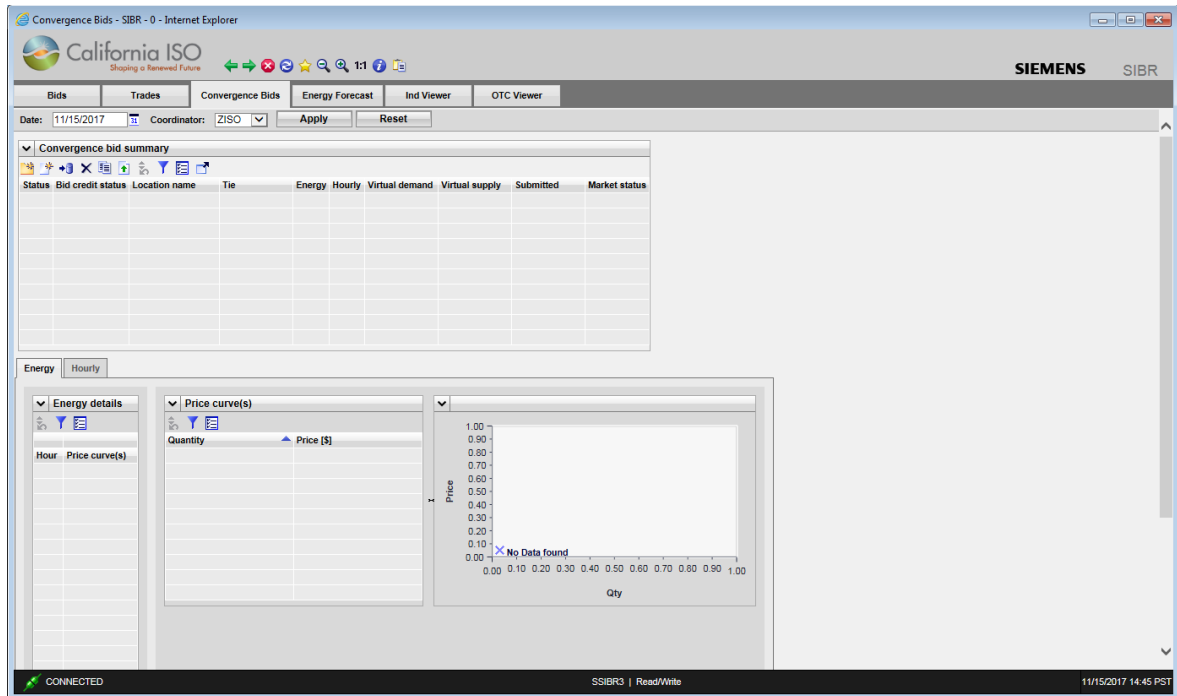


Figure 8 Display Layout Convergence Bids

- **Energy Forecast:** Screens accessible through this menu item are used to submit Energy Forecasts for Variable Energy Resources (VER) and Load Serving Generators (LSG).

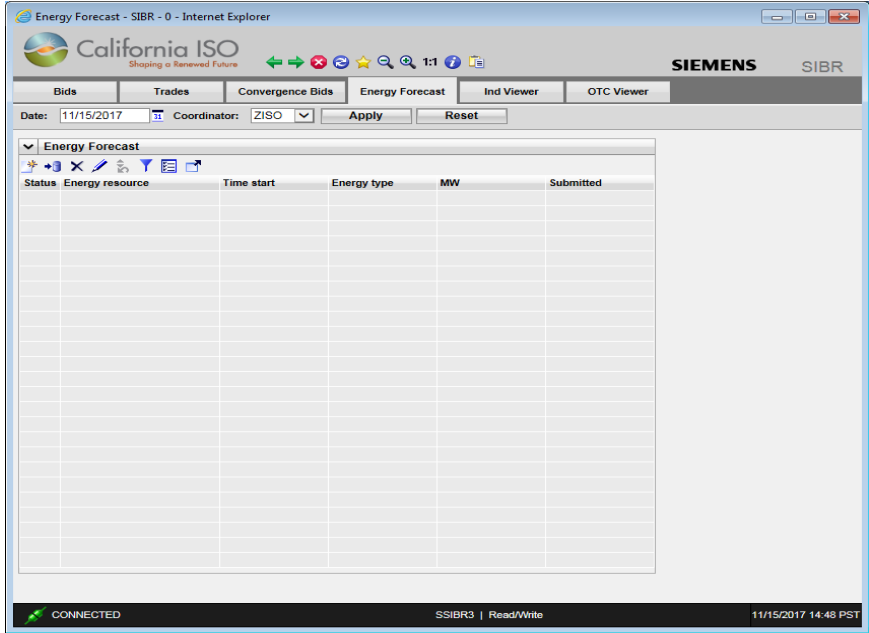


Figure 9 Display Layout Energy Forecast

- **Ind Viewer:** An SC can check imbalances on select resources that are in either the Day Ahead or Real Time Markets for balancing (ETC/TOR/WHL) and or priority (ETC/TOR).

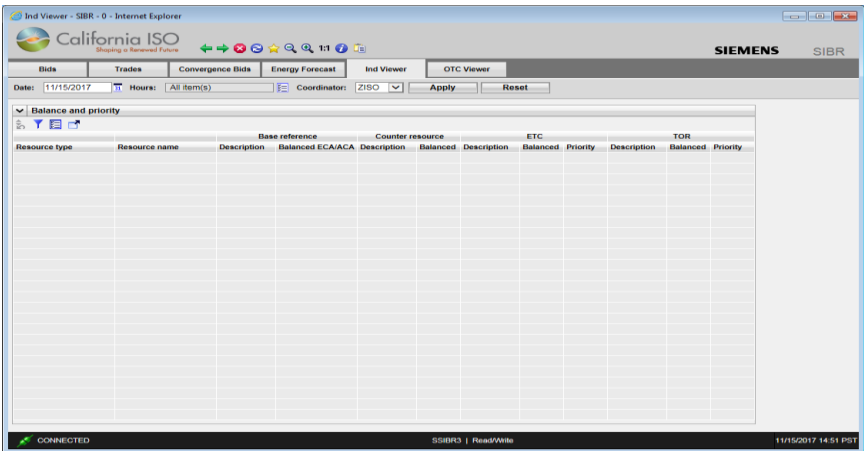


Figure 10 Display Layout Ind Viewer



- **OTC Viewer:** An SC can view by Interchange for a given date the Import and Export Limits received in SIBR and if there is an 'Isolated Tie Condition'. (condition when 0 limit exist)

The screenshot shows the OTC Viewer application window. At the top, there is a navigation bar with tabs for Bids, Trades, Convergence Bids, Energy forecast, Ind Viewer, and OTC Viewer. Below the navigation bar, there are input fields for Date (06/12/2018), Hours (All item(s)), and Interchange (1 item(s)), along with Apply and Reset buttons. The main content area displays a table titled 'Limit values' with the following columns: Hour, Interchange name, Import limit, Export limit, Cutoff import limit, Cutoff export limit, and Isolated tie condition. The table contains 24 rows of data, all for the interchange 'PALOVRDE_ITC', with consistent values for limits and 'N' for the isolated tie condition. The status bar at the bottom indicates 'CONNECTED', 'SSIBR | Read/Write', and the timestamp '06/12/2018 11:41 PDT'.

Hour	Interchange name	Import limit	Export limit	Cutoff import limit	Cutoff export limit	Isolated tie condition
01h	PALOVRDE_ITC	3628	3628	3628	3628	N
02h	PALOVRDE_ITC	3628	3628	3628	3628	N
03h	PALOVRDE_ITC	3628	3628	3628	3628	N
04h	PALOVRDE_ITC	3628	3628	3628	3628	N
05h	PALOVRDE_ITC	3628	3628	3628	3628	N
06h	PALOVRDE_ITC	3628	3628	3628	3628	N
07h	PALOVRDE_ITC	3628	3628	3628	3628	N
08h	PALOVRDE_ITC	3628	3628	3628	3628	N
09h	PALOVRDE_ITC	3628	3628	3628	3628	N
10h	PALOVRDE_ITC	3628	3628	3628	3628	N
11h	PALOVRDE_ITC	3628	3628	3628	3628	N
12h	PALOVRDE_ITC	3628	3628	3628	3628	N
13h	PALOVRDE_ITC	3628	3628	3628	3628	N
14h	PALOVRDE_ITC	3628	3628	3628	3628	N
15h	PALOVRDE_ITC	3628	3628	3628	3628	N
16h	PALOVRDE_ITC	3628	3628	3628	3628	N
17h	PALOVRDE_ITC	3628	3628	3628	3628	N
18h	PALOVRDE_ITC	3628	3628	3628	3628	N
19h	PALOVRDE_ITC	3628	3628	3628	3628	N
20h	PALOVRDE_ITC	3628	3628	3628	3628	N
21h	PALOVRDE_ITC	3628	3628	3628	3628	N
22h	PALOVRDE_ITC	3628	3628	3628	3628	N
23h	PALOVRDE_ITC	3628	3628	3628	3628	N
24h	PALOVRDE_ITC	3628	3628	3628	3628	N

Figure 11 Display Layout OTC Viewer



- **Portfolios:** An SC can create bids (either from scratch or from another bid) and save them for future use. This capability is accessed from the Portfolio menu items.

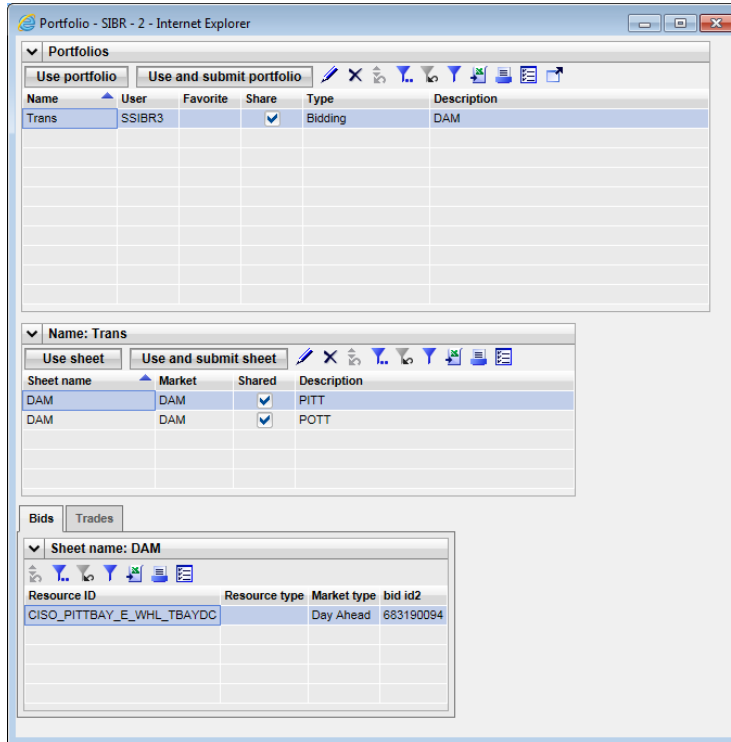


Figure 12 Display Layout Portfolio Management

More About Bids and Bid Contents

Components: A bid will contain up to three types of components:

- **Daily Bid Components:** These are components that are set for the entire trade day for the resource designated in the bid. They are entered either into the Day-Ahead or Real-Time Market. Examples of these types of bid components are Start Up Curves, Minimum Load Costs, Default Load Adjustment, Default Start Up Adjustment, State Transition (MSG only), Energy Limits, and Charge Limits (NGR only). Energy Limits and Charge Limits are only available in the DAM, the Startup and Minimum Load costs may be re-bid into Real-Time as long as the resource was not committed in the DAM.
- **Product Bid Components:** These components may be different for each hour of the market period of the bid in both DAM and RTM. An example of these types of bid components is energy bid curves as well as quantities and prices designated for Ancillary Services bid components and RUC. RUC is only available in the DAM.
- **Miscellaneous Bid Components:** These data components may differ between market types for the Day Ahead and Real-Time markets. This data is for Counter Resource for Wheeling, GHG components, Capacity Limits and Dispatch Options. Dispatch Options are only available in RTM.

Edit / Created

The system database provides a “scratchpad” area for bids while they are being prepared. Once bid data have been entered, clicking the Update button on the details page causes data to be saved to the database. A bid is not submitted for consideration by the system until an authorized SC formally submits the bid from the Summary screen. One of the benefits of this arrangement is that it is not necessary to enter a bid from start to finish in one session. Portions may be entered, the (incomplete) bid saved, completed at a future time (possibly by a different person), and ultimately submitted from the Summary screen.

Bid data entry pages allow the SC to enter data for multiple bids on the same page. For example, if an SC is responsible for bidding three generators, it is possible to view all three at the same time in the bid summary, more importantly for data entry purposes, to use the page’s input accelerators to minimize the amount of typing required within the details area.



2 Common UI Features & Navigation

There are a number of elements that appear on all (or many) GUI pages. We've already talked about some of them:

- Portal Menu
- Application Menu
- Logout and Help links.
- Application Content Area.

In this chapter, we'll talk about other common display elements and concepts.

Bids are submitted for a market. There are two market types:

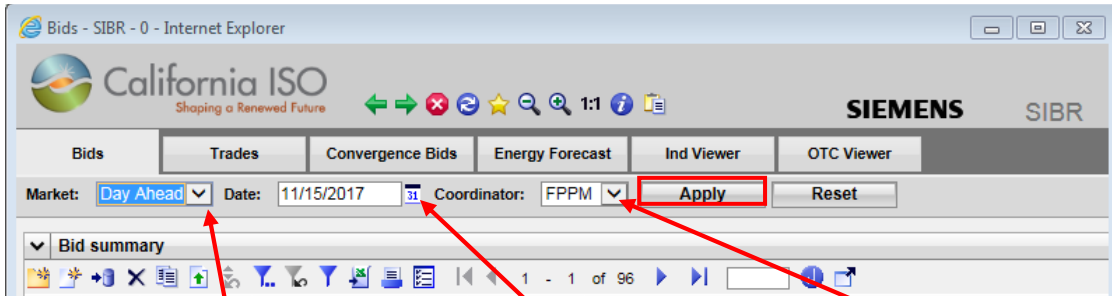
- A Day-Ahead Market is basically one 24-hour² period. Bids for a Day-Ahead market may be submitted up to 7 days in advance of the target market date. Bids may be submitted until the "market close" event for the target market date (currently 10:00 A.M.) on the previous day.
- A Real-Time Market consists of one hour. Real-Time Market bids (for a particular trade day) are accepted beginning when the Day-Ahead results are published (usually prior to 1:00 p.m. the previous day) until the real-time market for the designate hour closes. (this is T-75, i.e. HE6 will close at 3:45a.m.)

The UI screens used to enter Day-Ahead and Hour-Ahead bids are quite similar, although there are some significant differences. This is discussed in Chapter 3.

² There is one 23-hour (no HE3) short day moving from PST to PDT and one 25-hour (has HE2* for second HE2) long day moving from PDT to PST. This is for daylight savings time adjustments.

2.1 Application – Specific Menu

The SIBR application menu shown in figure 13 below allows for different screens to be accessed by selecting a specific tab depending on the needs to view data for a given Market Type, Date, Coordinator.



Selecting Market drop down for Market type:

Selecting Calendar to change date:

Available SC based on certificate logged in.

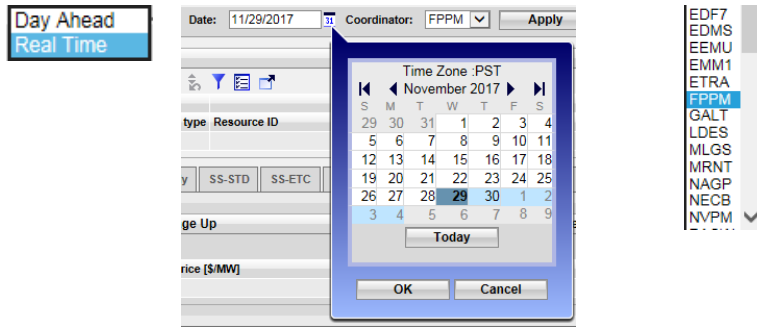


Figure 13 Application Header display

The SIBR application navigation icons shown in figure 14 below will assist in viewing data. Clicking on the star can also be used to Revert to original to set the display back to default and remove any In-line or sort filters.

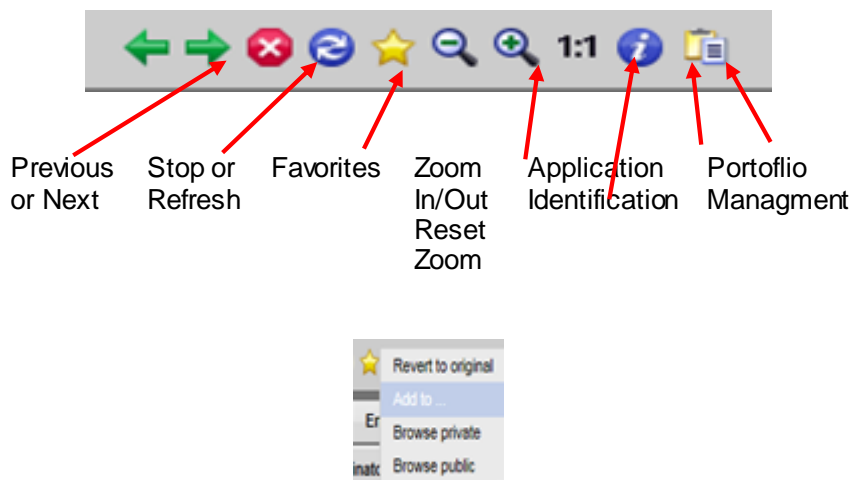


Figure 14 Navigation Icons

2.2 Application Content Area

A Scheduling coordinator will be concerned mostly with what is in the portion of application labeled as “Application Content Area”.

For most Bid Management displays, there are three basic components in the Application Content Area, as illustrated in figure 15 on the next page. These are:

- **Filter Pane:** The filter pane is present on most SIBR displays. It contains filters that allow the user to control the information displayed on the data grid portion of the display. The filter pane is always at the upper edge of the Application Content Area.
- There is also an ‘in-line’ filter option for better granularity. Filters will be cached based on login, if a filter is applied and the user logs out, the next time the user logs in the filter will still be applied. The Date filter on login will default to the current date.
- **Data Grid(s):** Below the filter pane is at least one data grid. Bid data are entered, edited, and viewed in the data grid. Some displays may have additional data grids showing the details of the product in the bid.
 - There is also an adjust column tool to better manage the Data Grid.

- Message Bar: This is at the very bottom of the Application Content Area. It is used to advise the user of various events, errors, etc. This area grows and shrinks vertically to accommodate the message(s) that need to be shown.



Filter Pane →

Data Grid with Details →

Message Bar →

In-Line Filter →

Adjust Column →

Removed columns results in smaller Data Grid →

In-line applied →

Figure 15

2.2.1 Filter Pane

Filters in the Filter Pane allow the user to customize (or select) what is shown on the display. The SIBR UI employs a small number of filter types; these are described in the following paragraphs.

NOTE: When moving from one tab to another the In-line filter must be re-initialized by clicking it off and then back on.

Header Filters for Market, Date and Coordinator when changed are applied when the 'Apply' button is clicked. [Figure 13](#) in the previous section illustrates each component.

In-Line Filters: In-line filtering can be applied to each column on the display, this can be applied by clicking on the blue filter button below the header filters as illustrated in figure 16 below. When the In-Line filter is applied there are a couple options to use to filter the data depending on the column chosen. If there is an In-Line filter applied the filter will be orange, to remove the filter click on the orange filter or from star icon select Revert to original.

NOTE: If the display throws an error on retrieving data use the STAR icon and Revert to Original, this will clear all filter options and restore the display.

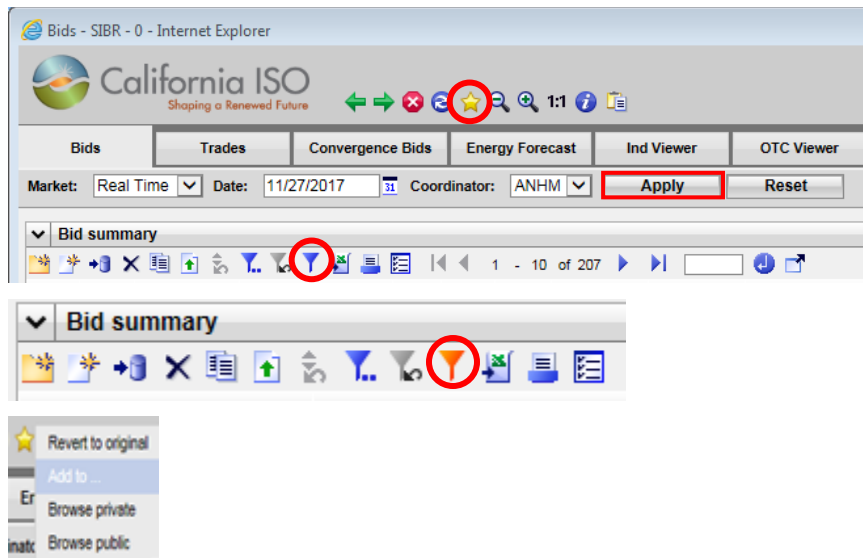


Figure 16 In-line filter on or off.



When the In-Line filter is select the first row will be open for setting a filter as shown in figure 17 below, the user can narrow the viewable data by applying filters in one or more columns. Once data is entered into a column to filter the filter will automatically be applied by moving the mouse out of the filter.

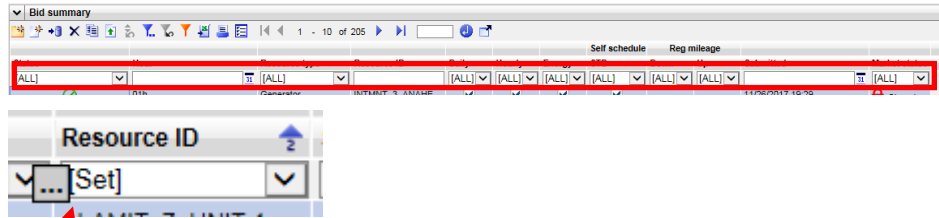


Figure 17 In-line filter first column.

Clicking on the '...' icon when using the In-Line filter selection supports multi-select options that can be selected. From a drop down items these will show available criteria to select. Using the In-Line filter will narrow results displayed in the viewable data.

In-Line Drop Down

Figure 18 shows how to apply the In-Line filter for the Status column using the drop down option.

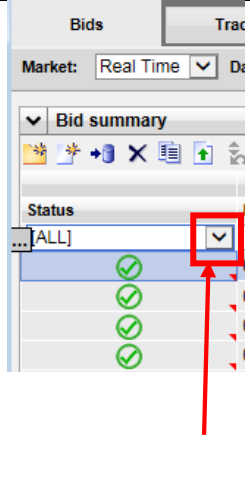
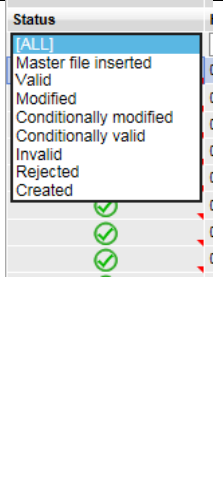
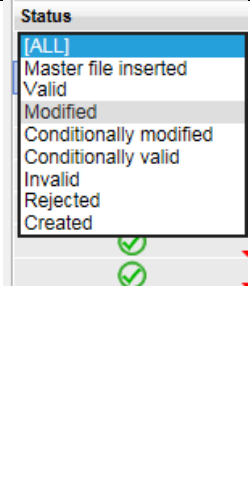
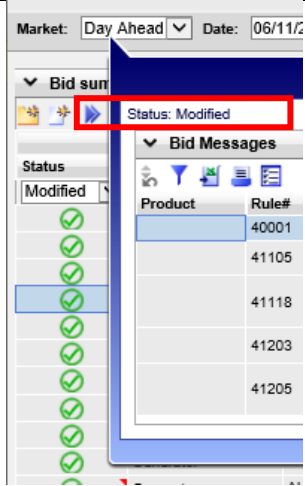
			
<p>Click on the down arrow to view filter criteria.</p>	<p>Available criteria will display.</p>	<p>Select a Status, the filter will refresh in a few seconds.</p>	<p>Data grid now shows all Modified bids. Icon indicates status, clicking in the column will display rules and status.</p>

Figure 18 In-Line filter Drop Down for Status.

The drop down to show available criteria can be used on the Status, Resource Type, Product, and Market Status columns as shown in figure 19 below.

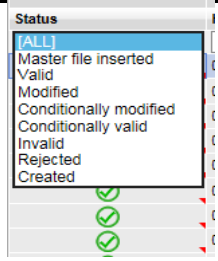
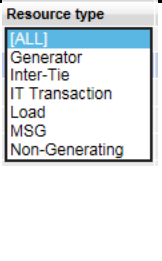
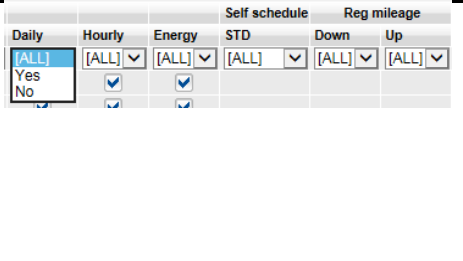
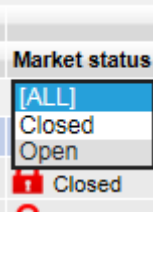
			
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Figure 19 In-Line filter Drop Downs.



In-Line Multi-Select

To select multiple items based on available criteria, the user must move the mouse into the top filter column that is blank and select the icon with three dots to open a separate window to add the search criteria shown below in figure 20.

<p>Click on the icon with 3 dots when mouse is in the filter column.</p>	<p>Available criteria will display and the user can select multiple using CTRL or SHIFT keys</p>	<p>Once selected click on OK to apply.</p>	<p>Selected Status will display associated icon. Clicking in cell for rules fired shows status.</p>

Figure 20 Multi-Select use.



Date and Hour Select

Another filter type allows the user to select a date (or a date and a time).

Commonly a default date is shown; some logical date is chosen – typically today’s date (or for bid entry screens, the next possible date for which bids may be entered). There are two ways to enter data into this type of filter.

1. Click in the box and enter the data in the same format it is displayed (e.g., for a date: MM/DD/YYYY).
2. Click on the calendar icon to the right of the box. This exposes a calendar like that shown in figure 21. Click on the desired date – select OK - the window closes and the selected date appear in the box. The >> and << icons on the calendar may be used to navigate to the next and previous month. The **Today** link at the bottom of the calendar selects today’s date. Make sure the date is correct, it can change if moving from tab to tab or Market type.

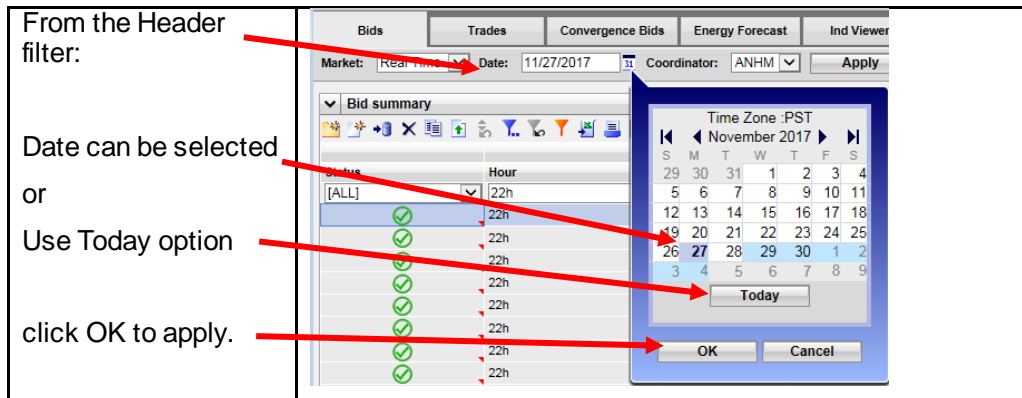


Figure 21 Date Select Header



There are three ways to enter data to select the hour within the Real Time market on the In-Line filter shown in Figure 22.

1. Click the calendar icon in the Hour column and enter the hour in the Date box when Exact Match is selected then click OK.
2. Use the Hour window to type in the hour XX:XX then click OK
3. Enter the begin hour in the From box and the end hour in the To box when Date Range is selected then click OK.

<p>In the In-Line filter: Use exact match Or Hour window Click OK to apply.</p>	
<p>When using Hour range, make sure date is correct. click on From and you can type in the Hour using xxh format. Then click in To and apply xxh format for the range. Click OK.</p>	

Figure 22 Hour Select In-Line



2.2.2 Data Grid

The most noticeable and largest component of most displays is the data grid; for tabular displays, the data grid occupies the majority of the Application content area. It is possible that a page may have more than one data grid. **Each data grid can also be sized to show more or less rows.** It is also possible that the content area may contain one or more charts in addition to the data grid(s), and it may also contain various control elements like buttons, checkboxes, etc. Figure 23 shows an example.

Data Grid

Bid summary
(default 24 rows)

Detail tabs.

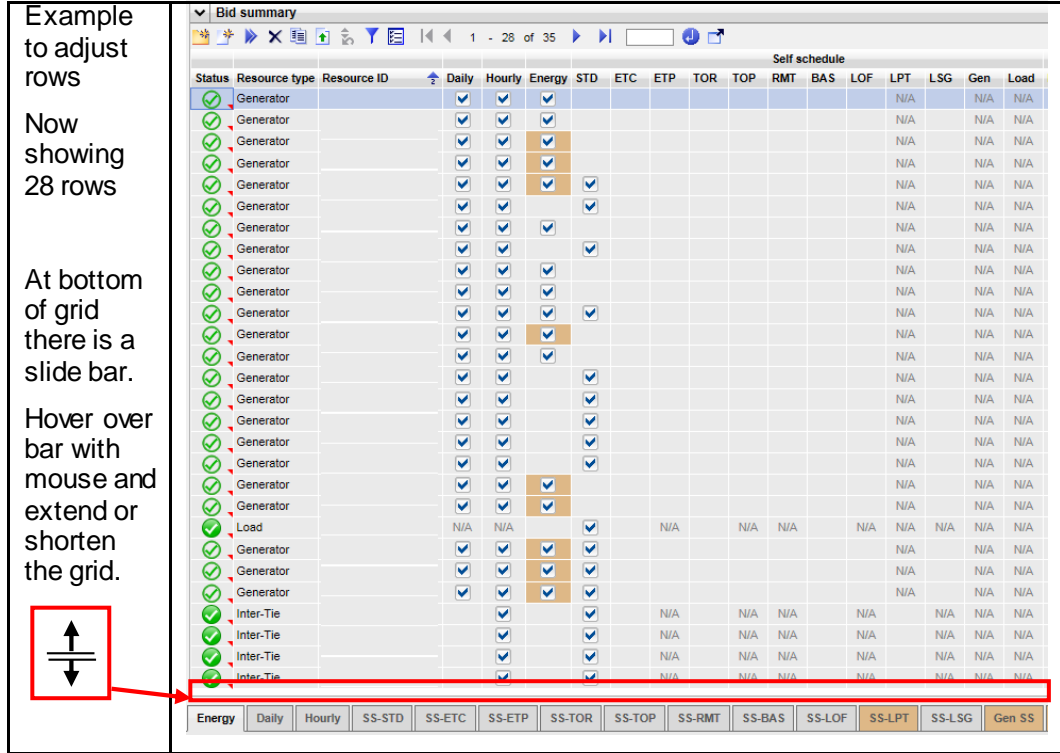


Example to adjust rows to show 28 rows

Now showing 28 rows

At bottom of grid there is a slide bar.

Hover over bar with mouse and extend or shorten the grid.



The image shows a software interface with a table titled "Bid summary". The table has columns for "Status", "Resource type", "Resource ID", and various scheduling parameters like "Daily", "Hourly", "Energy", "STD", "ETC", "ETP", "TOR", "TOP", "RMT", "BAS", "LOF", "LPT", "LSG", "Gen", and "Load". The table contains multiple rows, most labeled "Generator". At the bottom of the table, there is a scroll bar. A red box highlights a legend icon consisting of a vertical double-headed arrow, with a red arrow pointing from the scroll bar to it. The text on the left explains that this is used to adjust the number of rows shown.

Figure 23 Data Grid Example



Controls on Data Grid

A number of icons may be included at the upper left corner of the data grid. Figure 24 describes the buttons that are available on the grid.

	Collapse / Restore grid. This button collapses (restores) a tabular grid. When a grid is collapsed, the title of the grid remains visible.
	Add to Portfolio. Highlighted bids will be saved to a Portfolio.
	Create Bid. Will open a separate window allowing user to specify the date resource type, product type, hours(RTM), coordinator and resource.
	Submit Bids. Bids in the rows that are highlighted on the data grid will be submitted.
	Remove bids. Bids in the rows that are highlighted on the data grid will be removed.
	Copy Bids. Copies highlighted bids and makes them viewable as a Created bid for editing.
	Upload Bids. Will allow user to select a file for upload to the system. Files must be in xml format and valid based on supported schema design.
	Restore Default Sort. It is possible to change the sort order of the contents of a tabular display by clicking on the title row. Clicking on the Restore Default Sort button restores the sort order to the default, that is, it removes any sorting that has been established by clicking on title rows.
	Filter. Clicking on this button opens the In-Line filter and enables each column to contain filter criteria.
	Export. By clicking on this button, the user may export grid contents (either displayed contents or the entire contents of the database table(s) used to populate the grid) to Microsoft Excel, Microsoft Word, or an XML file.



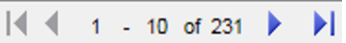


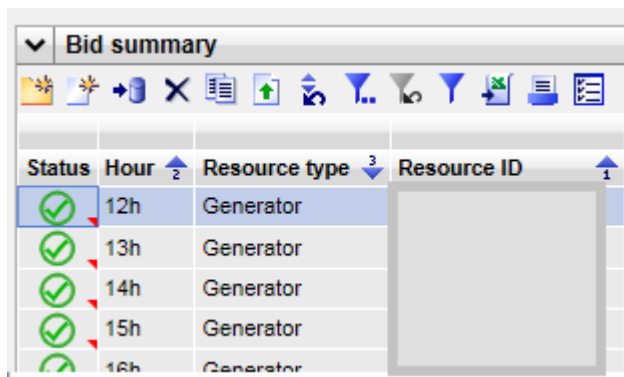
	<p>Print. This button prints the contents of the grid. Note that there is another print button in the “common functions” area of the display. That button prints the contents of the entire display.</p>
	<p>Adjust Columns. Opens a select window allowing the user to specify which columns will populate on the display.</p>
	<p>Page Navigator. Displays count of available data based on filters applied. Allows user to advance to next or previous page, last or first page.</p>
	<p>Go To. Putting in a line number will refresh the display going to the bid that is in that index and displays.</p>
	<p>Pop Out Application. This will open a separate Data Grid and allow additional filtering. Only 1 additional Data Grid will open.</p>

Figure 24 Controls on Data Grid

Sorting Data Grid

The User may change the default sort order by clicking on the title row for a column. For example, in the grid illustrated in figure 25, the user has applied a sort on the ResourceID, the Hour, and the Resource type this changes the sort order of the grid by making the ResourceID column the primary sort key ascending, secondary sort on Hour ascending and a third sort applied to Resource type descending.



Status	Hour	Resource type	Resource ID
✓	12h	Generator	
✓	13h	Generator	
✓	14h	Generator	
✓	15h	Generator	
✓	16h	Generator	

Figure 25 Sort Order

A small triangle appears in the header row to indicate:

- Sort order. The orientation of the triangle (pointing up means ascending, pointing down means descending).
- Key: The small number above or below the triangle indicates which column is the first, second, etc. sort key.

As implied above, sorting may be ascending, descending, or none:

- Clicking once sorts in ascending order.
- Clicking a second time on the same column changes the order to descending.
- Clicking on the same column for a third time removes sorting.








By clicking on the grid's Restore Default Sort button  , all sort keys can be removed and the sort order returned to default.




All sorting functions work the same for all columns that have more than one row.



Status Icon Definition

Below is a legend for desired icon use and definition depending on the type of submission.

ICON	Definition for Bids	
	For market accepted bids with External Bid Status of 'MI' or 'V' Master File Inserted / Valid	Has already processed through rules engine ui_display_flag = 1 and the bid was good with submitted data that matches Master File.
	For market accepted bids with External Bid Status of 'M' Modified	Has already processed through rules engine ui_display_flag = 1 and processing rules added or modified components using Master File data.
	Definition for Virtual Bids (CB)	
	For CB bids with External Bid Status of 'V' and Bid Credit Status 'AP' Valid / Approved	Has already processed through rules engine ui_display_flag = 1 and the bid approved by CTS.
	For CB bids with External Bid Status of 'V' and Bid Credit Status 'PR' or 'PRS' Valid / Pending Request or Pending Response	Has already processed through rules engine ui_display_flag = 1 and no response yet from CTS.
	For market accepted bids with External Bid Status of 'CM' or 'CV' Conditionally Modified / Valid	Has already processed through rules engine ui_display_flag = 1



	For Invalid bids with External Bid Status of 'I'	Has already processed through rules engine ui_display_flag = 1
	For Rejected bids with External Bid Status of 'RJ'	Has already processed through rules engine ui_display_flag = 1
	For edited bids with External Bid Status of 'CR' Created	For when Display Mode is in edited (or all)
	For bids submitted with Status of 'S' or 'RS' Submitted / Recent Submit	For when Display Mode is in edited (or all)
Definition for Trades		
	For Trades with a Trade Status of 'V' Valid	Has already processed through rules engine ui_display_flag = 1 and the bid was good with submitted data that matches Master File.
	For Trades with a Trade Status of 'M' Modified	Has already processed through rules engine ui_display_flag = 1 and processing rules added or modified components using Master File data.
	For Trades with a Trade Status of 'CV' Conditionally Valid	Has already processed through rules engine ui_display_flag = 1
	For Trades with a Trade Status of 'MT' Matched.	Has already processed through rules engine ui_display_flag = 1 and processing rules added or modified components using Master File data.
	For Trades with a Trade Status of 'U' Unmatched.	Has already processed through rules engine ui_display_flag = 1
	For Invalid Trades with Trades Status of 'I'	Has already processed through rules engine ui_display_flag = 1
	For Rejected trades with Trade Status of 'RJ'	Has already processed through rules engine ui_display_flag = 1
	For edited trades with Trade Status of 'CR' Created	For when Display Mode is in edited (or all)
	For trades submitted with Status of 'S' or 'RS' Submitted / Recent Submit	For when Display Mode is in edited (or all)
Definition for Energy Forecast		
	For Energy Forecast with Status of 'V' Valid	Energy Forecast will either be Valid or Invalid or rejected. EF will have nothing as modified or conditional.
	For Invalid Energy Forecast with Status of 'I'	Has already processed through rules engine ui_display_flag = 1
	For Rejected trades with Trade Status of 'RJ'	Has already processed through rules engine ui_display_flag = 1

	For edited trades with Trade Status of 'CR' Created	For when Display Mode is in edited (or all)
	For trades submitted with Status of 'S' or 'RS' Submitted / Recent Submit	For when Display Mode is in edited (or all)



Scrolling the Grid

Often the data grid of a tabular display is not large enough to display all the data in the corresponding columns of the database. In such a case, the grid will show a scroll bar to the right for vertical movement and on the bottom for horizontal movement illustrated in figure 26 below.

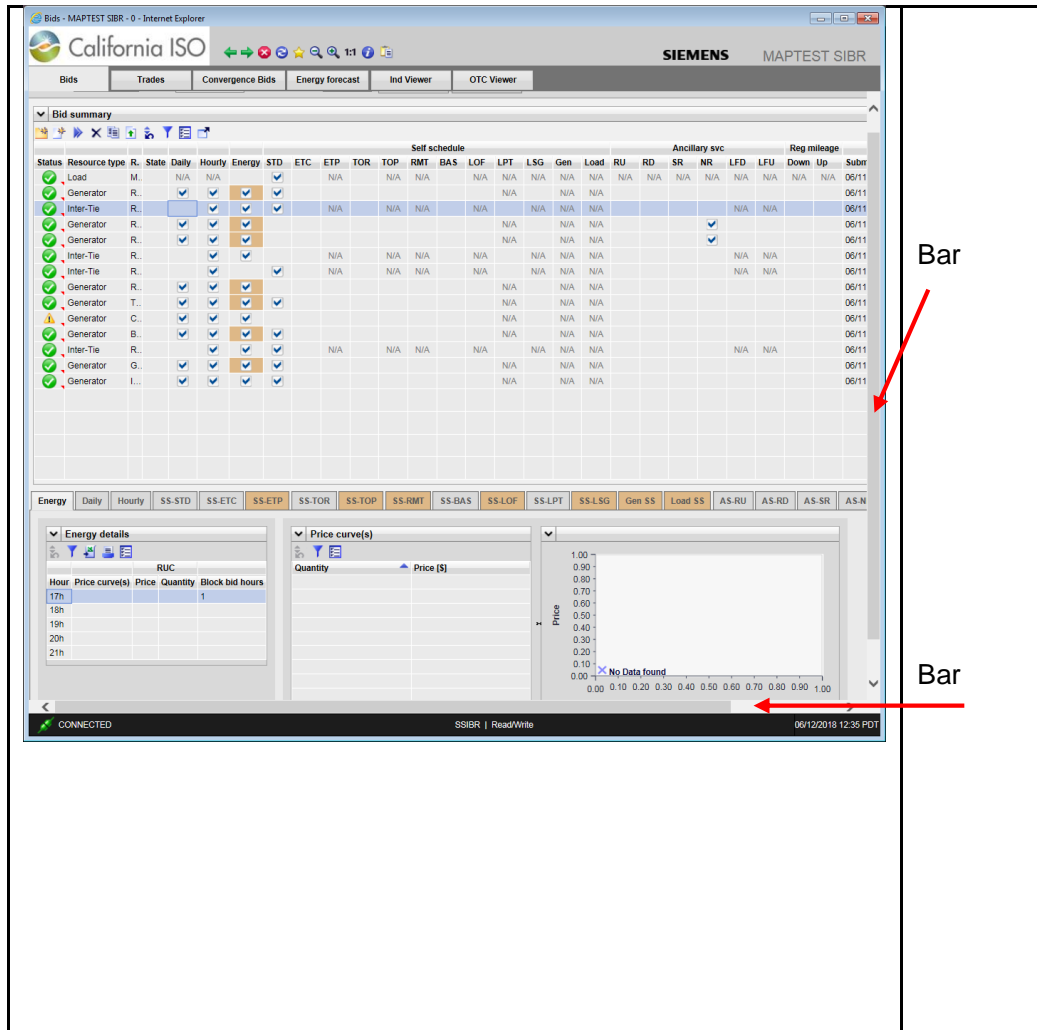


Figure 26 Scroll Bar

2.2.3 Message Area

The area immediately below the grid is used for messages. This area expands and shrinks as necessary to accommodate any messages that the application believes are of interest to the user. Figure 27 illustrates The messages that appear in this area are related to actions that the user has recently taken (e.g., applying a filter, incorrectly typing an alphabetic character in a numeric field, clicking the Save button, etc

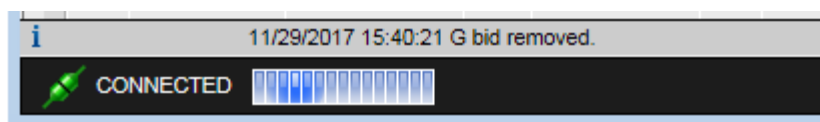


Figure 27 Message Area

2.2.4 Input Accelerators

There are two distinct methods of input acceleration on data tables for bids in a created state for editing. Both methods allow you to quickly and easily replicate duplicate data on a table similar to using a spreadsheet.

This is accomplished either by using the right-click menu when you are in the data grid ore you can use the CTRL and SHIFT keys in selecting data as well as using the CTRL+ C for copy and CTRL+V for paste.

- **Right-Click Menu:** This menu gives you a list of commands associated with actions to perform on the entered data. Each of the functions is described in detail below.

Copy: Copies the contents of the selected cell or row

Set all values in column to this value: Sets the value in all rows in the grid. This will over-write existing values.

Paste: Pastes the copied row into all the rows up or down through the selected row

Paste with Operation: Pastes the copied cell into the currently selected cell but will use an operation (Muiltply, Add, Divide, or Subtract)

- Make sure to select Update after applying changes to save them or to select Cancel to remove them.



The below illustration in Figure 28 shows the Right Click Menu from within the Energy details tab of an edited bid. The Price curve(s) column displays the price curve ID for hours in a DAM bid. The row for HE17 is selected and using the right click and selecting Copy.

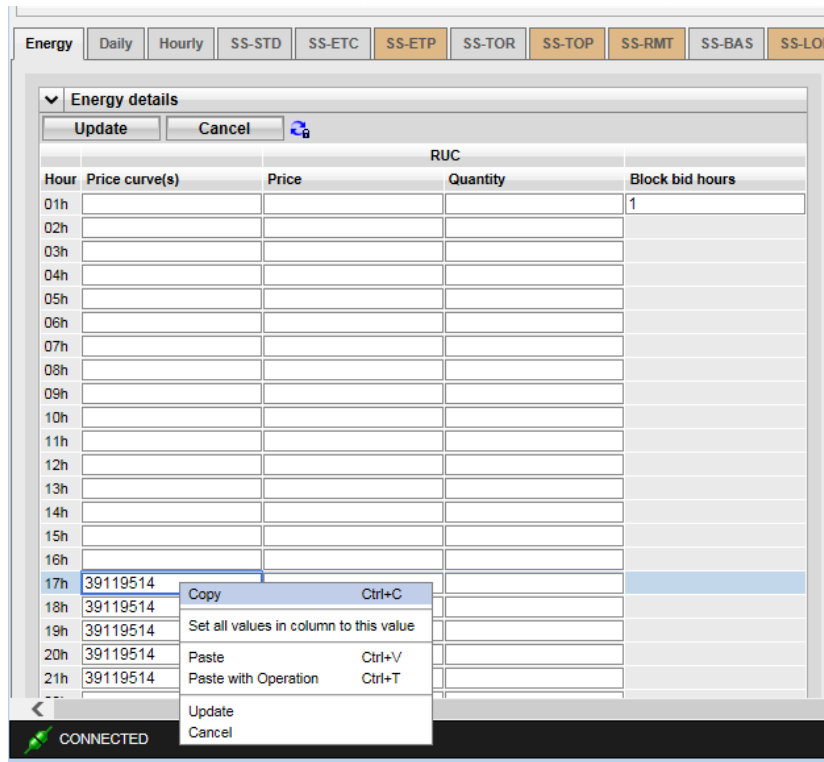


Figure 28 Right Click Menu



Once data has been selected you can select one or more rows to paste into either by moving the mouse to select the column for example in row 12 and select Paste will copy the value into that cell. If setting all values, select the Set all values in column to the this value. This is illustrated in Figure 29 below.

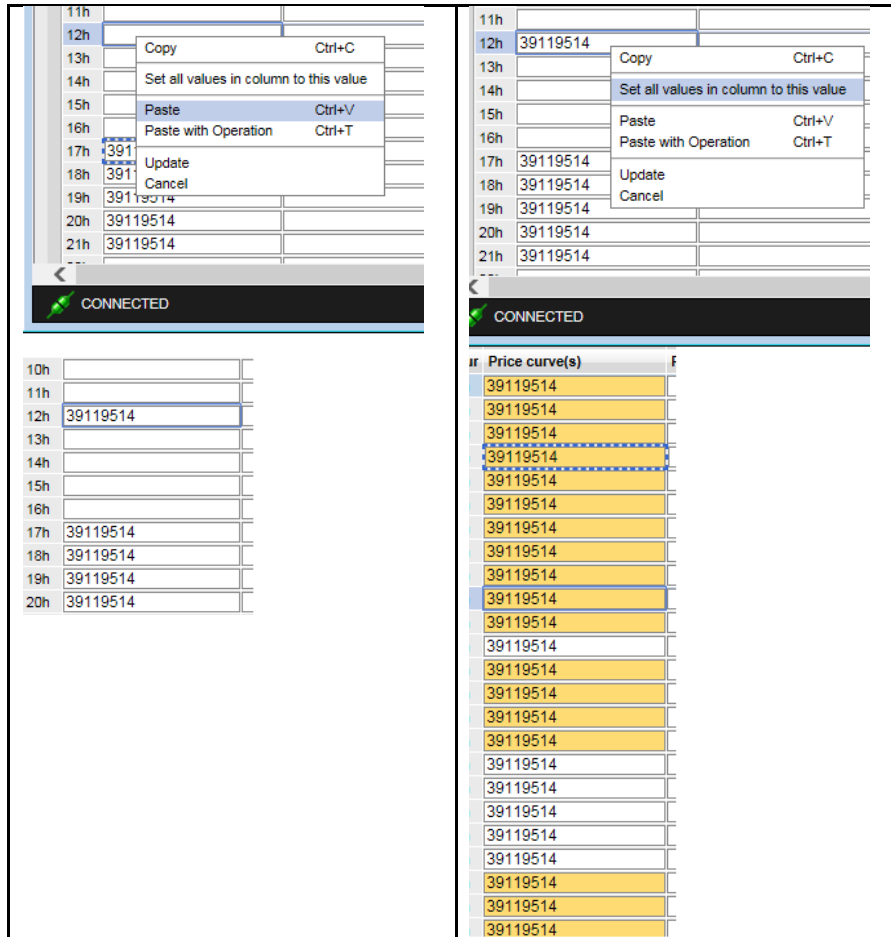


Figure 29 Paste row



To copy into a subset of available columns you can select a row, then use the CTRL key and mouse click into another row or more than one row to highlight the rows then when Paste is applied it will copy into those rows shown below in Figure 30.

Hour	Price curve(s)		Hour	Price curve(s)
01h			01h	
02h			02h	
03h			03h	
04h			04h	
05h			05h	
06h			06h	
07h			07h	
08h			08h	
09h			09h	
10h			10h	
11h			11h	
12h	39119514		12h	39119514
13h			13h	
14h			14h	
15h			15h	
16h			16h	
17h	39119514		17h	39119514
18h	39119514		18h	39119514
19h	39119514		19h	39119514
20h	39119514		20h	39119514
21h	39119514		21h	39119514
22h			22h	
23h			23h	
24h			24h	

Using CTRL while clicking into open cells then right click and Paste or CTRL+V.	Clicking on row 1 then use SHIFT and click in row 6 then right click and Paste or CTRL+V.
---	---

Figure 30 Sub-set of rows to Paste

For the Paste with Operation, this would be most useful when dealing with curve data for bid in MW or price. This will use the copied value and multiply or divide, add or subtract that value as shown in figure 31 on the next page.

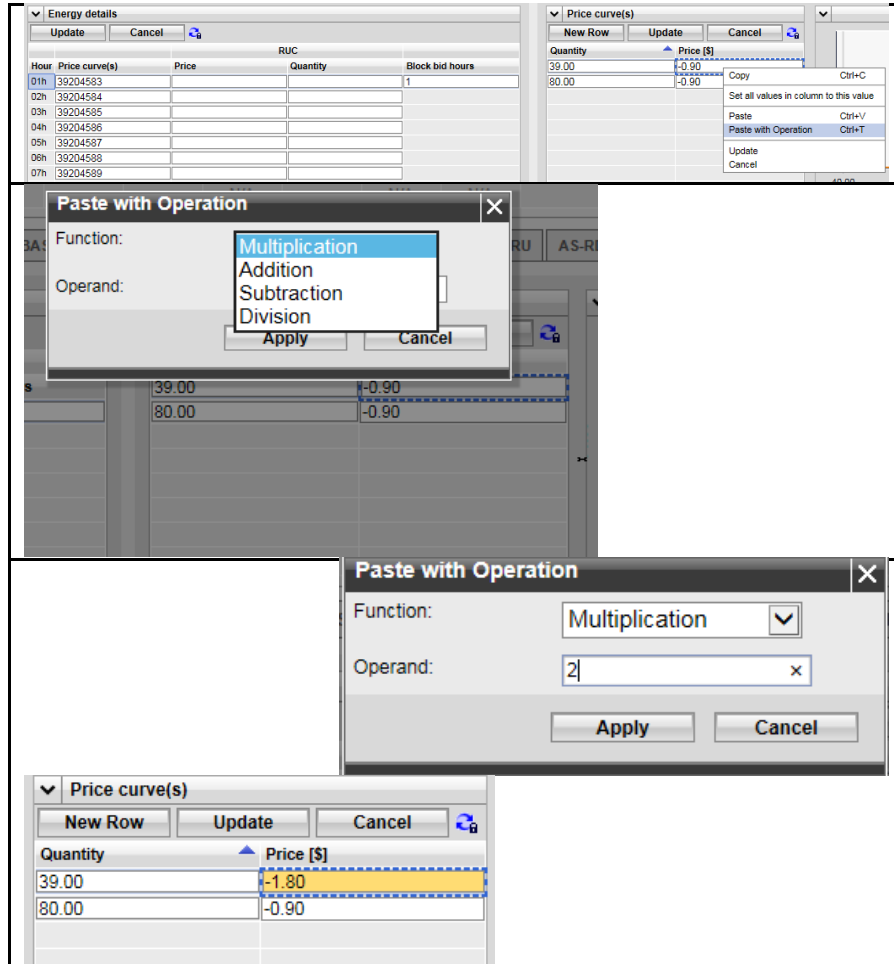


Figure 31 Paste with Operation

Using a price curve for HE1 and then copy the -0.90 using the Paste with Operation of Multiplication and providing a value of 2 pastes in the value of -1.80.

2.2.5 SIBR UI Screen Layout

The SIBR UI has the following tabs and some sub tabs that use the navigation functionality described in the previous sections. Each tab will be defined in more detail in the upcoming sections.

- Bids (Physical bids sent to market for optimization)
- Trades (Financial Settlements for Energy Trading)
- Convergence Bids (Virtual Supply and Demand bidding)



- *Energy Forecast (Energy Forecast for VER SC option resources) moved to ALFS*
- Export Priority Report (Gen/Exp Eligible Export Capacity for PT status)
- Ind Viewer (Balancing / matching ETC/TOR or Wheeling)
- OTC Viewer (Transmission Constraint Limit)
- Messages (DAM and RTM Bid Ceiling Limit per hour)
- Dynamic Limit (Hybrid Resource 5 minute Limit capability)
- Ancillary Service Requirement (Day Ahead Nodal Pricing Market)



3 Bids

This section will show the user how to view bid status, how to create new bids based on existing bids, cancel bids, and submit bids. A step-by-step walkthrough of the bid entry process is included at the end of this chapter.

The CAISO SIBR system accepts two kinds of bids:

- Day-Ahead bids: A day-ahead bid is submitted for a resource for a 24-hour market period. Day-ahead bids may be submitted for up to 7 days in the future. Day-ahead bids must be submitted prior to market close for the target day.
- Note (Convergence Bids are Day-Ahead only)
- Real-Time bids: Real-time bids are submitted for one-hour periods for one target day. Although real-time bids are for one-hour periods, the user interface bid entry screens are designed to permit up to 24 (25 on a long day, 23 on a short) day-ahead bids to be entered on a single screen.

Bid data is entered on either the Day-Ahead or Real-Time market tab. Day-Ahead and Real-Time pages look and behave very much alike, the major difference being that a Real-Time bid requires that certain data be provided for each hour of the target day.

For both Day-Ahead and Real-Time bids, there are 3 types of categories of data that can be entered:

- Daily Components: These are parameters that are associated with the resource for the trade day, not with an individual market or hourly intervals of the bid.
- Product Components: These are parameters that may vary from one hour to the next through the market period.
- Hourly (Miscellaneous) components: These are parameters that may vary from one hour to the next through the market period.



3.1 Bid Details Displays

Bids are submitted for both the Day-Ahead Market (DAM) and for the Real-Time Market (RTM) and the display only varies slightly depending on the Market Type. The major difference is that Real-Time bids are for one-hour periods while Day-Ahead bids are for 24-hour periods for a single Trade Date and may be submitted up to 7 days ahead of the target market date. As with Day-Ahead bids, a Real-Time bid consists of Daily, Product and Hourly (Miscellaneous) components. However, if daily components have already been submitted for a resource with its bid in the day-ahead market, they do not need to be submitted again for that resource in the real-time market but they can be. Also like Day-Ahead bids, the actual columns shown may vary, depending upon the type of resource. The bid data consists of three broad categories:

- Daily Components: These apply to the entire trade day on DAM and for a single hour in RTM.
- Product Components: These may be different for each hour of the bid period.
- Hourly Components: These may be different for each hour of the bid period at the resource level (MSG).

The next sections will break down the tabular details displays.



3.1.1 Daily Details Displays

Figure 32 illustrates the display used for entering and viewing daily components. The exact contents of this display will vary, depending upon the type of resource. These can include the following:

Startup information (cost curve, time curve) (DAM and RTM)

Minimum Load information. (DAM and RTM)

Minimum and Maximum Energy Limit information. (Gen only)

Minimum and Maximum Charge Limit information. (NGR only)

Initial State of Charge Limit Information (Initial State) (NGR only)

Default Load Adjustment (Gen)

Default Startup Adjustment (Gen)

State Transitions (MSG only)

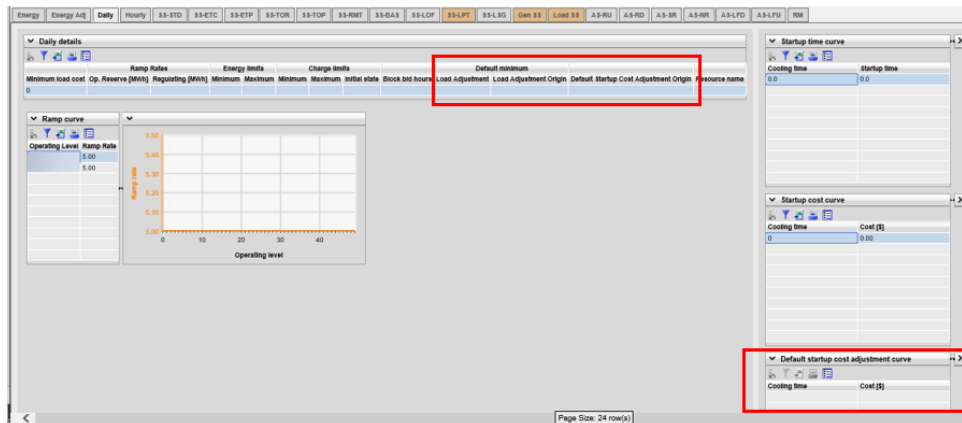


Figure 32 Daily Components Layout

3.1.2 Energy Details Displays

Figure 33 illustrates the display used for entering and viewing the Energy components. The exact contents of this display will vary, depending upon the type of resource. These can include the following for both markets unless noted:

Hour

Price Curve(s) – The ID number, the curve is displayed in the Price Curve(s) pane to the right.

Distribution pair – The ID for aggregated resources, details are in the Distribution Pair(s) pane to the right.

Pumping - Level / Shutdown cost / Cost (Pump Storage Hydro units only).

RUC - Price / Quantity (DAM only) – Resource must be certified for RUC.

NOTE: This RUC component will retire when DAME is live using new RCU/RCD products.

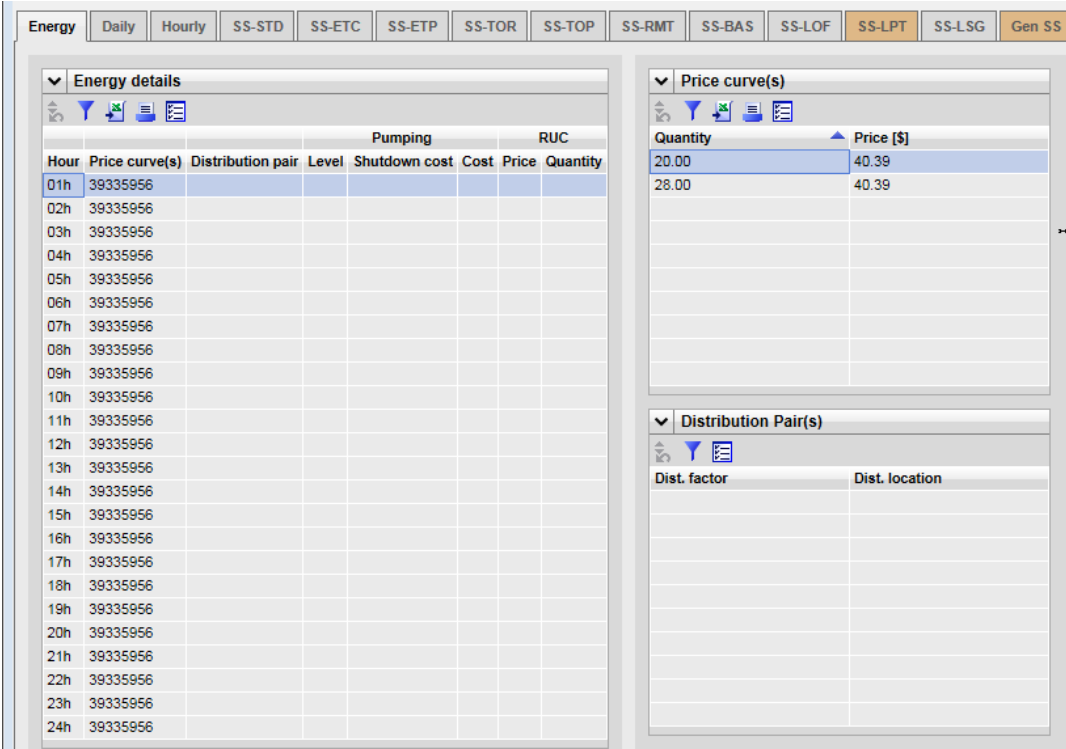


Figure 33 Energy Detail

3.1.3 Energy Adj Details Displays

Figure 33.a illustrates the display used for entering and viewing the Energy Adj components. These can include the following for both markets unless noted:

- Hour

- Price Curve(s) – The ID number, the curve is displayed in the Price Curve(s) pane to the right.

- Resource must have a Threshold curve in order to submit an Energy Adjusted Default Energy Bid.

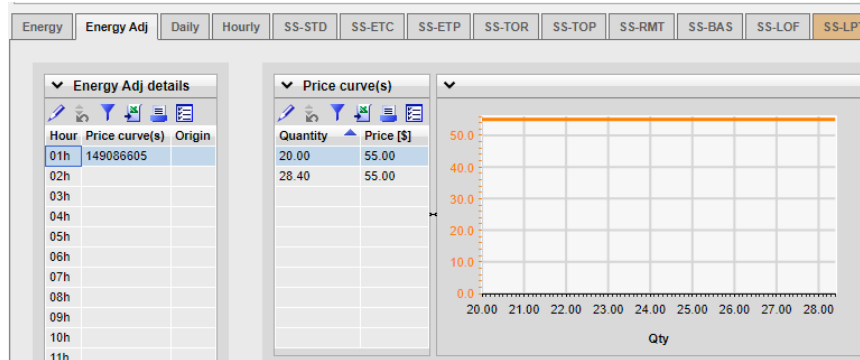


Figure 33a Energy Adj Detail

3.1.4 Hourly Details Displays

Figure 34 illustrates the display used for entering and viewing Hourly (Miscellaneous) components. The exact contents of this display will vary, depending upon the type of resource and which Market type. These can include the following:

Hour

Open Tie indicator – Indicates if the path is down that resource is tied to.

Gen capacity limit – Indicator to market for available dispatch capacity.

NERC tag (not used)

Scheduling coordinator/SchedulePoint/PrimaryTie/PSE id (used for Transactions).

Registered Resource – Indicates if the resource is Registered in Master File.

Dispatch Option (Inter-Tie RTM only) – Hourly, Once, 15Min, or Dynamic.

Counter resource (Inter-Tie Wheeling) – Identifies the counter resource for the Wheel Transaction (Import names the Export as a counter resource and Export names the Import as the counter resource).

GHG Capacity / Price (EIM Participating) – GHG component for each hour.

GHG CA Supply (EIM Participating this is not active).

EOHSOC lower limit (NGR) RTM only End of Hour State of Charge. (ESDER4)

EOHSOC upper limit (NGR) RTM only End of Hour State of Charge. (ESDER4)

Off grid charge indicator (NGR) Y/N for managing Sub/Stand Alone ACC. (ESE2)



Figure 34 Hourly Details Display

3.1.5 SS-STD (Self-Schedule Standard) Details Displays

Figure 35 illustrates the display used for entering and viewing Self-Schedule Standard (**also known as a PT Self-Schedule or Price Taker Self-Schedule**) components. The exact contents of this display will vary, depending upon the type of resource. These can include the following:

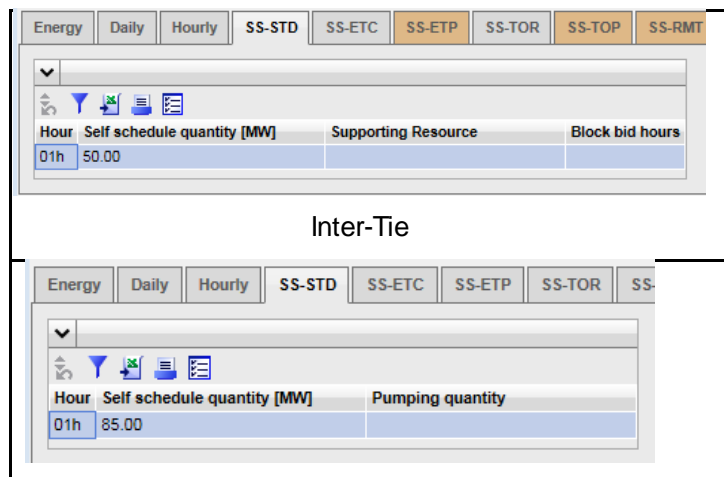
Hour

Self schedule quantity [MW] – Quantity of SS.

Supporting Resource (Export only) – Resource named to provide non-RA capacity for the export.

Block bid hours (DAM only) – Number of hours to consider in DAM optimization for dispatch, all bid values must be the same.

Pumping Self Schedule (Pump Storage Hydro only) – Quantity of SS for Pump.



Generator

Figure 35 SS-STD Details Display



3.1.6 SS-ETC Details Displays (same for ETP/TOR/TOP/RMT)

Figure 36 illustrates the display used for entering and viewing SS for resources that have contract rights for scheduling priority.

ETC – Existing Transmission Contract, ETP is for Pumping Contracts.

TOR – Transmission Ownership Rights, TOP is for Pumping Contracts.

RMT – Regulatory Must Take – Resources registered as RMT can submit.

These can include the following:

Hour

Self schedule contract(s) – This is the obligation ID –details are to the right in the Obligation(s) pane.

Self schedule quantity – Quantity applied to the contract.

Contract – Contract Reference Name (CRN) associated to resource.

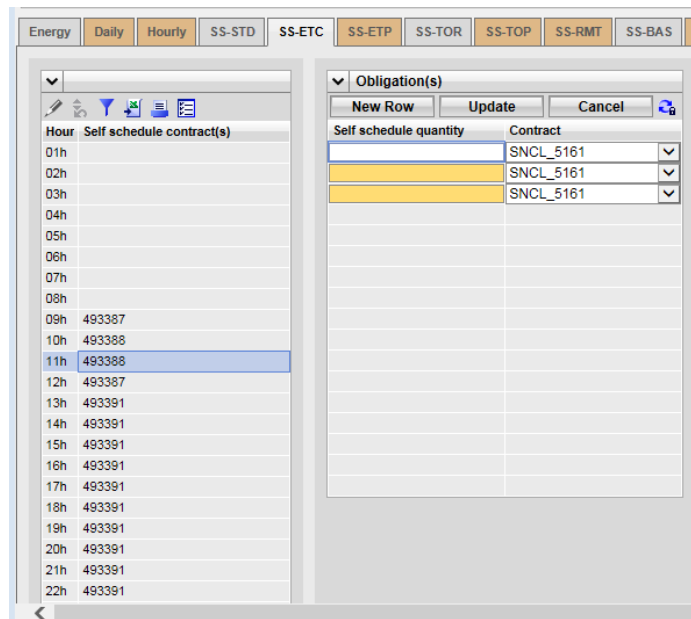


Figure 36 SS-ETC (Contracts) Detail Display

The above display is the same for ETP/TOR/TOP/RMT.

3.1.7 SS-BAS Details Displays (Not used)

The Base Self-Schedule is not currently used.

3.1.8 SS-LOF Details Displays (Not used)

The Self-Schedule Lay-off is not used. This referenced energy to be used with adjacent control areas. This is now covered under the Energy Imbalance Market (EIM).

3.1.9 SS-LPT Details Displays (Export only)

Figure 37 illustrates the display used for entering and viewing SS for Export resources that name a supporting resource to provide non-RA energy to the export.

- Hour
- Resource Name – Supporting Resource for the Export.
- Self schedule quantity – Non-RA MW quantity from the supporting resource.

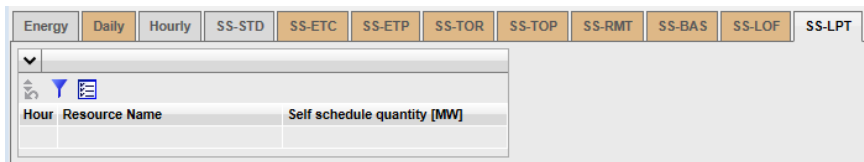


Figure 37 SS-LPT Detail Display

3.1.10 SS-LSG Details Displays (Load Serving Generator only)

Figure 38 illustrates the display used for entering and viewing SS for resources that serves load behind the meter qualifying for net Energy settlement.

- Hour
- Self Schedule quantity – Load MW served behind the meter.



Figure 38 SS-LSG Detail Display



3.1.11 Gen SS and Load SS Details Displays (NGR only)

Figure 39 illustrates the display used for entering and viewing SS for NGR resources on the Generation side (positive) and Load side (positive on display) the display for the LSS is the same as the GSS.

- Hour
- Resource Name
- Self Schedule quantity – Price taker MW for NGR

Hour	Resource Name	Self schedule quantity
22h		1.00

Figure 39 Gen SS Detail Display



3.1.12 IRU and IRD Details Displays (Imbalance Reserve Up/Down)

Figure 40 illustrates the display used for entering and viewing IRU / IRD for resources that have certified capacity.

- Hour
- Resource Name
- Capacity MW – Imbalance Reserve Capacity.
- Capacity price [\$] – Economic consideration during optimization for dispatch.
- State – Configuration for MSG resource.

The screenshot displays the California ISO SIBR interface. At the top, there is a navigation bar with tabs for Bids, Trades, Convergence Bids, Energy forecast, Export Priority Report, Ind Viewer, OTC Viewer, Messages, Dynamic limit, Ancillary Service Requirement, and Admin. Below this, the 'Bid summary' section is active, showing a table of resources. The table has columns for Status, Resource type, Resource ID, State, and various energy and schedule parameters. Two columns, 'Imbalance Reserve' and 'Reliability Capacity', are highlighted with red boxes. Below the table, there are two detailed views: 'Imbalance Reserve Up' and 'Imbalance Reserve Down'. Both views have a table with columns for Hour, Resource Name, Capacity [MW], Capacity price [\$], and State. These two views are also highlighted with red boxes. The bottom of the screen shows a status bar with 'CONNECTED', 'DCERILLO | ReadWrite', and a timestamp of '0:09:44 PST'.



3.1.13 RCU and RCD Details Displays (Reliability Capacity Up/Down)

Figure 41 illustrates the display used for entering and viewing RCU / RCD for resources that have certified capacity.

- Hour
- Resource Name
- Capacity MW – Reliability Capacity.
- Capacity price [\$] – Economic consideration during optimization for dispatch.
- State – Configuration for MSG resource.

The screenshot shows the 'Bid summary' page in the SIBR application. The table lists various resources with columns for 'Reliability Capacity Up' (RCU) and 'Reliability Capacity Down' (RCD). Red boxes highlight the RCU and RCD columns in the table header, the 'RC' button in the bottom toolbar, and two detail pop-up windows for 'Reliability Capacity Up' and 'Reliability Capacity Down'. These pop-ups show fields for 'Hour', 'Resource Name', 'Capacity [MW]', 'Capacity price [\$]', and 'State'.

Status	Resource type	Resource ID	State	Daily	Hourly	Energy	Energy Adj	STD	ETC	TOR	Imbalance Reserve		Reliability Capacity	
											IRU	IRD	RCU	RCD
✓	Non-Generating	BARRE_2_ALASB1	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]
✓	Non-Generating	CRELMN_6_AAABT1	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]
✓	Non-Generating	DELAJO_2_ALASB2	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]
✓	Non-Generating	ELCAJN_6_EB1BT1	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]
✓	Non-Generating	ESCND0_6_EB1BT1	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]
✓	Non-Generating	ESCND0_6_EB2BT2	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]
✓	Non-Generating	ESCND0_6_EB3BT3	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]
✓	Non-Generating	FALBRK_6_FESBT1	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]	[ALL]

3.1.14 AS-RU and AS-RD Details Displays (Regulation Up/Down)

Figure 42 illustrates the display used for entering and viewing RU / RD for resources that have certified capacity.

- Hour
- Capacity MW – Capacity considered for dispatch.
- Capacity price [\$] – Economic consideration during optimization for dispatch.
- Opportunity cost [\$MW] – Additional cost for operating under Regulation.
- Self-provision [MW] - MW quantity for its own AS obligation.
- Contingency indicator (DAM only)– Indicates if resource can be dispatched only under contingency. (only for Spin and Non-Spin)

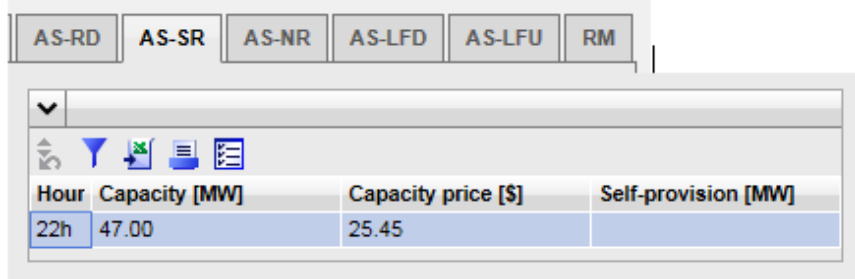


Figure 42 AS-RU / RD Detail Display

3.1.15 AS-SR and AS-NR Details Displays (Spin and Non-Spin Reserve)

Figure 43 illustrates the display used for entering and viewing SR resources that have certified capacity.

- Hour
- Capacity MW – Capacity considered for dispatch.
- Capacity price [\$] – Economic consideration during optimization for dispatch.
- Self-provision [MW] - MW quantity for its own AS obligation.
- Contingency indicator (DAM only) – Indicates if resource can be dispatched only under contingency.



The screenshot shows a software interface with tabs for AS-RD, AS-SR, AS-NR, AS-LFD, AS-LFU, and RM. The AS-SR tab is active. Below the tabs is a search bar and a toolbar with icons for refresh, filter, save, print, and help. A table displays the following data:

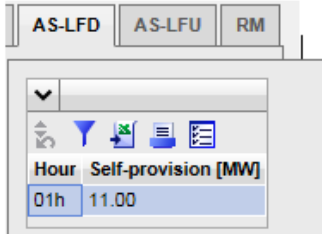
Hour	Capacity [MW]	Capacity price [\$]	Self-provision [MW]
22h	47.00	25.45	

Figure 43 AS-SR AS-NR Detail Display

3.1.16 AS-LFD/ LFU Details Displays (Load Following Down/ Up)

Figure 44 illustrates the display used for entering and viewing LFD for resources that have a Load Following Down service by a MSSA.

- Hour
- Self-provision [MW] - MW quantity for its own AS obligation.
- Contingency indicator (DAM only) – Indicates if resource can be dispatched only under contingency.



The screenshot shows a software interface with tabs for AS-LFD, AS-LFU, and RM. The AS-LFD tab is active. Below the tabs is a search bar and a toolbar with icons for refresh, filter, save, print, and help. A table displays the following data:

Hour	Self-provision [MW]
01h	11.00

Figure 44 AS-LFD / AS LFU Detail Display



3.1.17 RM Details Displays (Regulation Mileage)

Figure 45 illustrates the display used for entering and viewing Regulation Mileage Up or Down for resources that have a Regulation bid component.

- Hour
- Price [\$/MW]

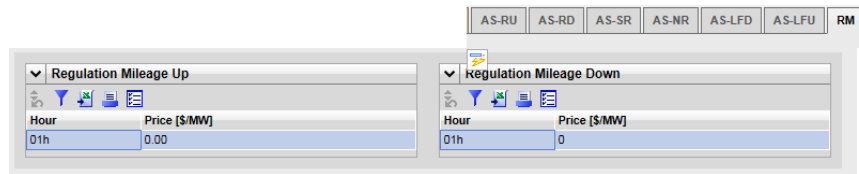


Figure 45 RM Detail Display

3.2 Managing Bids

Managing bids is largely identical for both Day-Ahead and Real-Time bids. As we have discussed before, the only major difference is that Day-Ahead bids are for a full day and Real-Time bids are for a one-hour period. In addition to the market time periods, there are certain components in a bid that can be either for DAM or RTM.

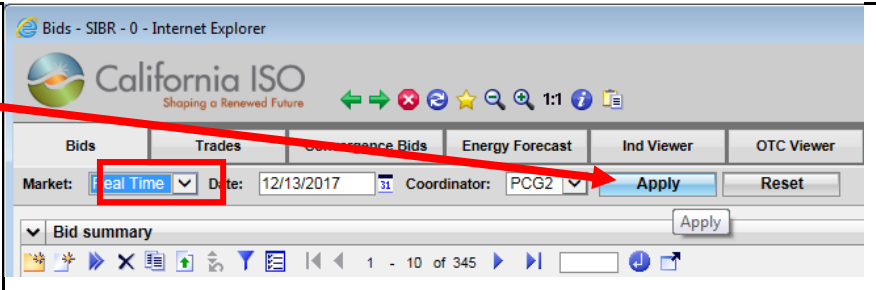
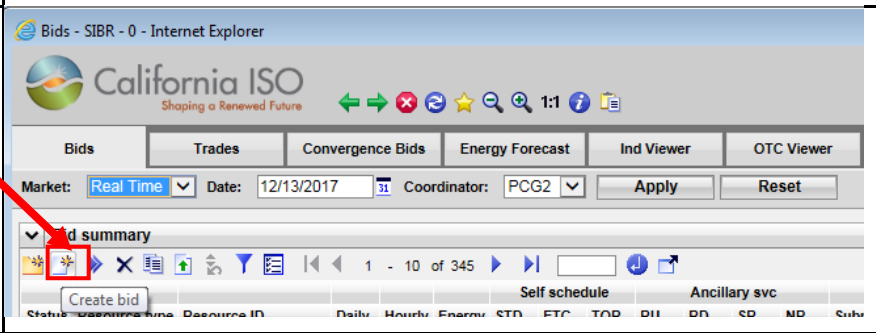
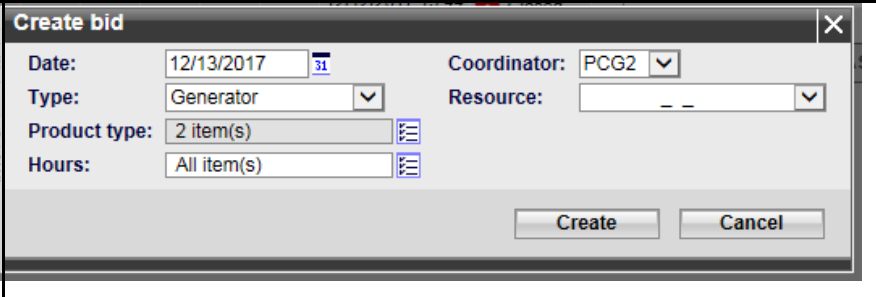
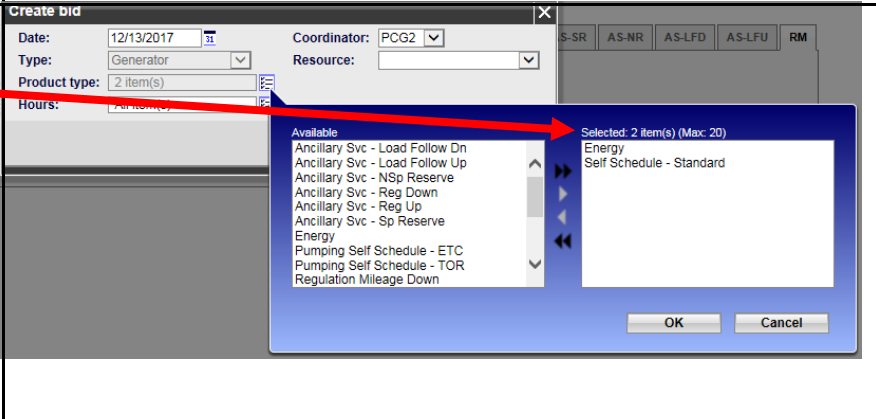
The UI Bids Summary is where all the options will be present for managing bid details. This area will provide options for creating, copying, submitting, removing and viewing bids.

3.2.1 Creating Bids

This section will take the user step-by-step through the bid entry process. The scenario used in this walkthrough is straightforward and designed to take the user through each of the basic bid-entry steps. Some aspects of the bid-entry process may be left out due to the fact that bids can become very complex.

From the Bids tab on the Bid summary clicking on the create icon will generate a created bid for editing. The steps are outlined on the next page in figure 44.

Creating a bid for a Market type requires the header filter to be on the Market type.
In the example we have selected Real Time on the header and hit the Apply button.

<p>Creating a bid for a Market type requires the header filter to be on the Market type.</p>	
<p>Select the Create bid icon</p>	
<p>Date</p>	
<p>Default set to Energy and Self Schedule Standard. Select from Available then use move arrows to the Selected</p>	



You can also remove from the Selected by using the move arrow.

The screenshot shows the 'Create bid' dialog box with the following fields: Date: 12/13/2017, Coordinator: PCG2, Type: Generator, Product type: 2 item(s), and Hours: All item(s). A modal window is open with an 'Available' list containing various ancillary services and Energy. The 'Selected' list contains 'Energy' and 'Self Schedule - Standard'. A red arrow points from the text on the left to the right-pointing arrow between the two lists.

Can be ALL or a subset.

The screenshot shows the 'Create bid' dialog box with the same fields as above. The modal window's 'Available' list now contains time slots from 01h to 09h. The 'Selected' list is empty. The 'OK' and 'Cancel' buttons are visible at the bottom.

Select from Available then use move arrows to the Selected
When Product and Hours are done click

The screenshot shows the 'Create bid' dialog box with the same fields. The modal window's 'Available' list contains time slots from 15h to 24h. The 'Selected' list is empty. A red arrow points from the text on the left to the right-pointing arrow between the lists. The 'OK' button is highlighted with a red box.

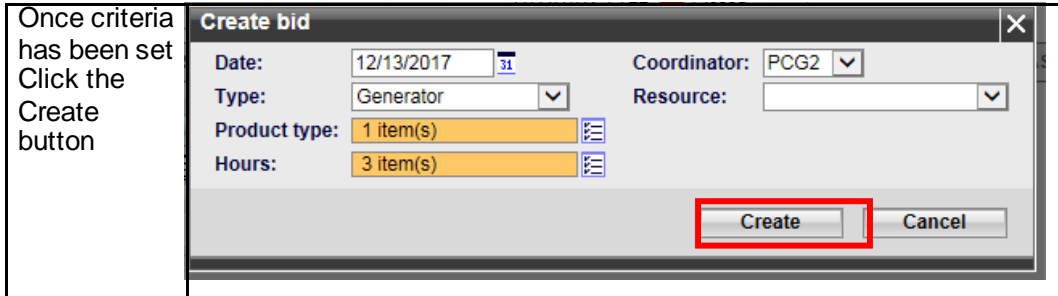


Figure 44 Create Bid

Now that a bid has been created, to see the bid in the created status you will have to set the In-Line filter to display by using one or more of the columns to narrow the displayed data. Things to consider for the filter:

1. Select appropriate market and date for bid on Header.
2. Select status (Created)
3. Select Hour or Range of Hours
4. Select resource type and or resource name

Below is the Bid summary view after applying the In-Line filter that correlated with the created bid from above

Status

Hour

Resource type

Applied on In-Line.

Note HE20 is the selected row.

Energy details shows HE20.



If more than
1 row is
selected:

Energy
details now
show 1 of 3.

Using the
arrow will
move to the
next record.

The screenshot shows the SIBR interface with the 'View Created Bid' window open. The 'Bids' tab is selected, and the 'Bid summary' table displays three rows of bid data. The 'Energy details' panel is open, showing a table with columns for Hour, Price curve(s), Distribution pair, Level, Shutdown cost, and Cost. The first row is selected, and the 'Energy details' panel shows '1 of 3' records. A red box highlights the navigation arrows and the '1 of 3' indicator.

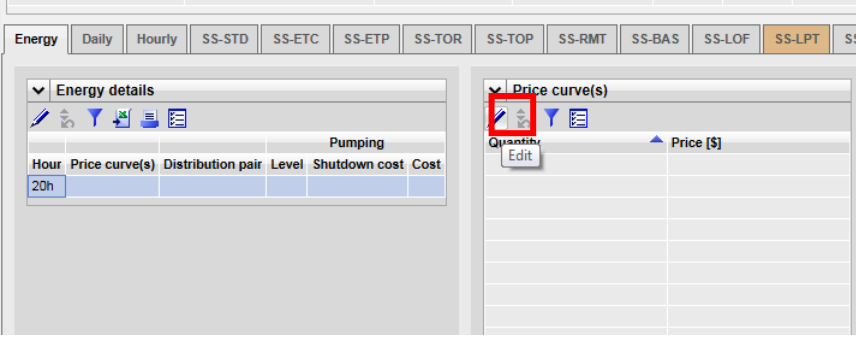
Figure 45 View Created Bid

With the bid in a created status, details may be entered on the bid for the products selected when creating the bid. In this case only Energy was selected.

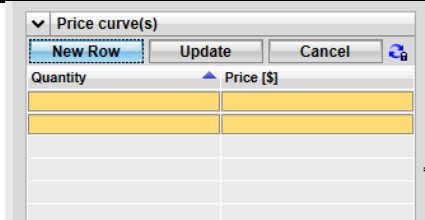
The below figure 46 will illustrate how to enter an Energy curve for the resource.



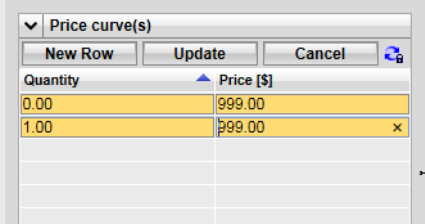
In the Price curve(s) pane click Edit icon



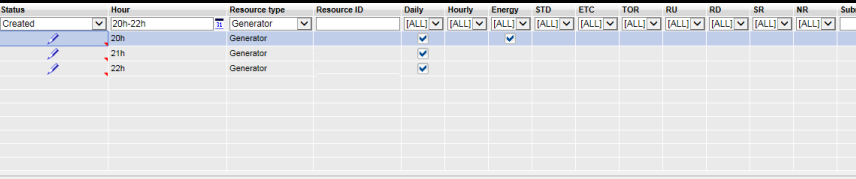
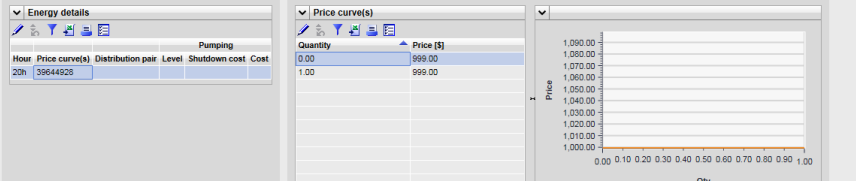
Click New Row for each segment to be entered. There must be 2.



Enter a Quantity and a Price
Then Update



Top row has Energy check for HE20.

The above bid is now ready for submission with an Energy component.

Figure 46 Created Bid with Product Component.



Adding Products to a Created Bid or Copied bid.

If desired and an additional component needs to be added to the Created bid this can be done by right clicking the column for the product to add in the Bid summary for the selected bid. These steps are illustrated in figure 47 below.

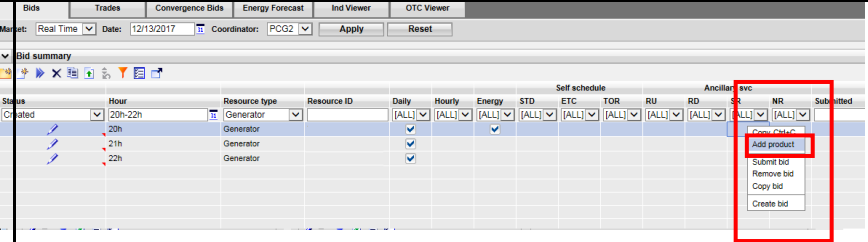


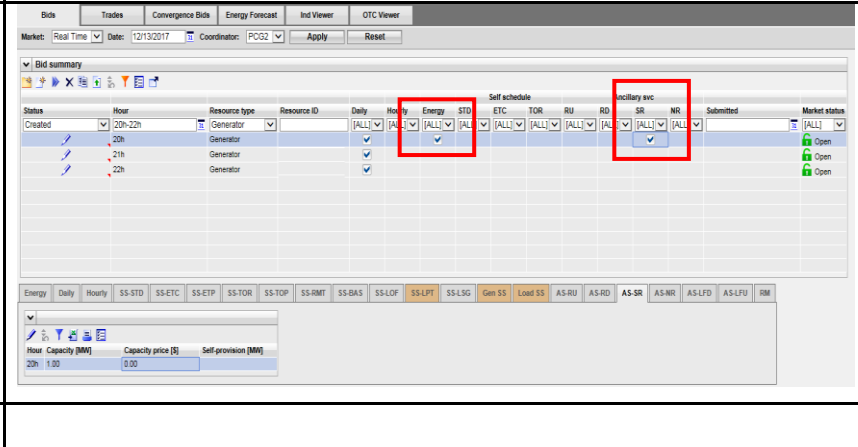
<p>Select Row right click in the Product</p> <p>Select Add Product.</p>	
<p>Detail pane will refresh Product.</p> <p>Select Edit icon</p>	
<p>Enter data Update</p>	
<p>Bid now contains Energy and Spin.</p>	

Figure 47 Adding Components



3.2.2 Submitting Bids

Bids that are in a Created status are available for submission, if a bid is not in a Created status, there will be an error on submit that will show on the message pane in the bottom of the screen.

The user can submit 1 or more bids, and there is an option to submit all.

On a Created bid there is an icon to submit or you can select 1 or more rows in the summary grid and right click to bring the menu up to Submit. This is shown below for the Created bids in figure 48.

Submit icon

Day Ahead Generator Bid in Created Status

Right click on line

Menu options

Submit bid

Status	Resource type	Resource ID
✓	Generator	
✓	Generator	
✓	Generator	
✓	Generator	
✓	Generator	
✓	Generator	
✓	Generator	
✓	Generator	
✓	Generator	
✓	Generator	

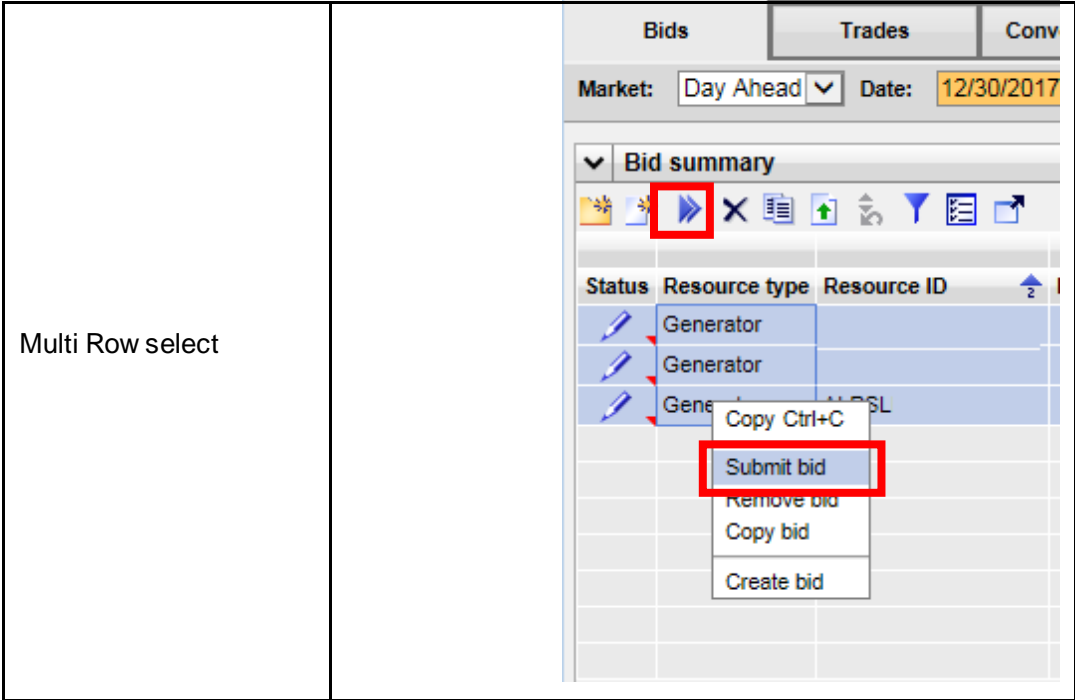


Figure 48 Submit Bid

3.2.3 Product Component Functional Details

When bidding in selected components there may be new functionality or modified functionality that has been recently released in support of new policy or enhancements. This section of the document will cover any new change to using the UI. All component details are outlined in section 3.1 for the respective tabs.

Functions with the 'Fall 2020 Release' that impact the UI for Commitment Cost Default Energy Bid Enhancements (CCDEBE). Default Energy Curve, Default Minimum Load and Default Start-Up Cost.

1. Energy Adj Component – New adjusted Default Energy Bid (DEB) to be used in MPM run based on SC submission with new curve above the original DEB. These can be for DAM or RTM, the adjusted



curve will show an origin which will be either EX_ANTE or THRESHOLD. The adjusted bid will show EX_ANTE as the origin if the value is below the threshold price or will be capped at a threshold price if it is exceeded in the adjusted bid and will show the origin as THRESHOLD if capped.

Energy	Energy Adj	Daily	Hourly	SS-STD	SS-ETC	SS-ETP
--------	------------	-------	--------	--------	--------	--------

Energy Adj details		
Hour	Price curve(s)	Origin
01h	149192810	THRESHOLD
02h	149192808	EX_ANTE
03h	149192808	EX_ANTE
04h	149192808	EX_ANTE

Price curve(s)	
Quantity	Price [\$]
65.00	60.45
78.11	60.45
65.00	55.00
78.11	55.00

2. Default Minimum Load Adjustment – New Default Minimum Load cost that can be for DAM or RTM. The adjusted Minimum Load Cost will show an origin which will be either EX_ANTE or THRESHOLD. The adjusted cost will show EX_ANTE as the origin if the value is below the threshold price or will be capped at a threshold price if it is exceeded in the adjusted bid and will show the origin as THRESHOLD if capped.

Energy	Energy Adj	Daily	Hourly	SS-STD	SS-ETC	SS-ETP	SS-TOR	SS-TOP	SS-RMT	SS-BAS	SS-LOF	SS-LPT	SS-LSG	Gen SS	Load SS	AS-RU	AS-RD	AS-SR	AS-I
--------	------------	-------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	---------	-------	-------	-------	------

Daily details											
Ramp Rates			Energy limits		Charge limits			Default minimum			
Minimum load cost	Op. Reserve [MWh]	Regulating [MWh]	Minimum	Maximum	Minimum	Maximum	Initial state	Block bid hours	Load Adjustment	Load Adjustment Origin	Default Startup Cost Adjustment Origin
3516.68	4.72	3.22							5000	EX_ANTE	THRESHOLD

3. Default Startup Cost Adjustment – New Default Startup Cost that can be for DAM or RTM. The adjusted Start-Up Cost will show an origin which will be either EX_ANTE or THRESHOLD. The adjusted cost will show EX_ANTE as the origin if the value is below the threshold price or will be capped at a threshold price if it is exceeded in the adjusted bid and will show the origin as THRESHOLD if capped.

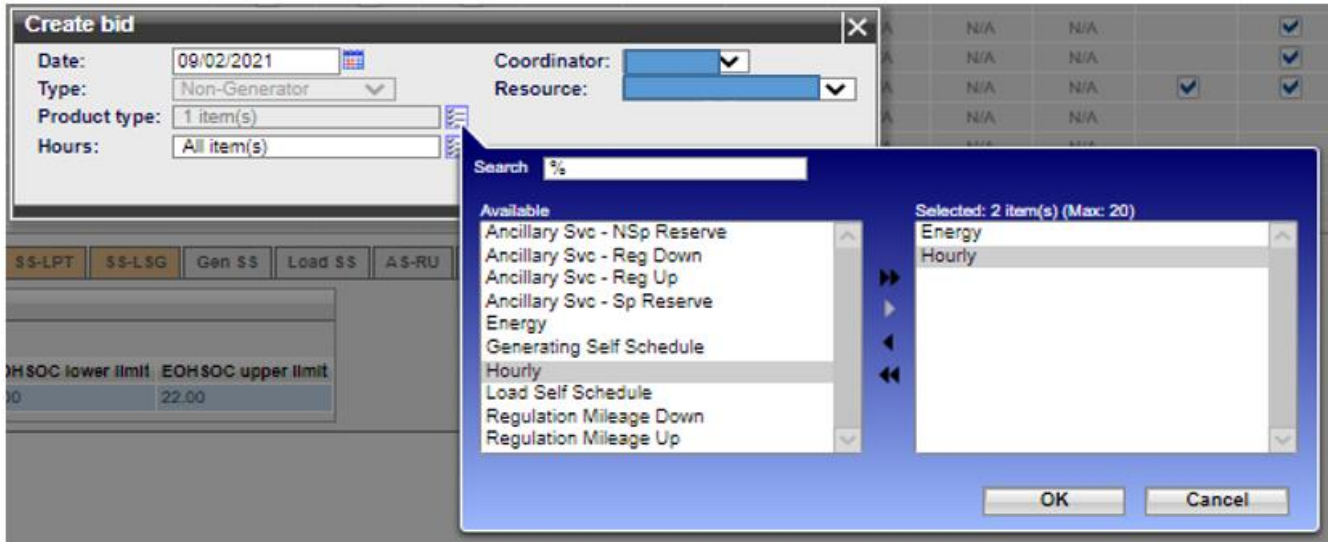
Default startup cost adjustment curve	
Cooling time	Cost [\$]
0	6,497.65

- 4.

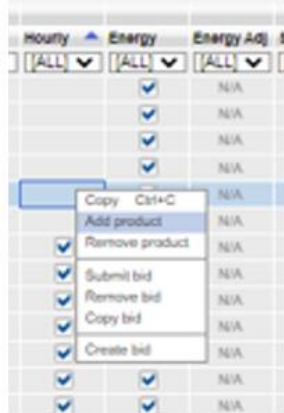


New functionality for the End Of Hour State of Charge for NGR resources introduced in the Fall 2021 Release.

EOH SOC Bid Parameters Submission : EOH SOC is located in the Hourly Tab, when creating a bid ensure product type Hourly is selected.



If bid was created without selecting hourly simply right-click on the hourly cell to add product.





The screenshot displays the SIBR Scheduling Coordinator interface. At the top, there are navigation tabs: Bids, Trades, Convergence Bids, Energy Forecast, Bid Viewer, OTC Viewer, and Messages. Below these, the 'Bid summary' section shows a table with columns for Status, Hour, Resource type, Resource ID, State, and various bid parameters. The 'Hourly' tab is selected, showing a detailed view of the bid for the 02h period. The 'EOH SOC lower limit' is set to 2.00 and the 'EOH SOC upper limit' is set to 150.00, both of which are highlighted with a red box in the original image.

Hour	Gen capacity limit	Load capacity limit	MERC tag	Dispatch option	GHG capacity	GHG price	EOH SOC lower limit	EOH SOC upper limit
02h							2.00	150.00

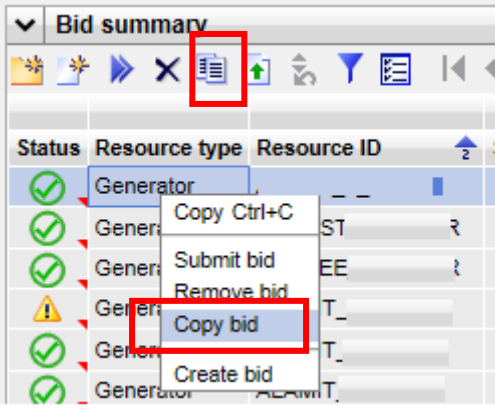
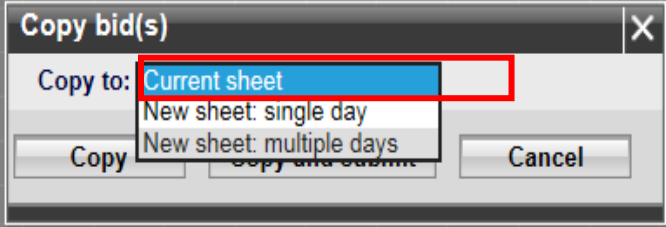
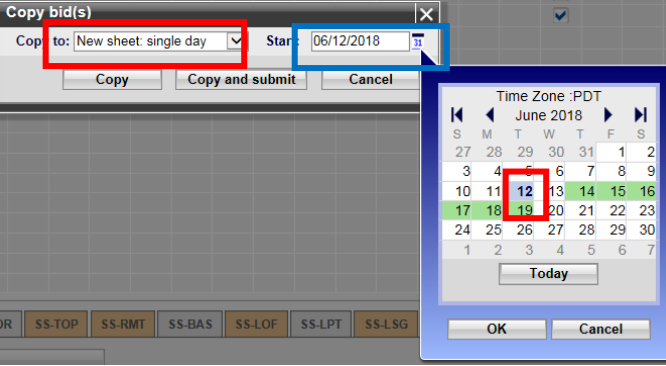
3.2.4 Copying and Editing Bids

To copy an existing bid for editing or copying a bid for submission for another period can be done using the copy icon or by selecting rows from the Bid summary and right click to copy. You can copy to either the current sheet for editing the existing bid or to a new sheet for a different date or range of dates. After the 'Copy to' has been selected you can either select Copy, Copy and submit or Cancel the copy.

If selecting a New sheet and specifying a date either in the date column manually or by selecting a date from the calendar pop-out, when the copy is performed the Bid summary will go to that date.

Copy will allow for editing of the bid prior to submission, Copy and submit will submit the copied bid and Cancel will cancel the operation and return to the Bid summary. Please see the below for an illustration on how to copy in figure 49.



<p>Copy icon</p> <p>Right click menu</p> <p>Select Copy bid</p>	
<p>Copy to: Current sheet</p>	
<p>Copy to: New sheet</p> <p>Date display and calendar pop-out.</p> <p>Select date then OK.</p>	



<p>Multi-day using a start date and end date.</p>																												
<p>Using copy for either Current sheet or New sheet Single day or Multiple days.</p>																												
<p>Copied bids will show as Created for the resource. Select that row to edit.</p>	<table border="1"> <thead> <tr> <th>Status</th> <th>Resource type</th> <th>Resource ID</th> <th>Daily</th> <th>Hourly</th> <th>Energy</th> <th>STD</th> <th>ETC</th> <th>ETP</th> </tr> </thead> <tbody> <tr> <td>✓</td> <td>Generator</td> <td>SOLAR</td> <td>✓</td> <td>✓</td> <td></td> <td>✓</td> <td></td> <td></td> </tr> <tr style="border: 2px solid red;"> <td>✎</td> <td>Generator</td> <td>_SOLAR</td> <td>✓</td> <td>✓</td> <td></td> <td>✓</td> <td></td> <td></td> </tr> </tbody> </table>	Status	Resource type	Resource ID	Daily	Hourly	Energy	STD	ETC	ETP	✓	Generator	SOLAR	✓	✓		✓			✎	Generator	_SOLAR	✓	✓		✓		
Status	Resource type	Resource ID	Daily	Hourly	Energy	STD	ETC	ETP																				
✓	Generator	SOLAR	✓	✓		✓																						
✎	Generator	_SOLAR	✓	✓		✓																						

Figure 49 Copy Bids



3.2.5 Removing Bids

To remove a bid select the row or rows from the Bid summary display and then use either the icon for remove bids or right click and select the remove bids from the menu. This is illustrated in figure 50 below.

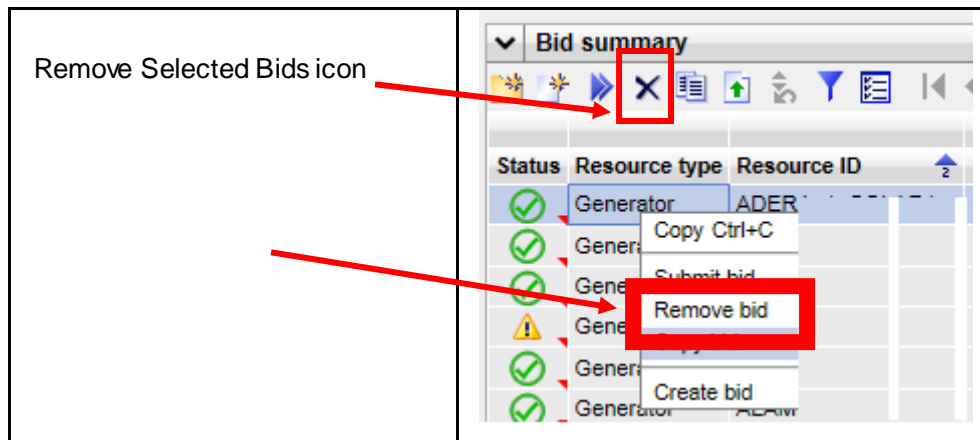
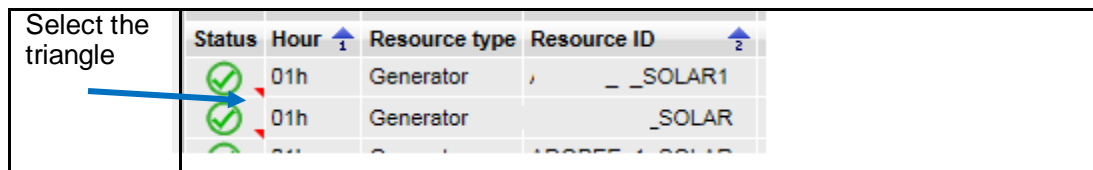


Figure 50 Remove Bids

3.2.6 Viewing Messages on Bids

For each bid that is not in a created status there will be a set of messages indicating the rules that were triggered for the bid after it was submitted. To view the messages click on the red triangle located in the bottom right corner of the Status cell. This will open a pop-up Bid Messages display to show the Product, rule number, level indicator and message shown in figure 51 below.



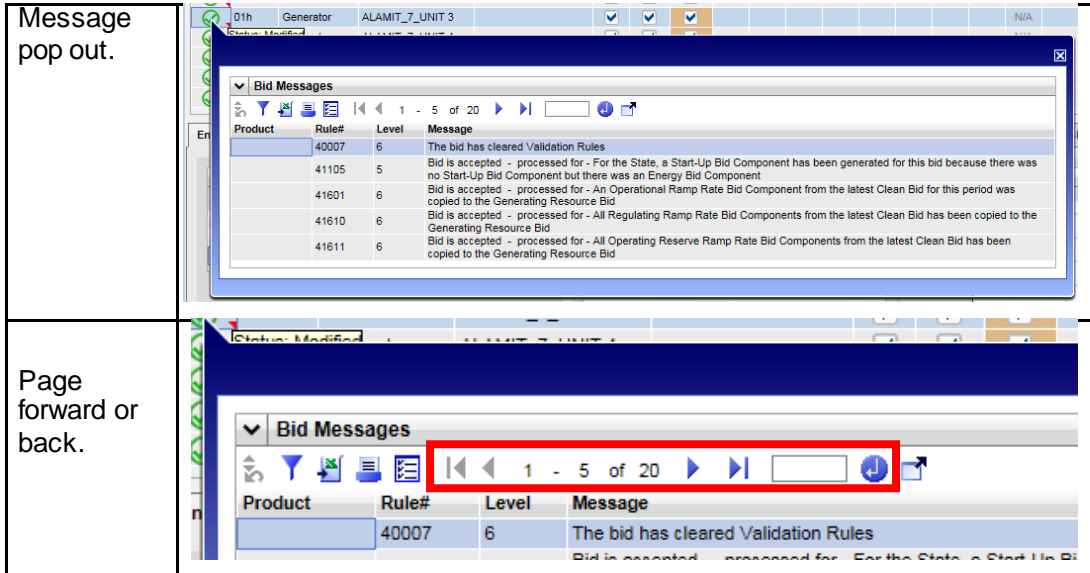


Figure 51 Bid Messages

The messages provide required feedback on submitted bids to participants, it should also be noted that if a bid that was submitted and was market accepted at the time of submission could become non market accepted after a triggered bid revalidation such as from either new master file data for a future trade date or by special processing of contract entitlements or wheeling transactions to name a few.

Product will indicate the rule fired for a specific product type, if there is no Product it means the rule applies to the bid in general or is either a Daily or Miscellaneous component.

Rule number is the actual rule that fired while processing through the rules engine, the rule document is located on the CAISO web site.

The **level** can be shown as 0, 5, or 6 depending on the rule condition. A 0 will indicate that the bid did not meet the conditions specified in the rule. Typically you will see this on rejected or invalid bids. A rule with a level of 5 or 6 indicates that some processing was done on the bid, you will typically see this on modified bids when a component is added or an existing component is modified to meet the condition of the rule.

The **message** is intended to be a simplified explanation of the rule that fired to indicate either why the bid is not market accepted or what was modified on the bid to meet the rule condition.



3.2.7 Transaction Bid Walkthrough

To create a Transaction bid is similar to the steps defined for the generator in section 3.2.1. Below in figure 52 will show the combination of the entered data and how it will be processed by SIBR to generate a Transaction MRID (name) based on SIBR Business Rules.

All data in the **Transaction** box must be entered except for Alternate Tie (this is reserved for pre-defined Tie Points). The Scheduling Point must be allowed at the Primary tie to be accepted.

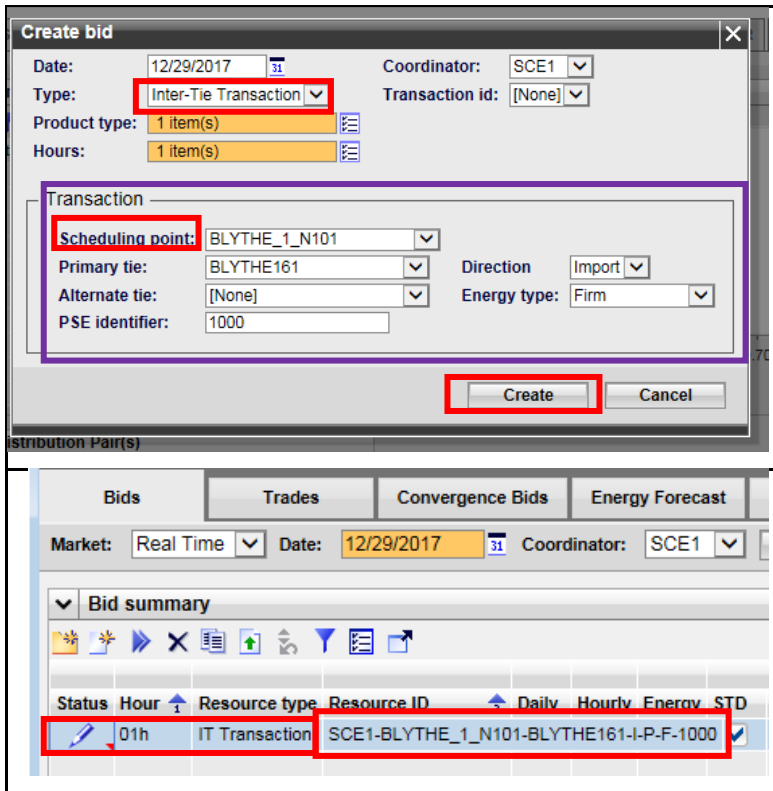


Figure 52 Create Transaction bid

3.2.8 Wheeling Bid Walkthrough

This section will take the user step-by-step through a Wheeling transaction which is a Wheeling bid that can be used with both Registered Interties and Inter-Tie Transactions. The Wheeling functionality now uses the 'Counter Resource' instead of a Wheeling Reference. From the UI the entry process in figure 53 below shows the Hourly tab differences when either the Registered or Transaction based bid is used.



If the bid is on a Registered Inter-Tie the Counter Resource must be the other Wheeling Intertie bid, and the **Registered Resource check** box **must** be selected. Import Bid uses Export Counter Resource, the Export Bid uses the Import Counter Resource.

If the Wheeling bid is on a Transaction both the Import and Export Transaction bids must be submitted in order to name the counter resource. Use the Transaction name of the Import as the Counter resource for the Export and vice versa and make sure the **Registered Resource** block is **unchecked**.

After submission, you can view the Hourly Display page and see the Counter Resource for the valid bid.

Registered Inter-Tie

Market: Day Ahead Date: 12/20/2022 Coordinator: [dropdown]

Bid summary

Status	Resource type	Resource ID	State	Daily	Hourly	Energy	Energy Adj	STD	ETC	ETP	TOR
✓	Inter-Tie	_PITTBAY_E_WHL_T			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A			N/A	
✓	Inter-Tie	_POTTBAY_I_WHL_T			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A			N/A	

Export Resource names Import as Counter Resource

Energy Energy Adj Daily Hourly SS-STD SS-ETC SS-ETP SS-TOR SS-TOP SS-RMT SS-BAS SS-LOF SS-LPT SS-LSG Gen SS Load SS

Hour	Open tie indicator	NERC tag	Schedule coordinator	Schedule point	Primary tie	PSE id	Registered resource	Counter resource
01h	N						<input checked="" type="checkbox"/>	_POTTBAY_I_WHL_T
02h	N						<input checked="" type="checkbox"/>	_POTTBAY_I_WHL_T
03h	N						<input checked="" type="checkbox"/>	_POTTBAY_I_WHL_T
04h	N						<input checked="" type="checkbox"/>	_POTTBAY_I_WHL_T
05h	N						<input checked="" type="checkbox"/>	_POTTBAY_I_WHL_T
06h	N						<input checked="" type="checkbox"/>	_POTTBAY_I_WHL_T
07h	N						<input checked="" type="checkbox"/>	_POTTBAY_I_WHL_T
08h	N						<input checked="" type="checkbox"/>	_POTTBAY_I_WHL_T
09h	N						<input checked="" type="checkbox"/>	_POTTBAY_I_WHL_T
10h	N						<input checked="" type="checkbox"/>	_POTTBAY_I_WHL_T



Transaction based submit Import and Export

Status	Resource type	Resource ID	State	Daily	Hourly	Energy	Energy Adj	STD	ETC	ETP
✓	IT Transaction	-BLYTHE_1_N101-BLYTHE161-I-P-W-1000			<input checked="" type="checkbox"/>		N/A	<input checked="" type="checkbox"/>	N/A	N/A
✓	IT Transaction	-MALIN_5_N101-MALIN500-E-P-W-1000			<input checked="" type="checkbox"/>		N/A		N/A	N/A
✓	Inter-Tie	_PITTBAY_E_WHL_			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A		N/A	N/A
✓	Inter-Tie	_POTTBAY_I_WHL_			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A		N/A	N/A

Hour	Open tie indicator	NERC tag	Schedule coordinator	Schedule point	Primary tie	PSE id	Registered resource	Counter resource
01h	N							
02h	N							
03h	N							
04h	N							

2nd step for Transaction based Wheel bids Edit Transaction, add Hourly Product.

Go to Hourly tab to enter Counter Resource (transaction)

Status	Resource type	Resource ID	State	Daily	Hourly	Energy	Energy Adj	STD	ETC	ETP	TOR
✓	IT Transaction	-BLYTHE_1_N101-BLYTHE161-I-P-W-1000			<input checked="" type="checkbox"/>		N/A	<input checked="" type="checkbox"/>	N/A	N/A	N/A
✓	IT Transaction	-MALIN_5_N101-MALIN500-E-P-W-1000			<input checked="" type="checkbox"/>		N/A		N/A	N/A	N/A
✓	Inter-Tie	_PITTBAY_E_WHL_			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A		N/A	N/A	N/A
✓	Inter-Tie	_POTTBAY_I_WHL_			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A		N/A	N/A	N/A

Hour	Open tie indicator	NERC tag	Schedule coordinator	Schedule point	Primary tie	PSE id	Registered resource	Counter resource
01h								-MALIN_5_N101-MALIN500-E-P-W-1000
02h								-MALIN_5_N101-MALIN500-E-P-W-1000
03h								-MALIN_5_N101-MALIN500-E-P-W-1000
04h								-MALIN_5_N101-MALIN500-E-P-W-1000
05h								-MALIN_5_N101-MALIN500-E-P-W-1000
06h								-MALIN_5_N101-MALIN500-E-P-W-1000
07h								-MALIN_5_N101-MALIN500-E-P-W-1000
08h								-MALIN_5_N101-MALIN500-E-P-W-1000
09h								-MALIN_5_N101-MALIN500-E-P-W-1000

Figure 53 Wheeling Bid



4 Trades

4.1 Trade Display

This display will allow the user to enter/create, view submitted, submit, copy/paste, and cancel trades for the RT, and the DA markets. When viewing submitted trades, you will always see the current date in header when logging in, this is the same as for bids.

The user will be allowed to view both the “created state” (which is editable), and the latest submitted trades. The user will also be able to filter using the In-Line filters to narrow in displayed data. Refer to section 2.2.1 for the filter options previously defined.

Once logged in to the SIBR system, the Trade Hourly Detail display can be found on top the Trades summary display shown below in figure 54.

The screenshot shows the SIBR Trade tab interface. At the top, there are navigation tabs: Bids, Trades, Convergence Bids, Energy forecast, Bid Viewer, and OTC Viewer. Below these are filters for Market (Day Ahead), Date (06/14/2018), Hours (All item(s)), and Coordinator (NCPA). The main section is titled 'Trade hourly' and contains a table with the following data:

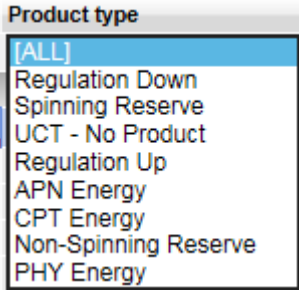
Hour	Status	Product type	Selling SC	Buying SC	Trading Location	Adjusted Qty.	Counter Qty.	Trade Name	Trade type	Depend on trade	Submitting SC	Submitted	Market stat
03h	⊗	APN Energy	WDIS	NCPA	TH_NP15_GEN-APND	1			Inter-SC Trades		NCPA	06/12/2018 12:54	Open
03h	⊗	APN Energy	SNCL	NCPA	TH_NP15_GEN-APND	1			Inter-SC Trades		NCPA	06/12/2018 12:54	Open
06h	⊗	APN Energy	SNCL	NCPA	TH_NP15_GEN-APND	1			Inter-SC Trades		NCPA	06/12/2018 12:54	Open
06h	⊗	APN Energy	WDIS	NCPA	TH_NP15_GEN-APND	2			Inter-SC Trades		NCPA	06/12/2018 12:54	Open

Below the 'Trade hourly' table is a section titled 'Missing trades' with a similar table structure, but it is currently empty.

Figure 54 Trade tab

4.2 Trades Products and Market Type

Managing trades is largely identical to managing bids for both Day-Ahead and Real-Time trades. The only major difference is that Day-Ahead trades are for a full day and viewed by the hour and Real-Time bids are for a one-hour period. In addition to the market time periods, there are certain components in a trade that can be submitted either for DAM or RTM.

<p>Trade products available.</p> <p>Regulation Down/Up, Spinning Reserve, UCT, Non-Spinning Reserve are available in RTM only.</p> <p>PHY and APN for both.</p> <p>CPT will exist if PHY trade does not clear fully.</p>	
<p>Aggregated Pricing Node (APN)</p>	<p>Trades that do not require validation of physical delivery and are only provided at defined aggregated pricing points (Trading Hubs and LAPs).</p>
<p>Physical Trade (PHY)</p>	<p>Physical Inter-SC trades are used to facilitate the settlement of the Seller's Choice contracts.</p>
<p>Converted Physical Trade (CPT)</p>	<p>A converted physical trade has all the attributes and relations inherited from the PHY but the quantity is the pro-rata reduced quantity of the PHY.</p>
<p>Regulation Down RDT (RTM Only)</p>	<p>A Trade of Regulation Down Obligation.</p>
<p>Regulation Down RUT (RTM Only)</p>	<p>A Trade of Regulation Up Obligation.</p>
<p>Spinning Reserve Trade (RTM Only)</p>	<p>A Trade of a Spinning Reserve Obligation.</p>
<p>Non-Spinning Reserve Trade (RTM Only)</p>	<p>A Trade of a Non-Spinning Reserve Obligation.</p>

Unit Commitment Trade (RTM Only)	Load Uplift Obligation
----------------------------------	------------------------

4.3 Managing Trades Hourly Detail Display

The UI Trades Summary is where all the options will be present for managing trade details. This area will provide options for creating, copying, submitting, removing and viewing trades. These functions are primarily the same between bids and trades when using the icons or by using the right-click mouse option menu.

4.3.1 Trade Creation

This section will take the user step-by-step through the trade entry process. The scenario used in this walkthrough is straightforward and designed to take the user through each of the basic trade-entry steps. Some aspects of the trade-entry process may be left out due to the fact that trades can become complex.

“Created” for new/editable trades, otherwise the current status of the submitted trade. Trade status is one of the following:

- Invalid
- Valid
- Conditionally Modified
- Conditionally Valid
- Created
- Submitted (or Recent Submit)
- Modified
- Rejected
- Unmatched
- Matched

Assuming user is brought to Day-Ahead Bid Summary at login. Click on Trades tab to bring up the Trade Hourly and Missing Trade display.

When creating a Trade certain information will be required to generate the trade to be viewed in the Trade hourly so that it may be submitted.

The **Coordinator** drop down will show the SC names associated with the authorized certificate that was used to login.

Trade type For Real Time the **Trade type** can be one of the following:

- Inter-SC Trades (DAM or RTM, it defaults to this in DAM)
- Ancillary Services Trades (RTM only)
- Unit Commitment Trades (RTM only)

Location depends on Trade type

- List of resource locations (PHY)
- trading hubs (APN)
- aggregation points (APN)

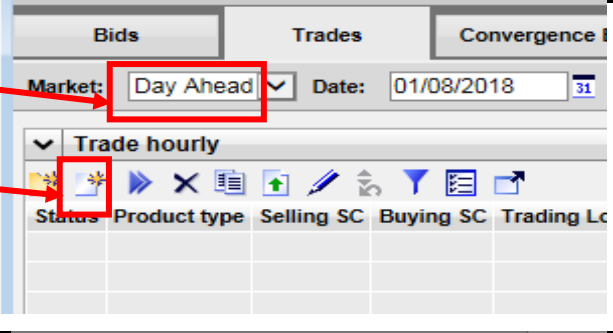
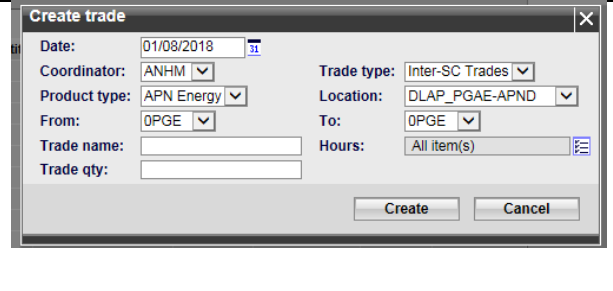
List of SCs in the From are selling to another SC. (drop down will show all)

List of SCs in the To are buying from another SC. (drop down will show all)

Trade name (PHY only, text entered must match exactly between both parties)

Trade qty is the MW to trade that must match with both parties. Note that unmatched trades will be invalidated at the close of the respective market for which they were submitted to if there is no counter trade.

Below in figure 55 are the steps for creating a trade.

<p>SelecSS Select Market. (Day Ahead or Real Time) Click on Create trade icon.</p>	
<p>Select the Date. Select Coordinator. Select the Product type. Trade type (is always Inter-SC Trades in DAM). Select a Location where the trade will take place.</p>	



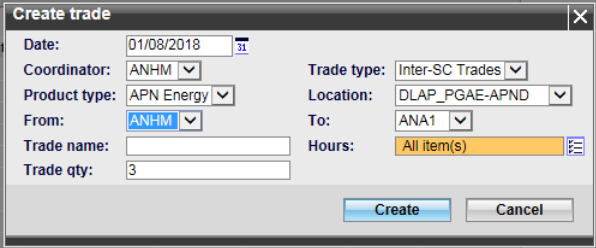
Select the From and To parties involved in the trade (one must be the Coordinator).

Select Hours

Enter Trade name (only for PHY).

Enter Trade qty (MW).

Select Create.



Create trade

Date: 01/08/2018 31

Coordinator: ANHM Trade type: Inter-SC Trades

Product type: APN Energy Location: DLAP_PGAE-APND

From: ANHM To: ANA1

Trade name: Hours: All item(s)

Trade qty: 3

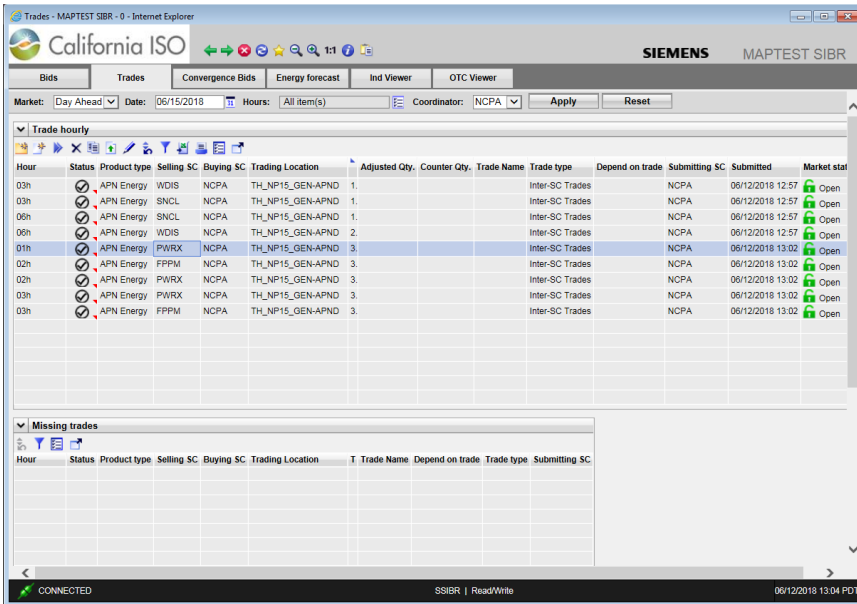
Buttons: Create, Cancel

The newly created trade will appear in the Trade hourly display.

These are in a 'Created' status. (not submitted yet).

Figure 55 Trade Creation

Once the trade has been submitted and processed by the SIBR rules. The submitted trade may now be viewed from the Trades Hourly display.



Hour	Status	Product type	Selling SC	Buying SC	Trading Location	Adjusted Qty.	Counter Qty.	Trade Name	Trade type	Depend on trade	Submitting SC	Submitted	Market status
03h	⊗	APN Energy	WDIS	NCPA	TH_NP15_GEN-APND	1			Inter-SC Trades		NCPA	06/12/2018 12:57	Open
03h	⊗	APN Energy	SNCL	NCPA	TH_NP15_GEN-APND	1			Inter-SC Trades		NCPA	06/12/2018 12:57	Open
06h	⊗	APN Energy	SNCL	NCPA	TH_NP15_GEN-APND	1			Inter-SC Trades		NCPA	06/12/2018 12:57	Open
06h	⊗	APN Energy	WDIS	NCPA	TH_NP15_GEN-APND	2			Inter-SC Trades		NCPA	06/12/2018 12:57	Open
01h	⊗	APN Energy	PWRX	NCPA	TH_NP15_GEN-APND	3			Inter-SC Trades		NCPA	06/12/2018 13:02	Open
02h	⊗	APN Energy	FPPM	NCPA	TH_NP15_GEN-APND	3			Inter-SC Trades		NCPA	06/12/2018 13:02	Open
02h	⊗	APN Energy	PWRX	NCPA	TH_NP15_GEN-APND	3			Inter-SC Trades		NCPA	06/12/2018 13:02	Open
03h	⊗	APN Energy	PWRX	NCPA	TH_NP15_GEN-APND	3			Inter-SC Trades		NCPA	06/12/2018 13:02	Open
03h	⊗	APN Energy	FPPM	NCPA	TH_NP15_GEN-APND	3			Inter-SC Trades		NCPA	06/12/2018 13:02	Open

Figure 56 Trade details of submitted Trade

There, the user can monitor the trade status and view other trades fitting the hourly display criteria. Note that if there is a trade that is missing it will show on the Missing trades from the other party.



The screenshot shows the SIEMENS MAPTEST SIBR interface. At the top, there are tabs for 'Bids', 'Trades', 'Convergence Bids', 'Energy forecast', 'Ind Viewer', and 'OTC Viewer'. The 'Trades' tab is active. Below the tabs, there are filters for 'Market: Day Ahead', 'Date: 06/15/2018', 'Hours: All item(s)', and 'Coordinator: PWRX'. The main area is divided into two sections: 'Trade hourly' and 'Missing trades'. The 'Missing trades' section contains a table with the following data:

Hour	Status	Product type	Selling SC	Buying SC	Trading Location	T	Trade Name	Depend on trade	Trade type	Submitting SC
02h	⚠	APN Energy	PWRX	NCPA	TH_NP15_GEN-APND	3			Inter-SC Trades	PWRX
01h	⚠	APN Energy	PWRX	NCPA	TH_NP15_GEN-APND	3			Inter-SC Trades	PWRX
03h	⚠	APN Energy	PWRX	NCPA	TH_NP15_GEN-APND	3			Inter-SC Trades	PWRX

Figure 57 Missing submitted Trade



4.3.2 Trade Submission

This section will take the user step-by-step through the trade submission process. The scenario used in this walkthrough is straightforward and designed to take the user through each option to submit a trade.

The [Submit Trades] button submits selected trades to the market for processing. Trades are selected by clicking on the row or rows for trades in the tabular data grid shown in figure 58 below.

For single hour submission

Click on Submit selected trade(s)

For Multi-Row selection

Select row

Then hold shift key and click below to capture all rows between.

Click on Submit selected trade(s).

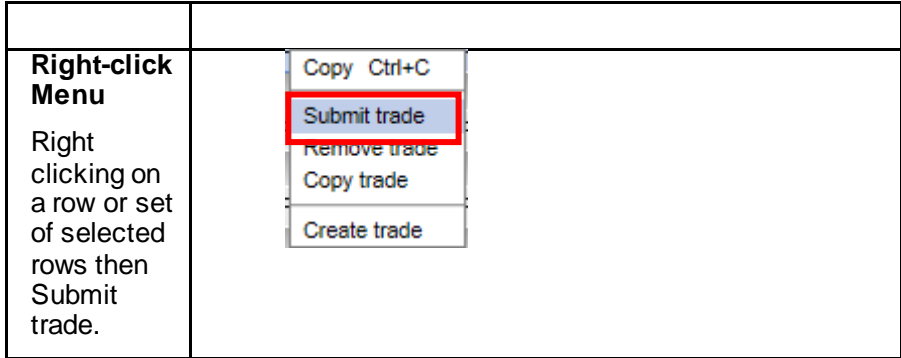


Figure 58 Trade submission

4.3.3 Trade Copy

This section will demonstrate how to copy a selected trade or set of trades.

The “Copy selected trade(s) to new trading day” function copies selected rows to a new date for future use. The user can use the icon to copy trades or right-click menu once selected rows are highlighted shown in figure 59.

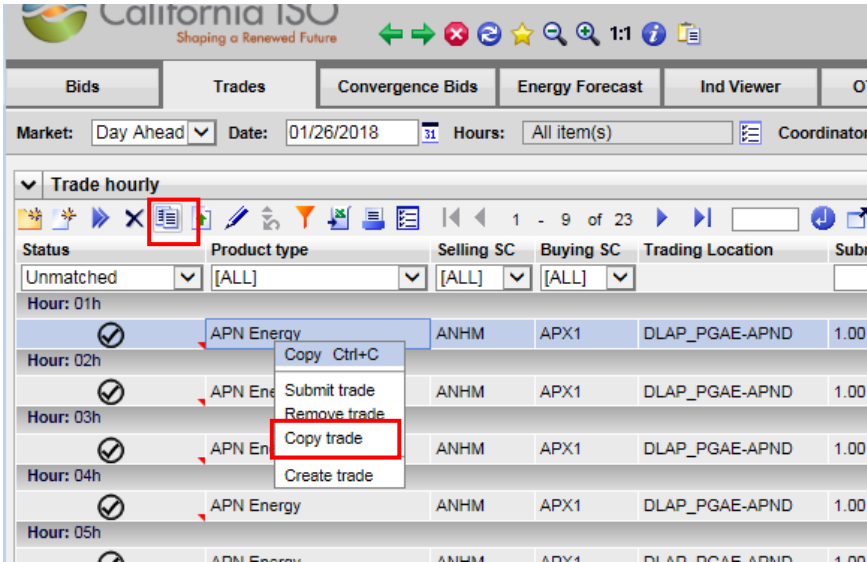


Figure 59 Select Copy Trade



There are two choices when a copy is selected, one is for the Current sheet which will allow an edit to take place retaining all the data and the second is for New sheet which will copy the trade(s) to a new date shown in figure 60.

<p>Copy trade(s) Drop down Copy (edit prior to submit) Copy and submit, submits as is.</p>	
<p>Select date then OK</p>	
<p>Copy will allow edit before submit. Copy and submit will submit as is for that date.</p>	



Multi-day
using a Start
and End
date.

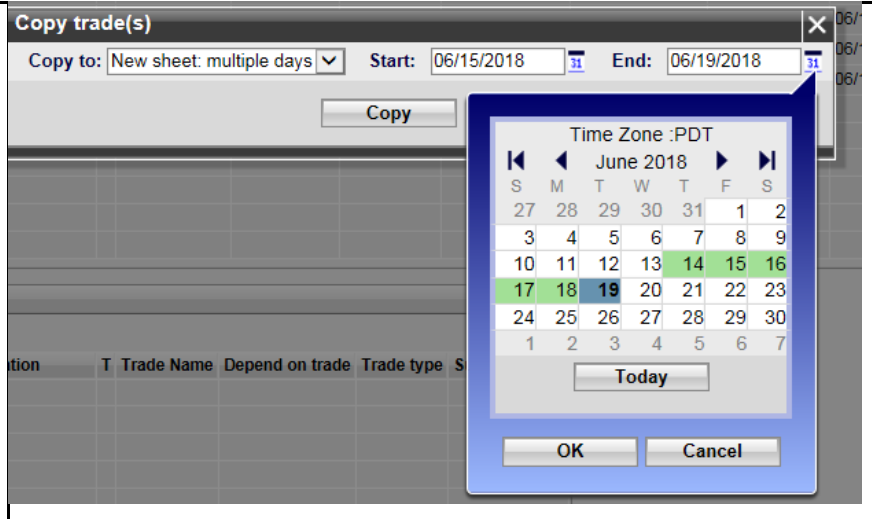
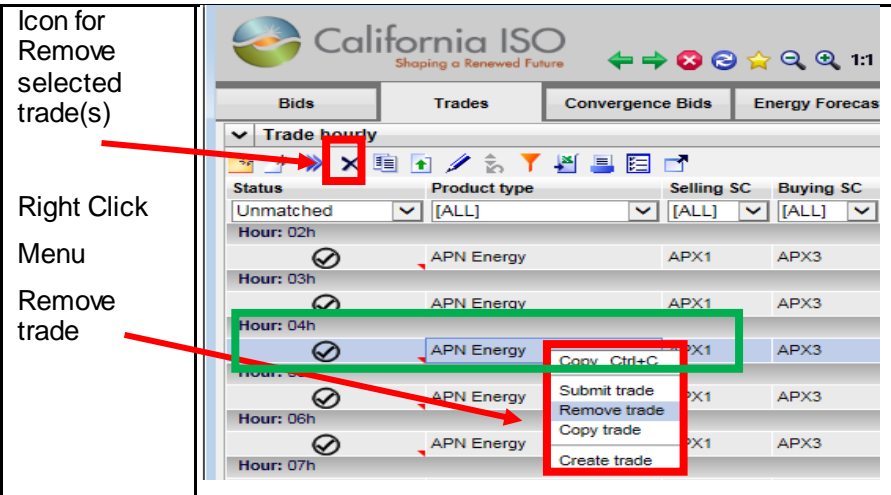


Figure 60 Copy Trade

4.3.4 Trade Removal

The removal of Trades is similar to removing bids. There are 2 methods that can be used to remove a trade or set of trades. The first is by using the icon from the top of the grid for removing selected trade(s) after selecting a trade or set of trades from the grid. The other option is to use the right-click menu after the trade(s) are selected and then click on Remove trade (shown in figure 61).



Icon for
Remove
selected
trade(s)

Right Click
Menu
Remove
trade



Multi Row selected.

Status	Product type	Selling SC	Buying SC
Unmatched	[ALL]	[ALL]	[ALL]
Hour: 03h	APN Energy	APX1	APX3
Hour: 04h	APN Energy	APX1	APX3
Hour: 05h	APN Energy	APX1	APX3
Hour: 06h	APN Energy	APX1	APX3
Hour: 07h	APN Energy	APX1	APX3

Figure 61 Trade Removal



5 Convergence Bids

Convergence Bids (CB) are for the Day-Ahead Market only and are submitted for a full 24-hour period that must contain at least 1 market interval (Hourly bid) and may be submitted up to 7 days ahead of the target market date. Convergence Bids are for energy only.

Submission of a CB that becomes valid will also be subject to Market Clearing where the CB bid will have a Bid Credit Status returned based on available collateral.

If the Bid Credit Status is returned as Approved the bid will remain as Valid, if the Bid Credit Status is returned as Disapproved the bid will become invalid.

CB are defined with having the below entered into the bid:

Trading Date

Scheduling Coordinator (must be associated with a CB Entity in order to submit Convergence Bid.)

Resource Type (Virtual Demand or Virtual Supply)

Product Type (Energy only)

Location (Individual Pnode or Aggregate Pnode)

Tie (will only populate IF the Location selected is associated with a Tie)

5.1 Convergence Bids Display

Figure 62 displays the Convergence Bidding tab shows the Convergence bid summary data for a select trade date and Coordinator.

Status	Bid credit status	Location name	Energy	Virtual demand	Virtual supply	Submitted	Market status
✓	Approved	TH_NP15_GEN_OFFPEAK-APND	✓		✓	01/25/2018 07:55	🔒 Closed
✓	Approved	TH_NP15_GEN_ONPEAK-APND	✓		✓	01/25/2018 07:55	🔒 Closed

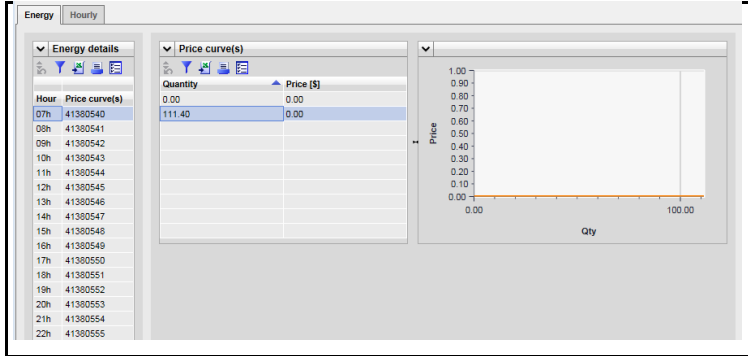


Figure 62 Convergence Bid summary

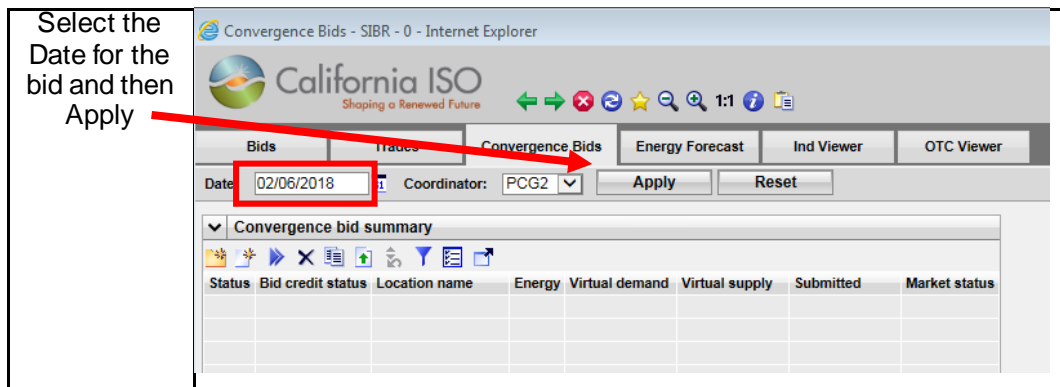
5.2 Convergence Bids Create

This section will take the user step-by-step through the bid entry process. The scenario used in this walkthrough is straightforward and designed to take the user through each of the basic bid-entry steps. Convergence Bids only contain the Energy Product.

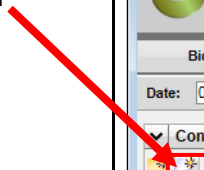
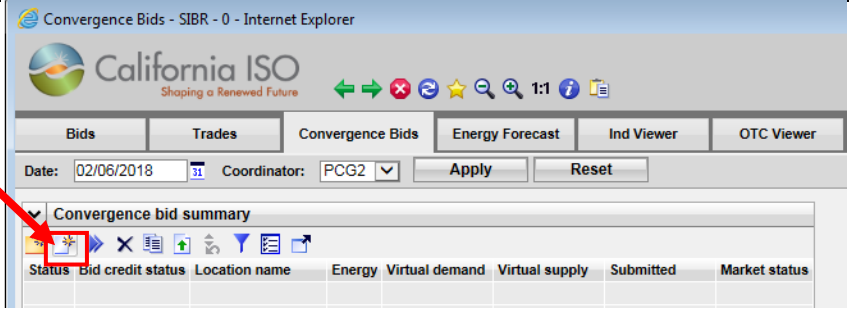
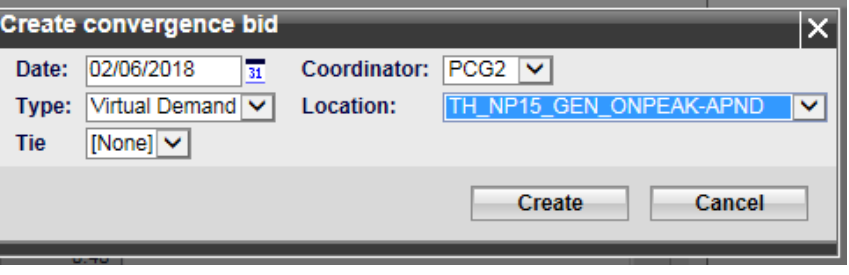
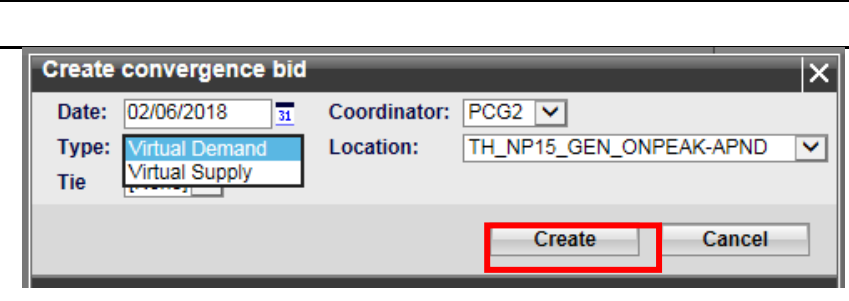
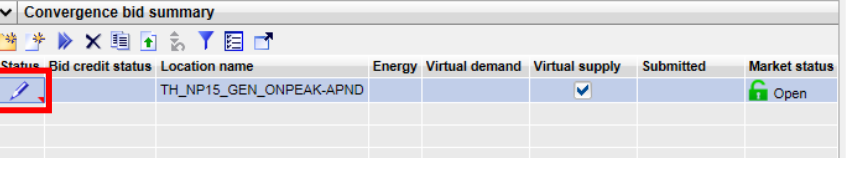
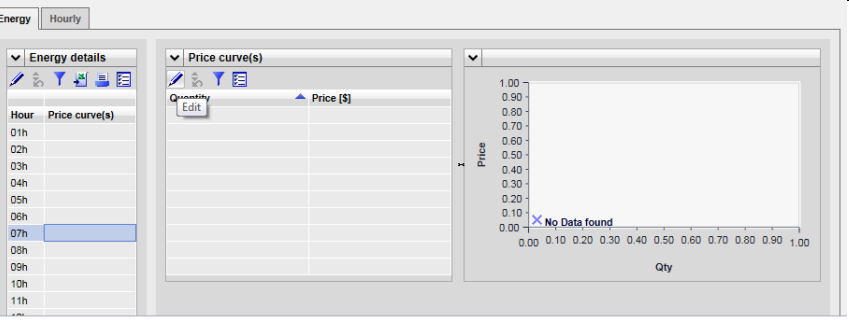
From the Bids tab on the Bid summary clicking on the create icon will generate a created bid for editing. The steps are outlined on the next page in figure 63.

Creating a Convergence bid is only allowed in the Day -Ahead Market and the header filter will display a date selection and Coordinator.

In the example we have selected the 6ht of February and a Coordinator on the header and hit the Apply button.





<p>Select the Create bid icon</p> 	
<p>Coordinator Location</p>	
<p>(Demand or Supply) And location</p>	
<p>Created Status for CB now exists on summary.</p>	
<p>Click on edit icon in Price Curve to create a curve for that hour.</p>	



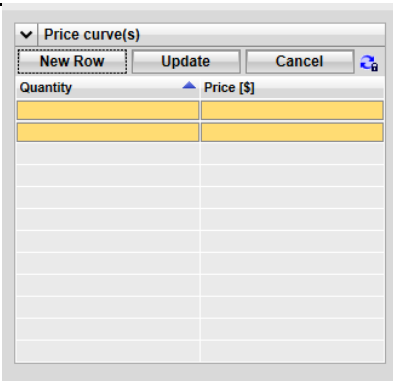
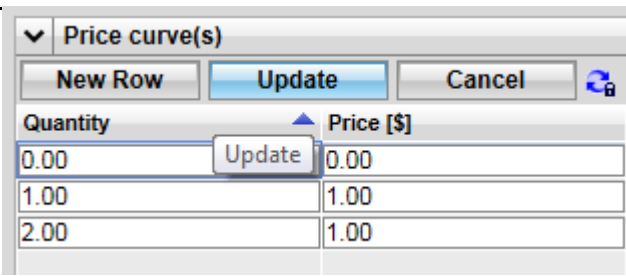
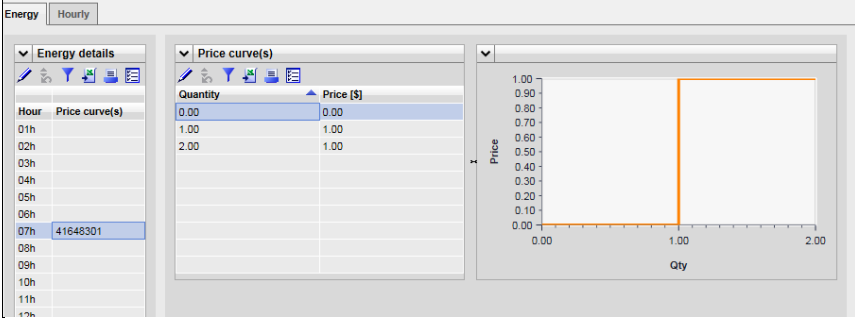
<p>After edit is selected click on New Row twice to create editable curve, you can add more rows as needed.</p>	
<p>Make sure to hit Update after entering data.</p>	
<p>Now there is a Convergence bid with a price curve in HE7. Curves may be entered for 1 or more hours.</p>	

Figure 63 Create Convergence Bid

You may also use the input accelerators to enter curve data from 1 hour to another (refer to section 2.2.4 for these features).

5.3 Convergence Bids Submit

Bids that are in a Created status are available for submission, if a bid is not in a Created status, there will be an error on submit that will show on the message pane in the bottom of the screen.

The user can submit 1 or more bids, and there is an option to submit all.

On a Created bid there is an icon to submit or you can select 1 or more rows in the summary grid and right click to bring the menu up to Submit. This is shown below for the Created bids in figure 64.

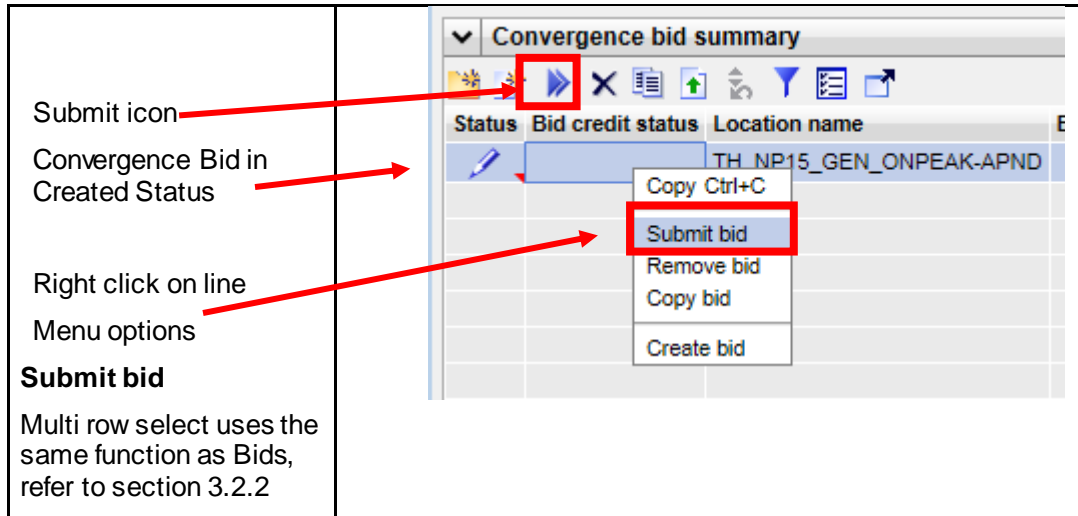


Figure 64 Submit Convergence Bid

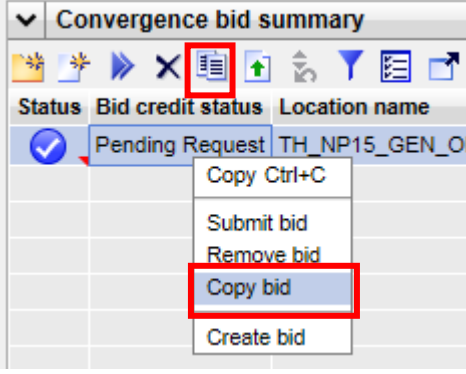
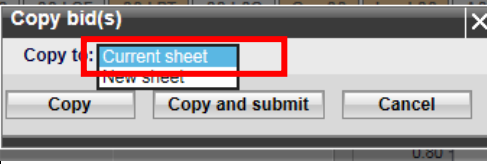
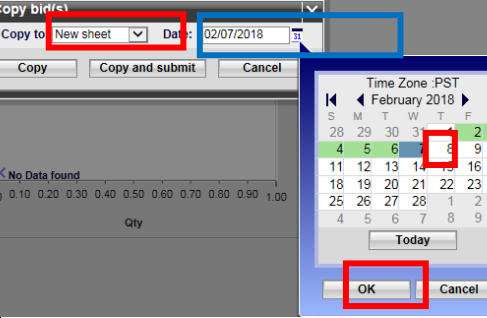
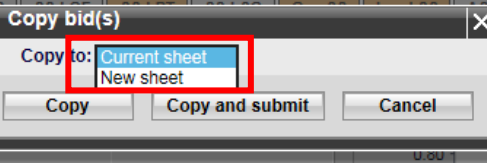
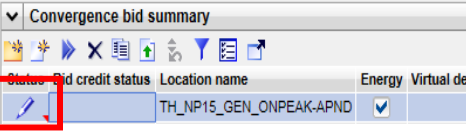
5.4 Convergence Bids Copy

To copy an existing bid for editing or submission can be done using the copy icon or by selecting rows from the Bid summary and right click to copy. You can copy to either the current sheet for editing the existing bid or to a new sheet for a different date. After the 'Copy to' has been selected you can either select Copy, Copy and submit or Cancel the copy.

If selecting a New sheet and specifying a date either in the date column manually or by selecting a date from the calendar pop-out, when the copy is performed the Bid summary will go to that date.

Copy will allow for editing of the bid prior to submission, Copy and submit will submit the copied bid and Cancel will cancel the operation and return to the Bid summary. Please see the below for an illustration on how to copy in figure 65.



<p>Copy icon</p> <p>Right click menu</p> <p>Select Copy bid</p>	
<p>Copy to: Current sheet</p>	
<p>Copy to: New sheet</p> <p>Date display and calendar pop-out.</p> <p>Select date then OK.</p>	
<p>Using copy for either Current sheet or New sheet</p>	
<p>Copied bids will show as Created</p>	

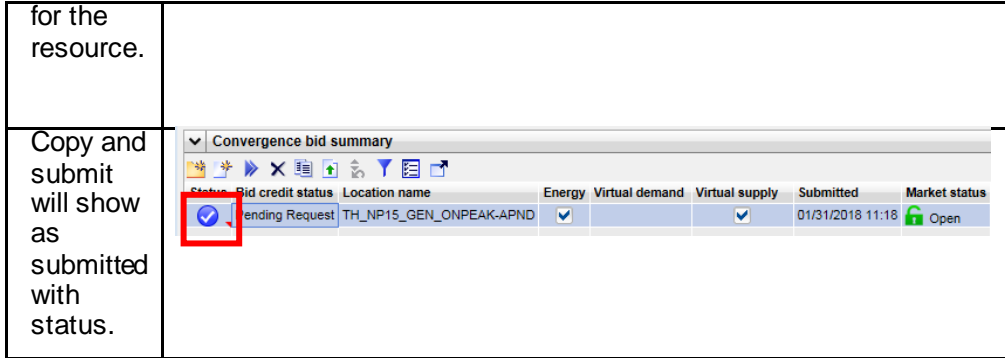


Figure 65 Copy Convergence Bids

5.5 Convergence Bids Remove

To remove a bid select the row or rows from the Bid summary display and then use either the icon for remove bids or right click and select the remove bids from the menu. This is illustrated in figure 66 below.

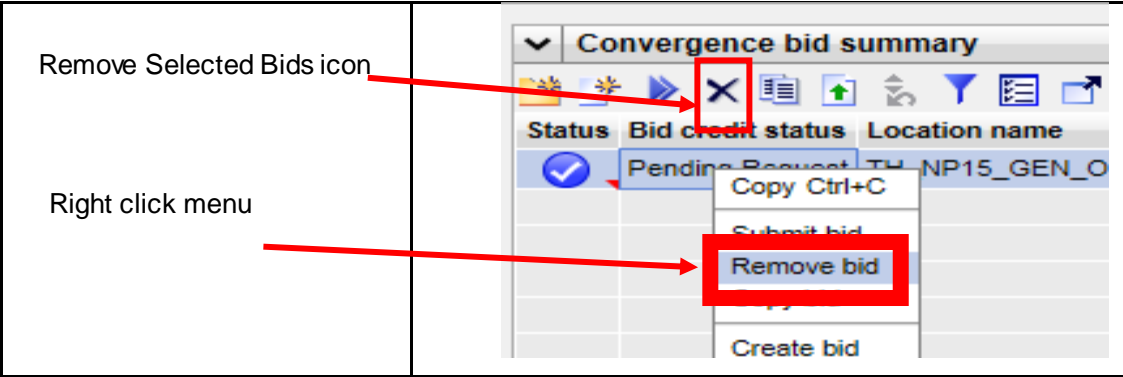


Figure 66 Remove Convergence Bids

6 Energy Forecast Screen *this is now sent to ALFS*

The Energy Forecast Screen is used to submit Energy Forecasts for Variable Energy Resources (VER) and Load Serving Generators (LSG). This data is represented in 5 minute intervals for a resource that will be sent to the Automated Load Forecast System (ALFS) and over-ride the existing 5 minute data for the resource.

This data is also sent to the market system to be used for the resource in optimization.


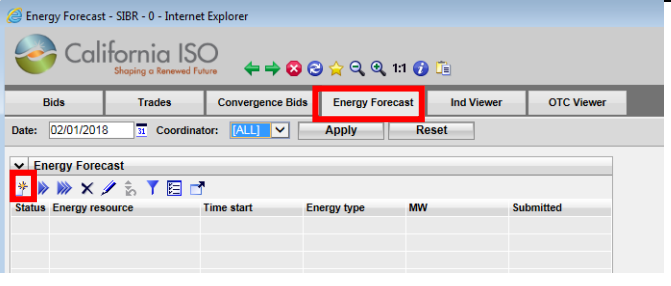
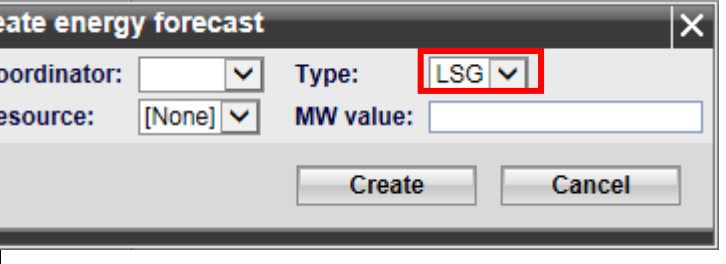
6.1 Energy Forecast Create

Must be logged in to the SIBR system and a resource must be eligible from Master File to be allowed to submit an Energy Forecast. This is an election on the RDT to allow SC submissions for Forecast data. The following steps are illustrated in figure 67 below.

Navigate to the Energy Forecast Screen page by clicking on the Energy Forecast tab in the SIBR application.

Enter a MW value for the Energy Forecast to be used. Then select OK.

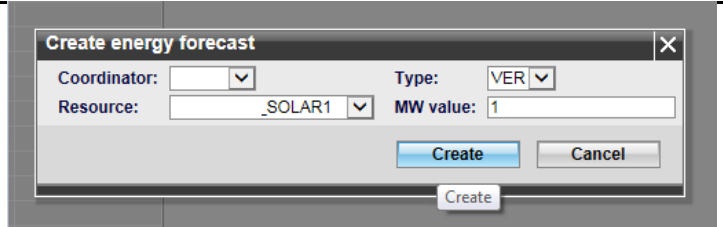
This will populate the forecast for then next set of available time periods for the horizon. And will be displayed on the screen.

<p>Click on the Energy Forecast tab in the SIBR application.</p> <p>Select the Create energy forecast icon. </p>	
<p>Select Criteria from the window for Coordinator, Type (VER or LSG), Resource, and MW value.</p>	



Enter a MW value for the Energy Forecast to be used.

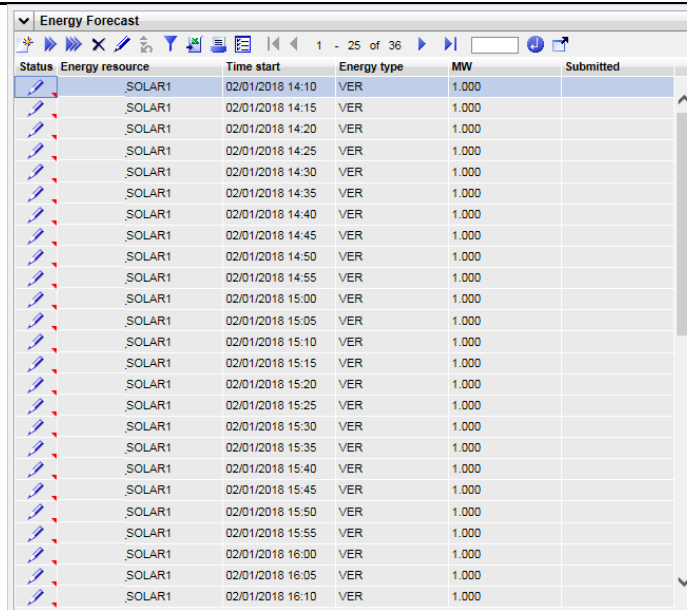
Once the data is entered click on 'Create' button.



The dialog box titled "Create energy forecast" contains the following fields and buttons:

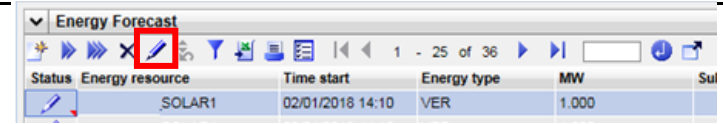
- Coordinator: [Dropdown menu]
- Type: VER [Dropdown menu]
- Resource: [Dropdown menu] showing "_SOLAR1"
- MW value: 1 [Text input field]
- Buttons: "Create" (highlighted in blue), "Cancel", and a smaller "Create" button at the bottom.

All created Energy Forecasts use the same initial value, these are now created and ready for submission.



Status	Energy resource	Time start	Energy type	MW	Submitted
[Edit icon]	SOLAR1	02/01/2018 14:10	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 14:15	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 14:20	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 14:25	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 14:30	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 14:35	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 14:40	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 14:45	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 14:50	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 14:55	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 15:00	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 15:05	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 15:10	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 15:15	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 15:20	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 15:25	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 15:30	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 15:35	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 15:40	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 15:45	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 15:50	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 15:55	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 16:00	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 16:05	VER	1.000	
[Edit icon]	SOLAR1	02/01/2018 16:10	VER	1.000	

All initial created EF will have the same value, to edit specific intervals select the edit icon.



Status	Energy resource	Time start	Energy type	MW	Sul
[Edit icon]	SOLAR1	02/01/2018 14:10	VER	1.000	

The edit icon (a pencil) in the first row of the table is highlighted with a red square.



Enter new values for
respective intervals and
then click Update.

Status	Energy resource	Time start	Energy type	MW	Submitted
Created	_SOLAR1	02/01/2018 15:00	VER	1.000	
Created	_SOLAR1	02/01/2018 15:05	VER	1.000	
Created	_SOLAR1	02/01/2018 15:10	VER	1.000	
Created	_SOLAR1	02/01/2018 15:15	VER	1.000	
Created	_SOLAR1	02/01/2018 15:20	VER	1.000	
Created	_SOLAR1	02/01/2018 15:25	VER	1.000	
Created	_SOLAR1	02/01/2018 15:30	VER	1.000	
Created	_SOLAR1	02/01/2018 15:35	VER	1.000	
Created	_SOLAR1	02/01/2018 15:40	VER	1.000	
Created	_SOLAR1	02/01/2018 15:45	VER	1.000	
Created	_SOLAR1	02/01/2018 15:50	VER	1.000	
Created	_SOLAR1	02/01/2018 15:55	VER	1.000	
Created	_SOLAR1	02/01/2018 16:00	VER	1.000	
Created	_SOLAR1	02/01/2018 16:05	VER	1.000	
Created	_SOLAR1	02/01/2018 16:10	VER	1.000	
Created	_SOLAR1	02/01/2018 16:15	VER	1.000	
Created	_SOLAR1	02/01/2018 16:20	VER	1.000	
Created	_SOLAR1	02/01/2018 16:25	VER	1.000	
Created	_SOLAR1	02/01/2018 16:30	VER	1.000	
Created	_SOLAR1	02/01/2018 16:35	VER	1.000	
Created	_SOLAR1	02/01/2018 16:40	VER	1.000	
Created	_SOLAR1	02/01/2018 16:45	VER	1.000	
Created	_SOLAR1	02/01/2018 16:50	VER	1.000	
Created	_SOLAR1	02/01/2018 16:55	VER	1.000	
Created	_SOLAR1	02/01/2018 17:00	VER	1.000	

Figure 67 Energy Forecast Create

6.2 Energy Forecast Submit or Remove

Submitting the Energy Forecast is similar to all submit actions for SIBR by using the Submit icon or using the right click menu option. There is also an additional submit icon that submits ALL created Energy forecasts at once, this is useful if the intent is to submit for all 36 intervals that are created by default. Figure 68 below illustrates submission and removal of Energy Forecasts (EF).

Select the
submit icon
for selected
row or
rows.

Status	Energy resource	Time start	Energy type	MW	Submitted
	_SOLAR1	02/01/2018 14:20	VER	1.000	
	_SOLAR1	02/01/2018 14:25	VER	1.000	
	_SOLAR1	02/01/2018 14:30	VER	1.000	



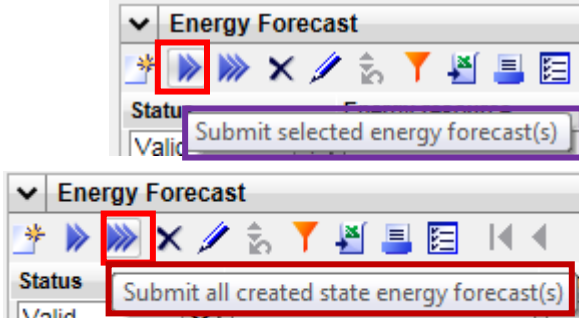
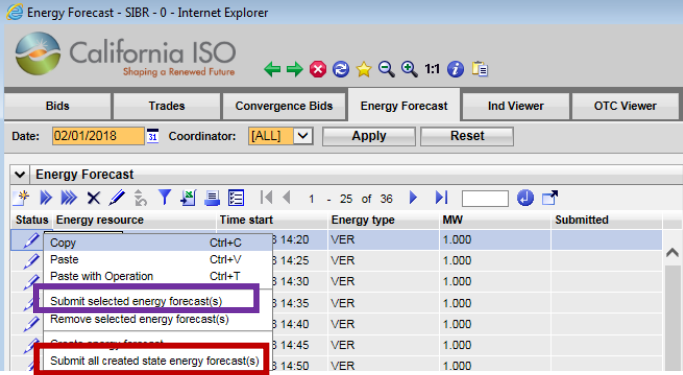
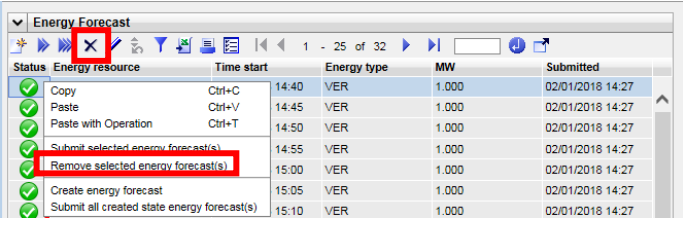
<p>Selected option</p> <p>Or</p> <p>ALL option</p>	
<p>Right click menu</p> <p>Selected or All</p>	
<p>Removing Selected EF</p>	

Figure 68 Energy Forecast Submission and Removal

7 Export Priority Report Screen

The Export Priority Screen has 2 sub tabs, one for Generator and the other for Export.

If using the Generator tab it provides users with the ability to view the Eligible Export Capacity that exists on their Generator that is supporting an Export PT Self-Schedule that named them as a Support Resource for that market period. This is for both DAM and RTM.

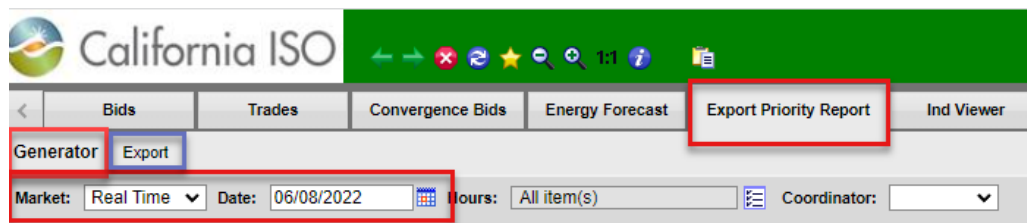
If using the Export tab it will show the Export and Support Resource and if it is fully supported as a PT Self-Schedule.

The following screen shots will show examples of the information displayed in the Export Priority Report Screen.

7.1 Viewing Information Export Priority Screen

Viewing the Export Priority Screen by clicking on the Export Priority Report tab in SIBR.

There are options to show Generator or Export depending on which SC is associated with the certificate. If both the support resource and the export resource belong to the same SC you could view both. The Market drop down can be changed from Real Time to Day Ahead as well as for which date is needed. If you switch back from Generator to Export it will default to current date so you may have to select date again.





7.1.1 Generator tab Export Priority Screen

For the data shown on the **Generator** sub tab:

Hour	Hour Ending (1 – 24)
Resource ID	Support Resource name
EEC	Eligible Export Capacity determined by SIBR rules.
Unused EEC	Based on what the EEC is and the sum of all PT Self-Schedules using the support resource for that hour. If there is a negative Unused portion (in red) the Export will not retain the PT status for that hour.
DA EEC (RTM market only)	Day Ahead Eligible Export Capacity determined by SIBR rules.
Unused DAECC (RTM market only)	Based on what the DA EEC is and the sum of all PT Self-Schedules using the support resource for that hour.
Export resource name	Name of Export resource
Export PT SS-STD	Quantity of the PT Self-Schedule on the Export.
DAPT in DAM (RTM market only)	Does the Export have a DAPT status.



Day Ahead Market selected:

Generator - MAPTEST SIBR 193:2 3.5.8-20220423 - 0 - Google Chrome
 maptest-sibr.lb.ete.caiso.com/sibr/default.do?isTopWindow=true&uid=33102

California ISO

Bids Trades Convergence Bids Energy Forecast Export Priority Report

Generator | Export

Market: **Day Ahead** Date: 06/10/2022 Hours: All item(s)

Hour	Resource ID	EEC	Unused EEC	Export resource name	Export PT SS-STD
01h	l	30.07	27.07	£	_0001 3
02h	l	29.32	26.32	£	_0001 3
03h	l	27.6	24.6	£	_0001 3
04h	l	25.47	22.47	£	_0001 3
05h	l	23.98	20.98	£	_0001 3
06h	l	24.8	21.8	£	_0001 3
07h	l	25.23	16.23	£	_0001 9
08h	l	27.19	18.19	£	_0001 9
09h	l	25.19	16.19	£	_0001 9
10h	l	24.32	12.32	£	_0001 12
11h	l	22.36	-0.64	£	_0001 23
12h	l	17.33	-12.67	£	_0001 30
13h	l	14.4	-8.6	£	_0001 23
14h	l	13.67	-8.33	£	_0001 22

For hours where the Unused EEC is negative there is not enough EEC from the support resource to support the Export PT SS-STD quantity they specified, this will result in conversion to LPT status.



Real Time Market selected: Note DA EEC, Unused DA EEC and DAPT in DAM.

Hour	Resource ID	EEC	Unused EEC	DA EEC	Unused DAEEC	Export resource name	Export PT SS-STD	DAPT in DAM
01h	l	78	73	0	-5	._0001 1	1	N
01h	l	78	73	0	-5	._0003 4	4	N
02h	l	78	73	0	-5	._0001 1	1	N
02h	l	78	73	0	-5	._0003 4	4	N
03h	l	78	73	0	-4	._0001 1	1	N
03h	l	78	73	0	-4	._0003 3	3	N
04h	l	78	73	0	-16	._0001 5	5	N
04h	l	78	73	0	-16	._0003 5	5	N
05h	l	78	73	0	-16	._0001 10	10	N
06h	l	78	73	0	-16	._0001 10	10	N
11h	l	78	73	0	-1	._0001 1	1	N
12h	l	78	122	0	-200	._0001 200	200	N
13h	l	78	73	0	-3	._0001 3	3	N
14h	l	78	73	0	-2	._0001 2	2	N
15h	l	78	73	0	-2	._0001 2	2	N
16h	l	78	73	0	-2	._0001 2	2	N
17h	l	78	73	0	-2	._0001 2	2	N
18h	l	78	73	0	-1	._0001 1	1	N
19h	l	78	73	0	-1	._0001 1	1	N
20h	l	78	73	0	-1	._0001 1	1	N
21h	l	78	73	0	-1	._0001 1	1	N
22h	l	78	73	0	-1	._0001 1	1	N
23h	l	78	73	0	-1	._0001 1	1	N

If there is an N for the DAPT in DAM that means there was no DAM bid for the export with a DAPT status, either there was no DAM bid with a support resource or the export had a DAM bid with support resource that was converted to LPT due to not enough EEC.

It is possible to retain RTM PT status even when the DA EEC is not supporting the PT SS-STD quantity if there was no DAPT.

DA EEC will be calculated on every RTM Export with a PT SS-STD.

Day-Ahead Eligible PT Export Capacity calculated as the positive difference between a) and b).

a) the **RUC Schedule of that Supporting Resource** and Trading Hour **minus** the Load Following Up Capacity specified in any **Load Following Up Self-Provision Bid** Component for that trading Hour in that Supporting Resource Bid.

b) the **higher** of

i) the positive difference between the greater of the RA Capacity or the Flexible RA Capacity if the RA Flag or the Flexible RA Flag is "Yes" for that **Supporting Resource** and Trading Hour, or zero otherwise, and the sum of the Day-Ahead Regulation Up, Spinning Reserve, and Non-Spinning Reserve Awards for that Supporting Resource and Trading Hour.

or ii) the sum of the Self-Schedule Quantities specified in all TOR and ETC Self-Schedule Bid Components for that Trading Hour in that **Supporting Resource** Bid.

7.1.2 Export tab Export Priority Screen

For the data shown on the **Export** sub tab:

Hour	Hour Ending (1 – 24)
Resource ID	Export Resource name.
Support resource name	Name of support resource.
Export PT SS-STD	Quantity of the PT Self-Schedule on the Export.
Fully supported EEC	Yes No flag for if the Export is fully supported by the EEC on the support resource.
Fully supported DAEEC (RTM market only)	Yes No flag for if the Export is fully supported by the DA EEC on the support resource.
DAPT in DAM (RTM market only)	Does the Export have a DAPT status.



Day Ahead Market:

Export - MAPTEST SIBR 193;2 3.5.8-20220423 - 0 - Work - Microsoft Edge

https://maptest-sibr.lb.ete.caiso.com/sibr/default.do?isTopWindow=true&uid=786362

California ISO

Bids Trades Convergence Bids Energy Forecast Export Priority Report Ind Viewer

Generator | Export

Market: Day Ahead Date: 06/10/2022 Hours: All item(s) Coordinator:

Hour	Resource ID	Support resource name	Export PT	SS-STD	Fully supported EEC
01h	E_F_0001		3		Y
02h	E_F_0001		3		Y
03h	E_F_0001		3		Y
04h	E_F_0001		3		Y
05h	E_F_0001		3		Y
06h	E_F_0001		3		Y
07h	E_F_0001		9		Y
08h	E_F_0001		9		Y
09h	E_F_0001		9		Y
10h	E_F_0001		12		Y
11h	E_F_0001		23		N
12h	E_F_0001		30		N
13h	E_F_0001		23		N
14h	E_F_0001		22		N
15h	E_F_0001		33		N
16h	E_F_0001		3		Y
17h	E_F_0001		3		Y
18h	E_F_0001		3		Y
19h	E_F_0001		3		Y
20h	E_F_0001		3		Y

Fully supported EEC is N for HE11 – HE15 and those hours will be converted to an LPT SS for the Export in DAM bid.



Real Time Market:

California ISO

Navigation: Bids, Trades, Convergence Bids, Energy Forecast, Export Priority Report, Ind Viewer, OTC View

Generator: Export

Market: Real Time | Date: 06/08/2022 | Hours: All item(s) | Coordinator: [Dropdown]

Hour	Resource ID	Support resource name	Export PT SS-STD	Fully supported EEC	Fully supported DAEEC	DAPT in DAM
01h	.E_F_0003		4	Y	N	N
01h	.E_F_0001		1	Y	N	N
02h	.E_F_0003		4	Y	N	N
02h	.E_F_0001		1	Y	N	N
03h	.E_F_0003		3	Y	N	N
03h	.E_F_0001		1	Y	N	N
04h	.E_F_0003		5	Y	N	N
04h	.E_F_0001		5	Y	N	N
05h	.E_F_0001		10	Y	N	N
06h	.E_F_0001		10	Y	N	N
11h	.E_F_0001		1	Y	N	N
12h	.E_F_0001		200	N	N	N
13h	.E_F_0001		3	Y	N	N
14h	.E_F_0001		2	Y	N	N
15h	.E_F_0001		2	Y	N	N
16h	.E_F_0001		2	Y	N	N
17h	.E_F_0001		2	Y	N	N
18h	.E_F_0001		1	Y	N	N
19h	.E_F_0001		1	Y	N	N
20h	.E_F_0001		1	Y	N	N
21h	.E_F_0001		1	Y	N	N
22h	.E_F_0001		1	Y	N	N
23h	.E_F_0001		1	Y	N	N
24h	.E_F_0001		1	Y	N	N

EEC - Eligible PT export capacity
DAEEC - Day-Ahead eligible PT export capacity

For hours where the Fully supported DAEEC is N, if there was no DAPT in DAM bid then the conversion to LPT will be based on the EEC in RTM. Shown is for RTM HE12 which will be converted to LPT due to not enough EEC on the support resource for that hour. The remainin hours will retain the PT SS-STD since there was no DAM bid with a DAPT.

8 Indicator Viewer Screen

The indicator Screen provides users with the ability to view special indicators that apply to ETC/TOR self-schedules and Wheeling Transactions.

Since these types of schedules must be submitted balanced the Indicator screen allows users to view balance indicators which will display Y if the schedule is balanced or N if it is not balanced by Contract Reference, and Wheeling Counter Resource. In the case of ETC/TOR self-schedules the Priority Indicator is also displayed for each Contract Reference which shows “Y” if the ETC or TOR self-schedule is within its allotted entitlement amount or “N” if it is exceeding its entitlement amount.

The following screen shots will show examples of the information displayed in the Indicator Screen .

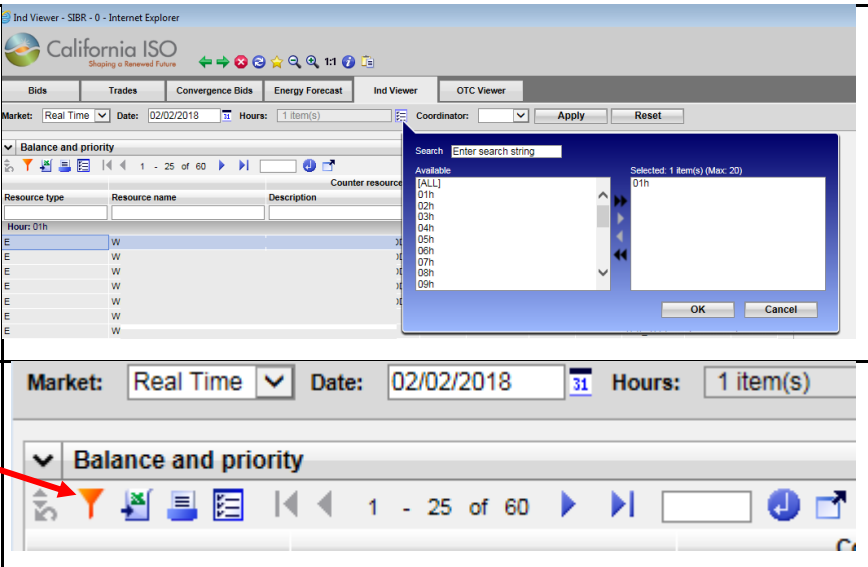
8.1 Viewing Information in the Indicator Viewer Screen

Viewing the indicator Screen by clicking on the Ind Viewer tab in SIBR.

Below are steps illustrating how to view data in figure 69. The user will need to select the Market type, Date (all or subset of hours), Coordinator as part of the header filters and then Apply them. Additional Filtering can be used with the In-Line filters, please refer to section 2.2.1 for In-Line filter options.

Hour selection.
Select from Available (left pane), use arrow to move to the Selected (right pane).
Click OK.

In Line Filter can also be used.





Wheeling Counter Resource	<table border="1"><thead><tr><th colspan="10">Balance and priority</th></tr><tr><th>Resource type</th><th>Resource name</th><th>Description</th><th>Balanced</th><th>Description</th><th>ETC</th><th>Balanced</th><th>Priority</th><th>Description</th><th>TOR</th></tr></thead><tbody><tr><td>Hour: 01h</td><td>W</td><td></td><td>Y</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>Wf</td><td>_E_WHL_</td><td>1</td><td>Wl</td><td>_L_WHL_</td><td>1</td><td>Y</td><td></td><td></td></tr></tbody></table>	Balance and priority										Resource type	Resource name	Description	Balanced	Description	ETC	Balanced	Priority	Description	TOR	Hour: 01h	W		Y								Wf	_E_WHL_	1	Wl	_L_WHL_	1	Y											
Balance and priority																																																		
Resource type	Resource name	Description	Balanced	Description	ETC	Balanced	Priority	Description	TOR																																									
Hour: 01h	W		Y																																															
	Wf	_E_WHL_	1	Wl	_L_WHL_	1	Y																																											
TOR Balance Priority	<table border="1"><thead><tr><th colspan="10">Balance and priority</th></tr><tr><th colspan="3">Counter resource</th><th colspan="3">ETC</th><th colspan="3">TOR</th></tr><tr><th>Resource type</th><th>Resource name</th><th>Description</th><th>Balanced</th><th>Description</th><th>Balanced</th><th>Priority</th><th>Description</th><th>Balanced</th><th>Priority</th></tr></thead><tbody><tr><td>Hour: 01h</td><td>W</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>E</td><td>Wl</td><td></td><td></td><td></td><td></td><td></td><td>115</td><td>Y</td><td>Y</td></tr></tbody></table>	Balance and priority										Counter resource			ETC			TOR			Resource type	Resource name	Description	Balanced	Description	Balanced	Priority	Description	Balanced	Priority	Hour: 01h	W									E	Wl						115	Y	Y
Balance and priority																																																		
Counter resource			ETC			TOR																																												
Resource type	Resource name	Description	Balanced	Description	Balanced	Priority	Description	Balanced	Priority																																									
Hour: 01h	W																																																	
E	Wl						115	Y	Y																																									

Figure 69 Indicator Viewer Selection



9 OTC Viewer Screen

The OTC Screen provides users with the ability to view by Interchange name the Import and Export Limits that SIBR receives from the Existing Transmission Contracts Calculation (ETCC) application. The data from ETCC is used in SIBR to validate ETC/TOR entitlement values as well as Interchange data for Open Tie conditions.

9.1 Viewing Information in the OTC Viewer Screen

Viewing the OTC Viewer Screen by clicking on the OTC Viewer tab in SIBR.

Below are steps illustrating how to view data in figure 70. The user will need to select the Date (all or subset of hours), and Interchange as part of the header filters and then Apply them. Additional Filtering can be used with the In-Line filters, please refer to section 2.2.1 for In-Line filter options.

Hour selection.

Select from Available (left pane), use arrow to move to the Selected (right pane).
Click OK.



Data will display based on the filter criteria provided.

OTC Viewer - MAPTEST SIBR - 0 - Internet Explorer

California ISO

SIEMENS MAPTEST SIBR

Bids Trades Convergence Bids Energy forecast Ind Viewer OTC Viewer

Date: 06/12/2018 Hours: All item(s) Interchange: 1 item(s) Apply Reset

Limit values

Hour	Interchange name	Import limit	Export limit	Cutoff import limit	Cutoff export limit	Isolated tie condition
01h	PALOVRDE_ITC	3628	3628	3628	3628	N
02h	PALOVRDE_ITC	3628	3628	3628	3628	N
03h	PALOVRDE_ITC	3628	3628	3628	3628	N
04h	PALOVRDE_ITC	3628	3628	3628	3628	N
05h	PALOVRDE_ITC	3628	3628	3628	3628	N
06h	PALOVRDE_ITC	3628	3628	3628	3628	N
07h	PALOVRDE_ITC	3628	3628	3628	3628	N
08h	PALOVRDE_ITC	3628	3628	3628	3628	N
09h	PALOVRDE_ITC	3628	3628	3628	3628	N
10h	PALOVRDE_ITC	3628	3628	3628	3628	N
11h	PALOVRDE_ITC	3628	3628	3628	3628	N
12h	PALOVRDE_ITC	3628	3628	3628	3628	N
13h	PALOVRDE_ITC	3628	3628	3628	3628	N
14h	PALOVRDE_ITC	3628	3628	3628	3628	N
15h	PALOVRDE_ITC	3628	3628	3628	3628	N
16h	PALOVRDE_ITC	3628	3628	3628	3628	N
17h	PALOVRDE_ITC	3628	3628	3628	3628	N
18h	PALOVRDE_ITC	3628	3628	3628	3628	N
19h	PALOVRDE_ITC	3628	3628	3628	3628	N
20h	PALOVRDE_ITC	3628	3628	3628	3628	N
21h	PALOVRDE_ITC	3628	3628	3628	3628	N
22h	PALOVRDE_ITC	3628	3628	3628	3628	N
23h	PALOVRDE_ITC	3628	3628	3628	3628	N

CONNECTED SSIBR | Read/Write 06/12/2018 13:35 PDT

Figure 70 OTC Viewer Selection

10 Messages Screen

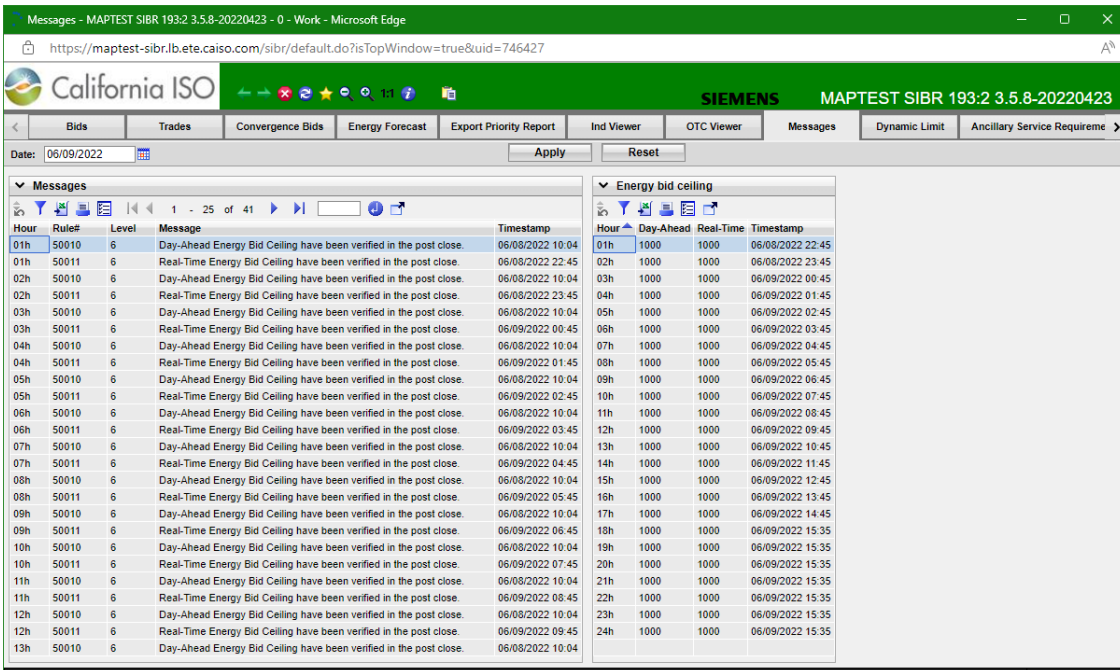
The Messages Screen provides users with the ability to view the Energy Bid Ceiling for each hour and for both the Day Ahead and Real Time market periods.

The following screen shot will show an example of the information displayed in the Messages Screen.

10.1 Viewing Information in the Messages Screen

Viewing the Messages Screen by clicking on the Messages tab in SIBR.

The date drop down is the only option to change for filter criteria. The data is populated 7 days out and is updated on a 5 minute basis to account for any bid data that may impact the ceiling prices.



The screenshot shows the SIBR interface with the 'Messages' tab selected. The date is set to 06/09/2022. The 'Messages' table lists 41 entries, each with an hour, rule number, level, message, and timestamp. The 'Energy bid ceiling' table shows values for Day-Ahead and Real-Time markets for each hour from 01h to 24h, with a timestamp for each entry.

Hour	Rule#	Level	Message	Timestamp
01h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04
01h	50011	6	Real-Time Energy Bid Ceiling have been verified in the post close.	06/08/2022 22:45
02h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04
02h	50011	6	Real-Time Energy Bid Ceiling have been verified in the post close.	06/08/2022 23:45
03h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04
03h	50011	6	Real-Time Energy Bid Ceiling have been verified in the post close.	06/09/2022 00:45
04h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04
04h	50011	6	Real-Time Energy Bid Ceiling have been verified in the post close.	06/08/2022 01:45
05h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04
05h	50011	6	Real-Time Energy Bid Ceiling have been verified in the post close.	06/08/2022 02:45
06h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04
06h	50011	6	Real-Time Energy Bid Ceiling have been verified in the post close.	06/09/2022 03:45
07h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04
07h	50011	6	Real-Time Energy Bid Ceiling have been verified in the post close.	06/09/2022 04:45
08h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04
08h	50011	6	Real-Time Energy Bid Ceiling have been verified in the post close.	06/09/2022 05:45
09h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04
09h	50011	6	Real-Time Energy Bid Ceiling have been verified in the post close.	06/08/2022 06:45
10h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04
10h	50011	6	Real-Time Energy Bid Ceiling have been verified in the post close.	06/09/2022 07:45
11h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04
11h	50011	6	Real-Time Energy Bid Ceiling have been verified in the post close.	06/09/2022 08:45
12h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04
12h	50011	6	Real-Time Energy Bid Ceiling have been verified in the post close.	06/09/2022 09:45
13h	50010	6	Day-Ahead Energy Bid Ceiling have been verified in the post close.	06/08/2022 10:04

Hour	Day-Ahead	Real-Time	Timestamp
01h	1000	1000	06/08/2022 22:45
02h	1000	1000	06/08/2022 23:45
03h	1000	1000	06/09/2022 00:45
04h	1000	1000	06/09/2022 01:45
05h	1000	1000	06/09/2022 02:45
06h	1000	1000	06/09/2022 03:45
07h	1000	1000	06/09/2022 04:45
08h	1000	1000	06/09/2022 05:45
09h	1000	1000	06/09/2022 06:45
10h	1000	1000	06/09/2022 07:45
11h	1000	1000	06/09/2022 08:45
12h	1000	1000	06/09/2022 09:45
13h	1000	1000	06/09/2022 10:45
14h	1000	1000	06/09/2022 11:45
15h	1000	1000	06/09/2022 12:45
16h	1000	1000	06/09/2022 13:45
17h	1000	1000	06/09/2022 14:45
18h	1000	1000	06/09/2022 15:35
19h	1000	1000	06/09/2022 15:35
20h	1000	1000	06/09/2022 15:35
21h	1000	1000	06/09/2022 15:35
22h	1000	1000	06/09/2022 15:35
23h	1000	1000	06/09/2022 15:35
24h	1000	1000	06/09/2022 15:35

If a condition exist in which changes the soft cap of \$1000.00 the respective Energy bid ceiling would show a 2000 value. If it is in the Day-Ahead it will display in the Day-Ahead column, if in the Real-Time it will display in the Real-Time column.

11 Dynamic Limit Screen

The Dynamic Limit Screen is used to submit minimum and maximum anticipated operating limits for a **Hybrid resource**. This data is represented in 5 minute intervals for a resource that will be sent to the Real-Time market and over-ride the existing 5 minute data for the resource.

The following screen shots will show examples of the information displayed in the Dynamic Limit Screen.

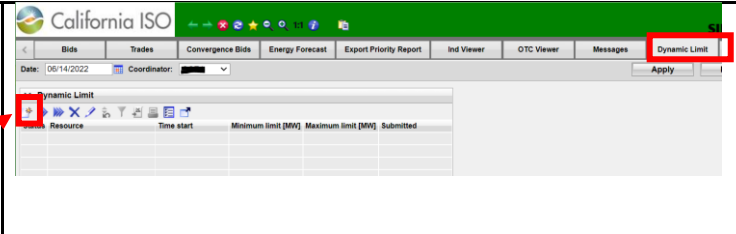
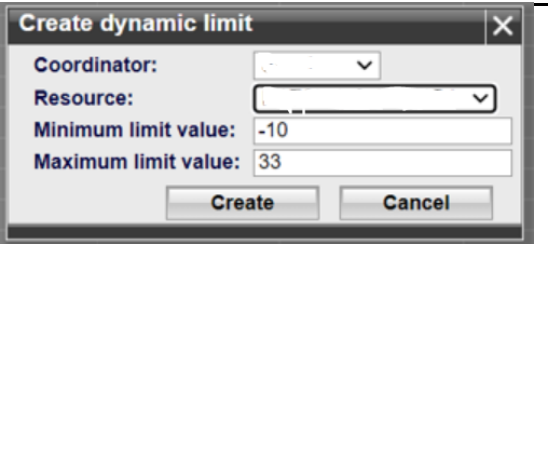
11.1 Dynamic Limit Create

Must be logged in to the SIBR system and a resource must be eligible from Master File to be allowed to submit Dynamic Limit for a **Hybrid** resource. The following steps are illustrated in figure xx below.

Navigate to the Dynamic Limit Screen page by clicking on the Dynamic Limit tab in the SIBR application.

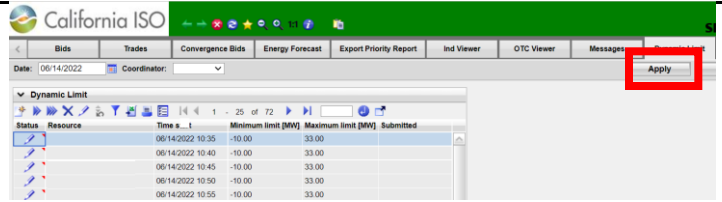
Enter a MW value for the Energy Forecast to be used. Then select OK.

This will populate the forecast for the next set of available time periods for the horizon. And will be displayed on the screen.

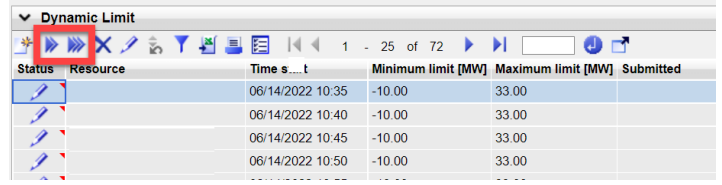
<p>Click on the Dynamic Limit tab in the SIBR application.</p> <p>Select the Create Dynamic Limit icon.</p>	
<p>Coordinator select if needed, Resource will display NGR resources.</p> <p>Not all NGR are Hybrid.</p> <p>Only Hybrid will be allowed to submit a Dynamic Limit.</p> <p>Enter the Minimum limit value and Maximum limit value for the upcoming 5 minute interval data.</p>	



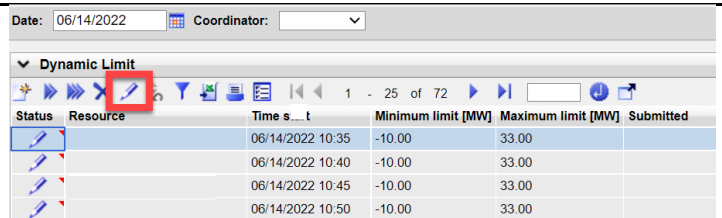
After clicking Create then Click on Apply to view data in the grid.



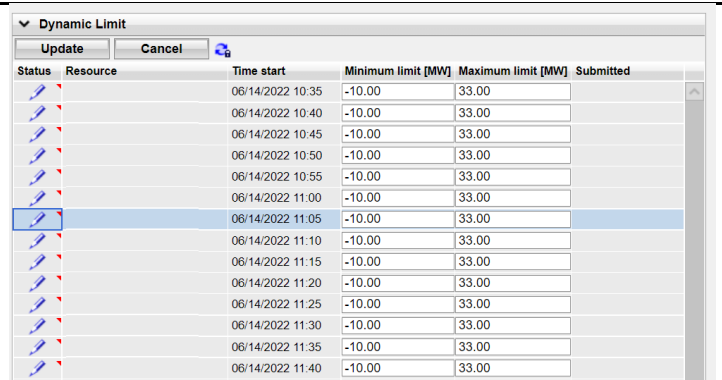
Clicking on the double arrow submits highlighted lines, the triple arrow will submit ALL edited Dynamic Limits.



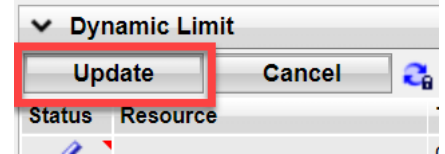
Clicking on the pencil icon will open all editable Dynamic Limits to allow changes for each 5 minute interval.



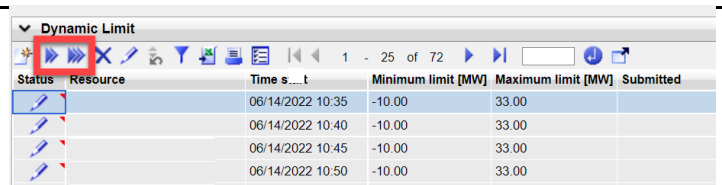
Select the interval or intervals and update the limits as needed.



Make sure to hit Update to save them.



Submit selected rows or all editable Dynamic Limits.





After submit hit Apply and you will see status for submitted Dynamic Limits.

Status	Resource	Time start	Minimum limit [MW]	Maximum limit [MW]	Submitted
✓		06/14/2022 10:50	-10.00	33.00	06/14/2022 10:38
✓		06/14/2022 10:55	-10.00	33.00	06/14/2022 10:38
✓		06/14/2022 11:00	-10.00	33.00	06/14/2022 10:38
✓		06/14/2022 11:05	-10.20	33.00	06/14/2022 10:38
✓		06/14/2022 11:15	-11.00	33.00	06/14/2022 10:38
✓		06/14/2022 11:20	-10.00	33.00	06/14/2022 10:38
✓		06/14/2022 11:25	-10.00	33.00	06/14/2022 10:38
✓		06/14/2022 11:30	-10.00	33.00	06/14/2022 10:38

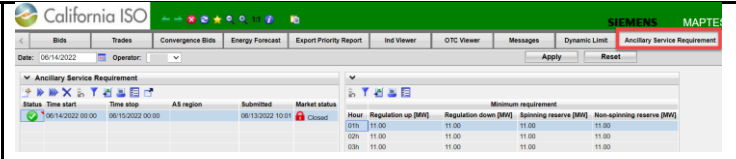
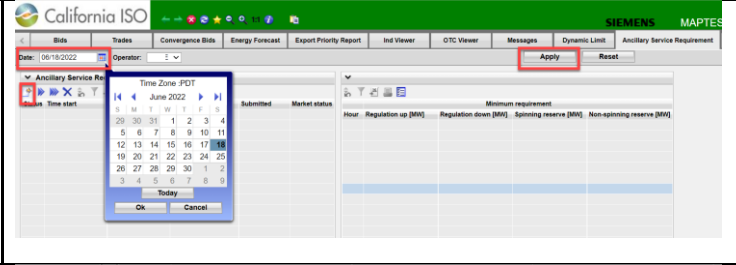
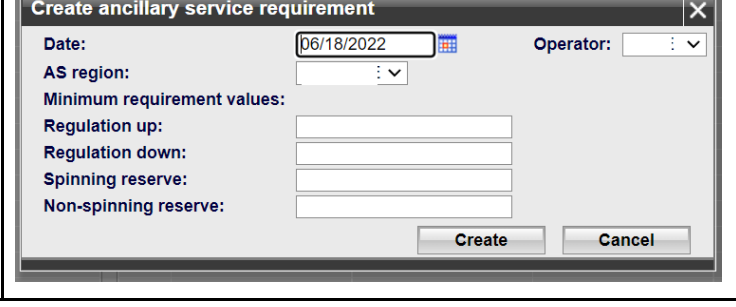
12 Ancillary Service Requirement Screen

The Ancillary Service Requirement (ASR) Screen provides Nodal Pricing Model (NPM) users with the ability to submit and view their NPM Balancing Authority (BA) AS Requirements for each region. To access this data there is a separate role associated to the certificate for the NPM BA, only those provisioned for the role will have access to the tab that displays the information.

The following screen shots will show examples of the information displayed in the ASR Screen.

12.1 Viewing Information in the ASR Screen

Viewing the ASR Screen (for authorized users) clicking on the Ancillary Service Requirement tab in SIBR.

<p>Click on the Dynamic Limit tab in the SIBR application.</p>	
<p>Change date to submit new ASR for. Click on Apply. Select the Create Ancillary service requirement icon to create.</p>	
<p>Operator is the BA. AS Region is for which Region the ASR is for. Enter the ASR for each commodity (there can't be any blanks). Click Create.</p>	



After clicking Create then
Click on Apply to view
data in the grid.

The screenshot shows the 'Ancillary Service Requirement' grid in the SIBR application. The 'Apply' button is highlighted in red, indicating the action to be taken to view the data in the grid.

Clicking on the double
arrow submits
highlighted lines, the
triple arrow will submit
ALL edited ASR for the
region.

The screenshot shows the 'Ancillary Service Requirement' grid. The double arrow icon is highlighted, indicating that clicking it will submit the highlighted lines.

Clicking on the pencil
icon will open all editable
ASR Limits to allow
changes for each
commodity and hour.

The screenshot shows the 'Ancillary Service Requirement' grid. The pencil icon is highlighted, indicating that clicking it will open the ASR Limits for editing.

Select the interval or
intervals and update the
limits as needed.

Update Cancel

Hour	Regulation up [MW]	Regulation down [MW]	Spinning reserve [MW]	Non-spinning reserve [MW]
01h	9.00	14.00	15.00	16.00
02h	10.00	14.00	15.00	16.00
03h	11.00	14.00	15.00	16.00
04h	12.00	15.00	15.00	16.00
05h	12.00	16.00	15.00	16.00
06h	12.00	17.00	15.00	16.00
07h	12.00	14.00	18.00	16.00
08h	12.00	14.00	19.00	16.00
09h	12.00	14.00	15.00	20.00
10h	12.00	14.00	15.00	22.00
11h	12.00	14.00	15.00	16.00
12h	12.00	14.00	15.00	16.00
13h	12.00	14.00	15.00	16.00
14h	12.00	14.00	15.00	16.00
15h	12.00	14.00	15.00	16.00
16h	12.00	14.00	15.00	16.00
17h	12.00	14.00	15.00	16.00
18h	12.00	14.00	15.00	16.00
19h	12.00	14.00	15.00	16.00
20h	12.00	14.00	15.00	16.00
21h	12.00	14.00	15.00	16.00
22h	12.00	14.00	15.00	16.00
23h	12.00	14.00	15.00	16.00
24h	12.00	14.00	15.00	16.00



Make sure to hit Update to save them.

A screenshot of a software interface showing a dialog box with two buttons: 'Update' and 'Cancel'. The 'Update' button is highlighted with a red rectangular box. To the right of the 'Cancel' button is a refresh icon. Below the buttons, there is a table header with the following columns: 'Hour', 'Regulation up [MW]', 'Regulation down [MW]', and 'Spinning res'. Above the table header, the text 'Minimum requirement' is visible.

Submit selected rows or all editable ASR Limits.

A screenshot of the 'Ancillary Service Requirement' dialog box. The title bar reads 'Ancillary Service Requirement'. Below the title bar is a toolbar with several icons. The 'Apply' button, represented by a blue double arrow icon, is highlighted with a red rectangular box. Below the toolbar is a table with the following columns: 'Status', 'Time start', and 'Time stop'. The first row of data shows a status of 'Open', a time start of '06/18/2022 00:00', and a time stop of '06/19/2022 00:00'.

After submit hit Apply and you will see status for submitted ASR Limits.

A screenshot of the main software interface showing the status of submitted ASR Limits. The interface includes a table with columns for 'Date', 'Operator', 'Submitted', and 'Market status'. The 'Submitted' column shows '06/14/2022 14:50' and the 'Market status' column shows 'Open'. Below this is a detailed table of ASR requirements with columns: 'Hour', 'Regulation up [MW]', 'Regulation down [MW]', 'Spinning reserve [MW]', and 'Non-spinning reserve [MW]'. The data rows show values for hours 02h through 12h.

Hour	Regulation up [MW]	Regulation down [MW]	Spinning reserve [MW]	Non-spinning reserve [MW]
02h	14.00	15.00	15.00	16.00
03h	10.00	14.00	15.00	16.00
04h	11.00	14.00	15.00	16.00
05h	12.00	15.00	15.00	16.00
06h	12.00	16.00	15.00	16.00
07h	12.00	17.00	15.00	16.00
08h	12.00	14.00	18.00	16.00
09h	12.00	14.00	19.00	16.00
10h	12.00	14.00	15.00	20.00
11h	12.00	14.00	15.00	22.00
12h	12.00	14.00	15.00	16.00

13 Portfolios

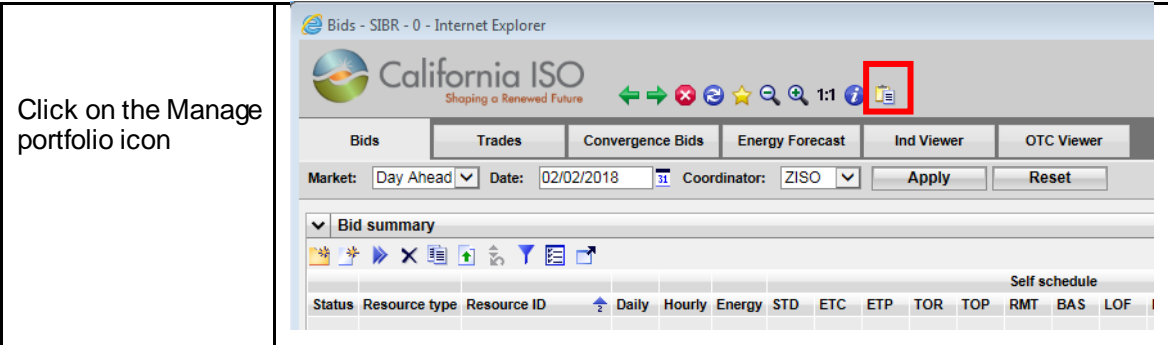
Portfolios offer users the ability to save collections of bids and trades in one or more sheets in a named portfolio for future use. For example there could be a sheet named Unit XYZ DAM generation bids, LAP 123 DAM load bids and DAM Import Bids saved in a portfolio named “weekend” portfolio. These individual portfolio sheets can be retrieved and submitted individually or all three sheets can be submitted at once as an entire portfolio. Portfolios can be created for both the Day-Ahead and the Real-Time market.

The following screen shots walk through the process of creating portfolios and submitting portfolios for bids. The process for trades is the same and can be followed by selecting the manage trades option instead of manage bids from the portfolio tab

13.1 Creating Portfolio Displays

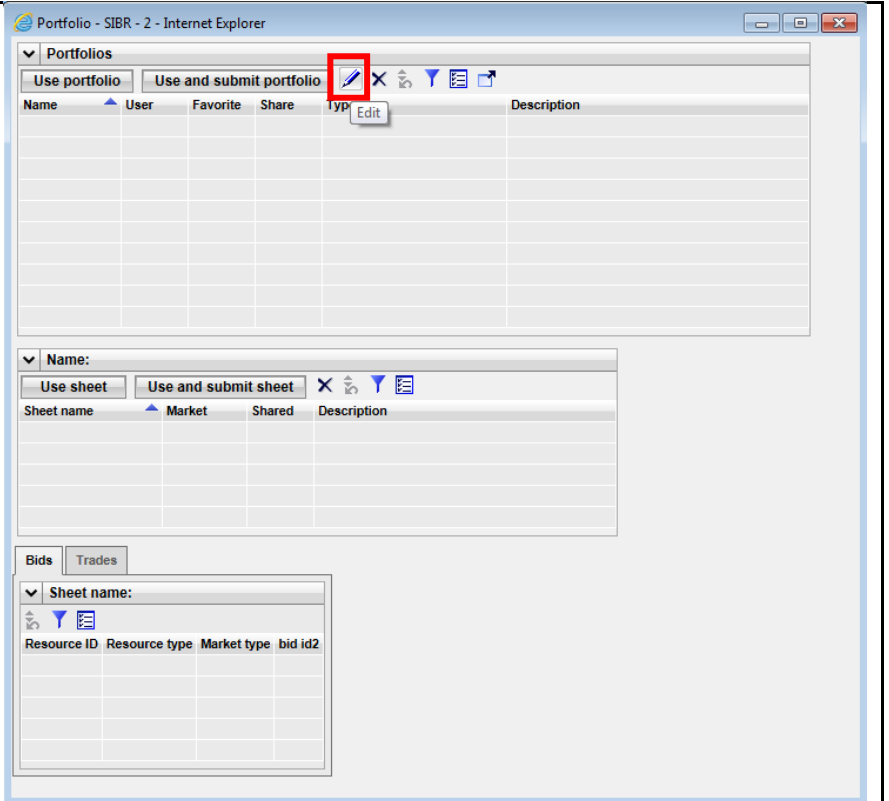
After logging in to the SIBR system creating a portfolio for use later can be done by selecting the Manage Portfolios icon above the tabs that are displayed. A portfolio must exist before you can save bids or trades to a portfolio.

Once the icon is selected it will open up a separate window to create the portfolio. Below are illustrations to show the steps to create a portfolio in figure 71.

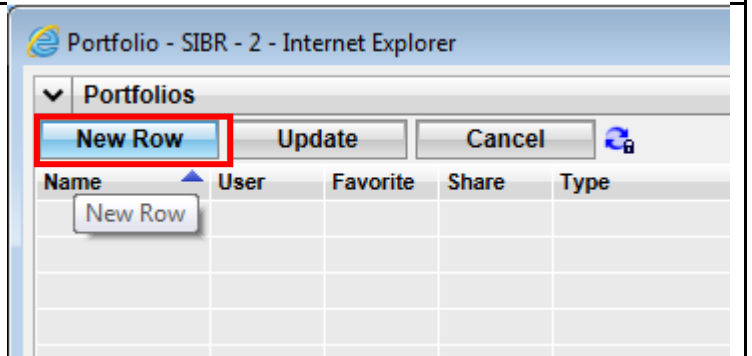




Click on the edit icon.

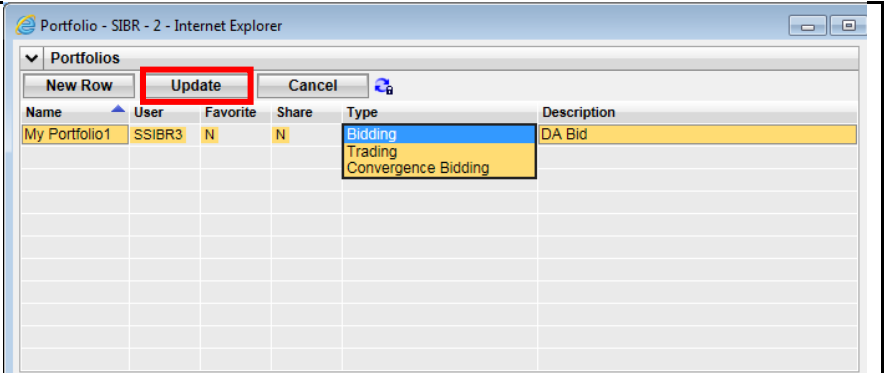


Click on New Row

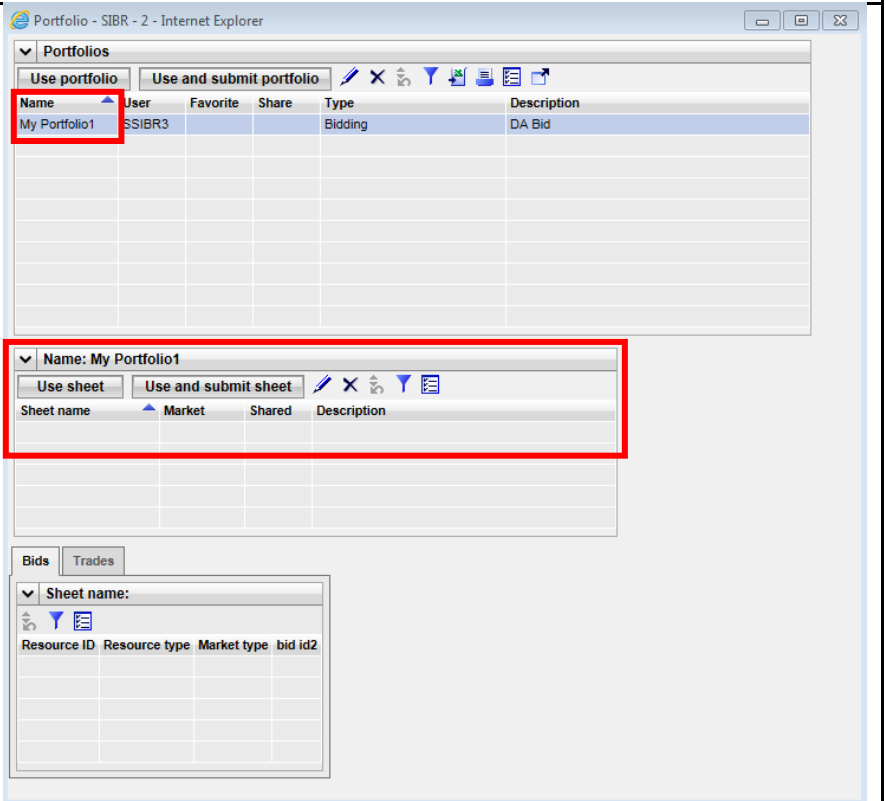




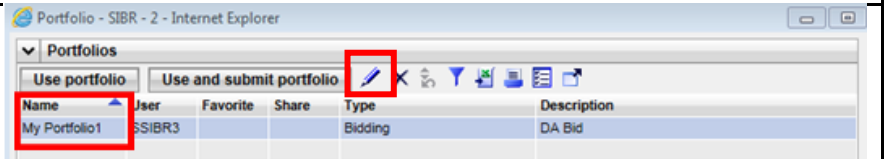
Enter Data for
Name
Select Type from the
drop down.
(Bidding example)
Description
Click Update



Portfolio has now
been created and
available for edit or
to copy bids to.



Click edit icon





Example below

Share has been selected for the named portfolio.

This will allow others who have access to the Coordinator for the bids in a portfolio to see them.

Click Update

Repeat the process for other portfolios as needed.

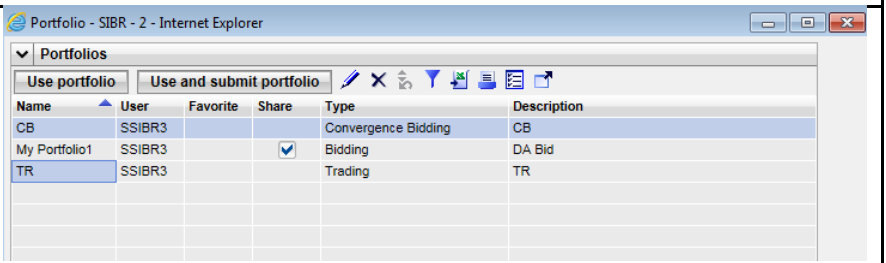
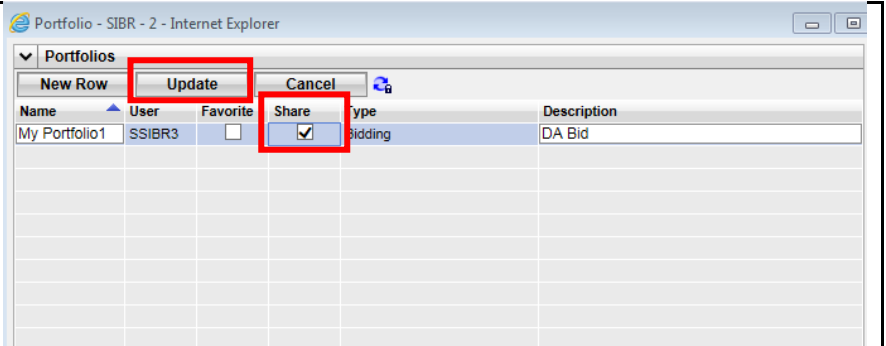

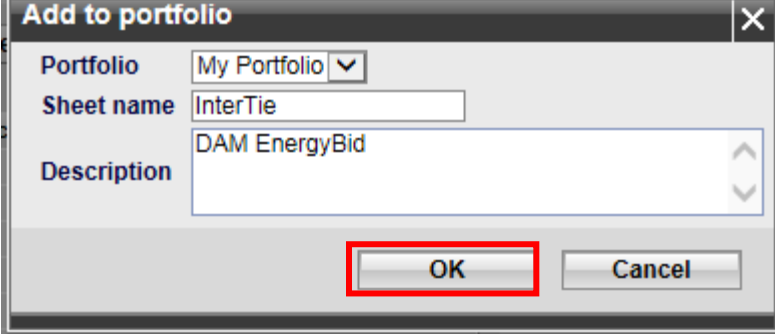
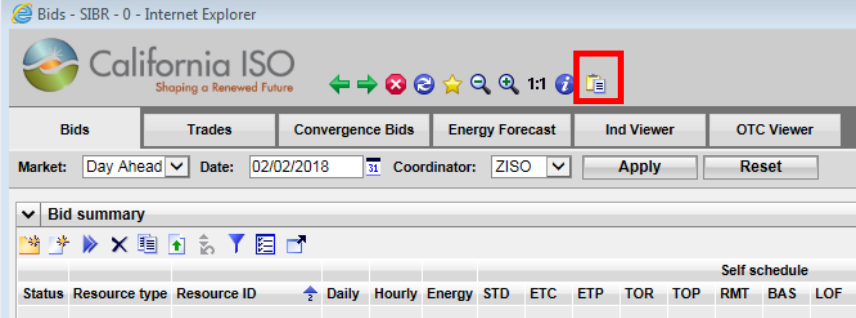


Figure 71 Creating Portfolio

13.2 Save Bids or Trades to Created Portfolio

Select Bids from the Bid summary Screen either Day-Ahead or Real-Time to add to portfolio. Bids that have been submitted and bids in created state can be added to a portfolio, figure 72 will illustrate adding bids to a portfolio. Saving Trades and Convergence bids works the same, the examples below will just show sample bids.

Highlight bid row Click on the icon for Add to portfolio	
Select Portfolio to copy to from drop down. Enter a Sheet Name Enter a Description Click OK	
Click on the Manage portfolio icon to view the added bids.	

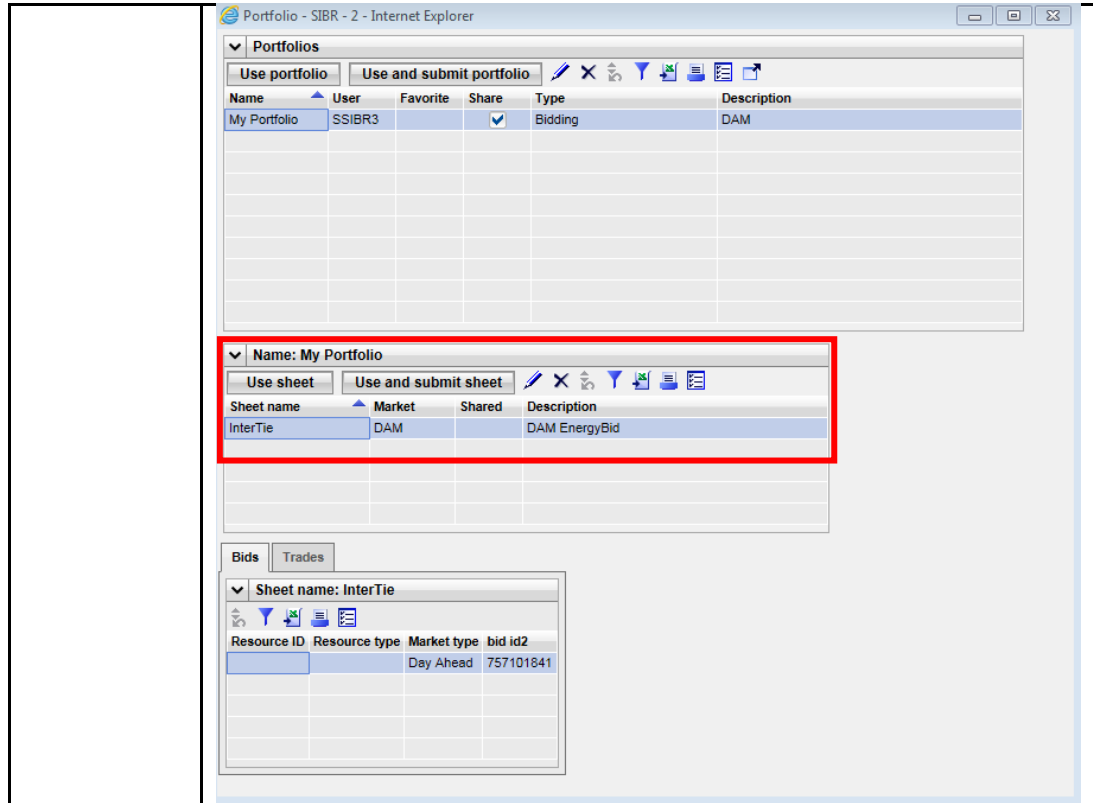


Figure 72 Saving Bids to Portfolio

13.3 Submitting From Portfolio Displays

There are two ways to submit bids from portfolios, submit entire portfolio that includes all sheets saved in the portfolio or submit only individual sheets or individual bids within a sheet in a portfolio. Figure 73 will illustrate the submission from a portfolio.



Click on the Manage portfolio icon to view the added bids.

Select row Portfolio to submit from and click Use and submit portfolio

Name	User	Favorite	Share	Type	Description
My Portfolio	SSIBR3		<input checked="" type="checkbox"/>	Bidding	DAM

Sheet name	Market	Shared	Description
InterTie	DAM		DAM EnergyBid

Resource ID	Resource type	Market type	bid id2
	Day Ahead		757101841



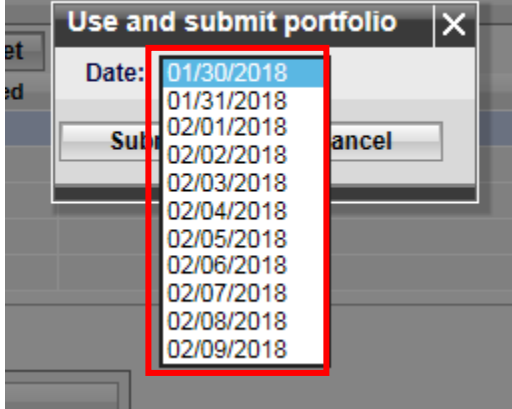
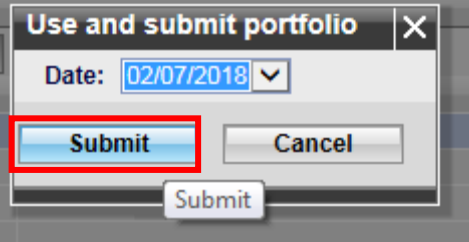
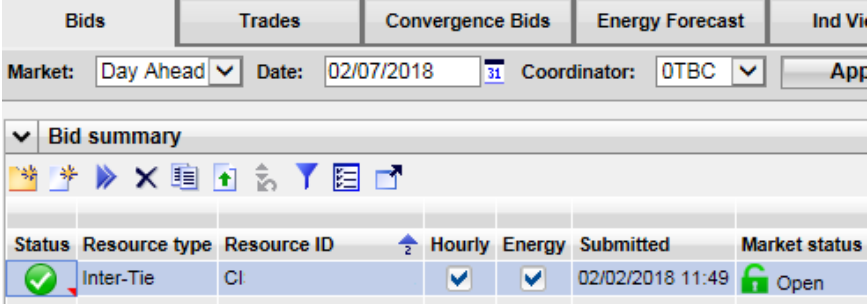
<p>Click on the date to submit to.</p>																
<p>Click Submit</p>																
<p>Change date to see new bid with recent Submitted time.</p>	 <table border="1" data-bbox="553 1354 1416 1430"> <thead> <tr> <th>Status</th> <th>Resource type</th> <th>Resource ID</th> <th>Hourly</th> <th>Energy</th> <th>Submitted</th> <th>Market status</th> </tr> </thead> <tbody> <tr> <td></td> <td>Inter-Tie</td> <td>CI</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>02/02/2018 11:49</td> <td> Open</td> </tr> </tbody> </table>		Status	Resource type	Resource ID	Hourly	Energy	Submitted	Market status		Inter-Tie	CI	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	02/02/2018 11:49	Open
Status	Resource type	Resource ID	Hourly	Energy	Submitted	Market status										
	Inter-Tie	CI	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	02/02/2018 11:49	Open										

Figure 73 Submitting from Portfolio

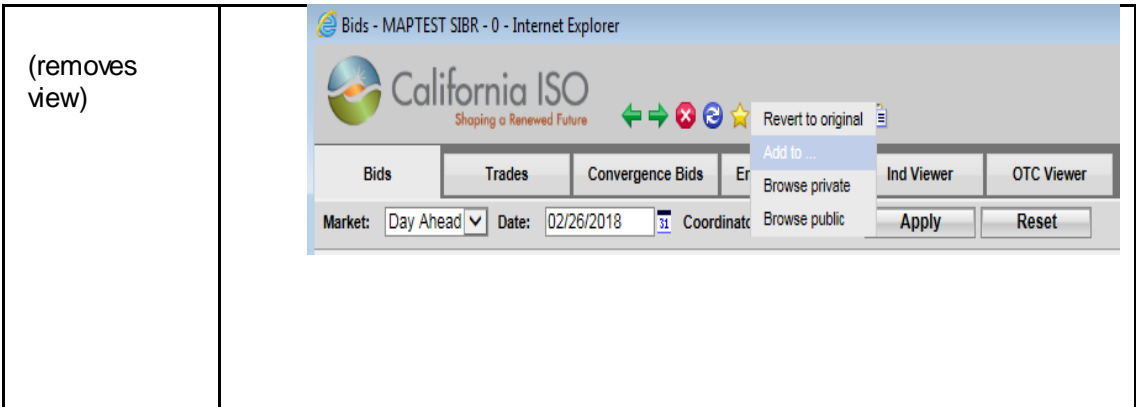
14 Favorites

Favorites offer users the ability to save views to be used with bids and trades in either private or public folders for future use. Favorites under Private are restricted to the certificate login, and favorites saved for Public can be seen by any user and can be removed by any user.

The following screen shots walk through the process of creating views and editing or opening them to apply the view.

14.1 Creating Favorites Displays

After logging in to the SIBR system creating a favorite for use later can be done by selecting the Star icon above the tabs that are displayed. Change the columns to display what you would like before you create and save the view as a favorite or revert back to the original.





Click Ok.

The screenshot shows the SIBR interface with a dropdown menu open on the left side. The menu lists various resource types and their associated market status options. The main window displays a table with columns for resource ID, status, resource type, and market status. A price curve graph is visible at the bottom right, showing Price (\$) on the y-axis and Quantity on the x-axis.

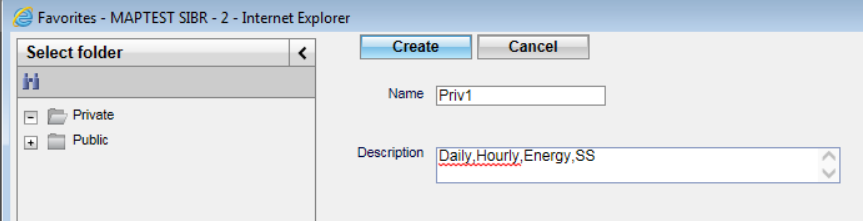
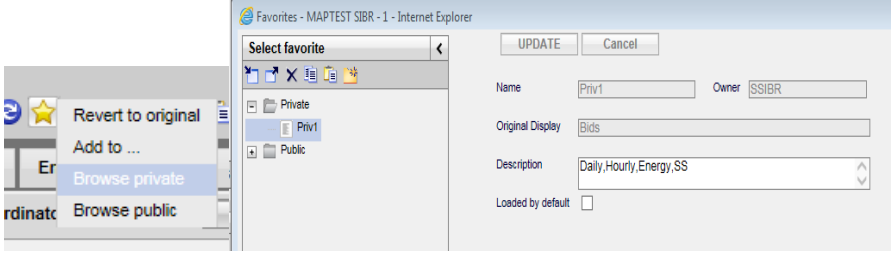
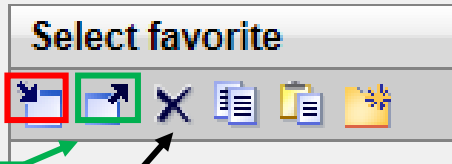
Kept only
Daily
Hourly

The screenshot shows the SIBR interface with the Bid summary table. The table has columns for Status, Resource type, Daily, Hourly, Energy, STD, Submitted, and Market status. The table is filtered to show only resources with 'Daily' and 'Hourly' selected. The 'Market status' column shows 'Closed' for all resources.

Status	Resource type	Daily	Hourly	Energy	STD	Submitted	Market status
✓	Generator	✓	✓	✓	✓	02/26/2018 04:45	🔴 Closed
✓	Generator	✓	✓	✓	✓	02/26/2018 04:45	🔴 Closed
✓	Generator	✓	✓		✓	02/26/2018 04:44	🔴 Closed
✓	Generator	✓	✓	✓		02/26/2018 04:44	🔴 Closed
✓	Generator	✓	✓	✓		02/25/2018 13:00	🔴 Closed
✓	Generator	✓	✓	✓		02/25/2018 13:00	🔴 Closed
✓	Generator	✓	✓	✓		02/25/2018 13:00	🔴 Closed
✓	MSG	✓	✓			02/25/2018 13:00	🔴 Closed
✓	MSG	✓		✓		02/25/2018 13:00	🔴 Closed
✓	MSG	✓		✓		02/25/2018 13:00	🔴 Closed

The screenshot shows the top navigation bar of the SIBR interface. It includes the California ISO logo, navigation tabs (Bids, Trades, Convergence Bids, Energy Forecast, Ind Viewer), and a search bar. Below the navigation bar, the Bid summary table is visible, showing the same data as the previous screenshot.



<p>Specify Name</p>	
<p>Click Star</p>	
<p>Open</p> <p>Open in New Window</p> <p>Delete</p> <p>Copy, Paste and Create Folder (not supported)</p>	



15 FAQ

Whenever a subject like “user interface design” is discussed, there are almost always a lot of questions. This chapter attempts to answer some of those questions. We have attempted to categorize the questions under chapter headings.

15.1.1 General Questions

What are rules? What do they do?

There are rules (actually several hundred of them) about what the content of a bid must be in order for that bid to be considered by the system. The Rules Engine is the system component that validates bids to ensure that they contain all the correct components, that the values in those components are correct, etc.

Will I know what happens to my bid when I submit it?


When you submit a bid, the system responds immediately to acknowledge that the bid has been submitted. The bid is stored in the database and queued for consideration by the Rules Engine. The Rules Engine may actually look at each bid multiple times, as is explained in Chapter 1.2.1. Briefly:

- In the “Bid Content” step, the Rules Engine checks that all required contents of the bid are present.
- In the “Bid Validation” step, the Rules Engine checks that all components of the bid are valid with respect to the specifics of the resource.
- In the “Bid Processing” step, the Rules Engine may alter or update the bid to add components such as Start Up Cost or a ramp rate or Generation Distribution Factor to name a few. Depending upon when the bid is submitted relative to the target market period, this step may be performed multiple times.

Why do bids get re-validated?

There are a lot of so-called “static data” associated with resources. These include such things as maximum generator outputs, forbidden regions, reference ramp rates, fuel type, location, and a lot of other things that either don’t change or change only infrequently. Rather than require the time-consuming and error-prone entry of these for every bid, they are stored by the system and updated daily.

Data in the Master File are required for bid validation, and although Master File data is referred to as “static data”, they *may* change – even if only rarely. That is why every bid is (re-) validated after the Master File update for the target date.

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When a bid is submitted, the system provides feedback as soon as bid information has been written to the system database (almost immediately).

Additional feedback is provided each time the Rules Engine considers a bid.

Will I know why my bid did not get accepted?

The Rules Engine produces output that identifies any problem with a bid that will prevent that bid from being considered by the system. That output is stored in the system database until the next time you log in. At that time, the system will be able to inform you of the status of your bid(s) and display any error messages and / or notifications about whether and how a bid has been modified by the system.

Note that the final Rules Engine run is after market close. At this point, you receive the final status of your bid.

Will I be allowed to correct any errors or make changes to a submitted bid?

Yes. You can change a bid at any time up to the market for the target period closes. To modify a bid, you use the same user interface screens that were used to create the bid. Bring up the transaction page; specify a resource and a bid period and the bid data will appear. Modify it and click the submit button again to replace the original bid with the modified bid.

What happens to my previous bid when I submit another bid?

Basically, the system remembers every bid that has ever been submitted. When a modified bid is re-submitted and passes the content and validation rules, the original bid is marked so that it will not be considered for use and becomes an obsolete bid in the database. If there is a market accepted bid, and a new bid is submitted that does not pass the content or validation, the market accepted bid will remain as the market accepted bid and will not be replaced.


Canceling a bid is similar in many ways to re-submitting a bid. The canceled bid is marked so that it is not considered for use.

Do I have to cancel or delete a bid before submitting another bid?

No. When you resubmit a bid for the same resource and market period, it replaces the existing bid (if there is one). There is no need to cancel the existing bid first.

15.1.2 Questions About Bids

A bid is strictly defined by the rules engine as being for one resource and for one bid period (in the case of a day-ahead bid, for example, this would be one 24 hour period). However, the user interface is designed to allow you to enter data for multiple resources on the same screen. However, these become multiple bids when they are submitted.

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Can I submit a subset of hours for a Day Ahead bid?

You can, and it may even be accepted. Bids undergo two basic validation steps – the first verifies that all required content is included in the bid; the second validates those contents (and potentially modifies them). The absence of required components can cause the bid to be rejected outright. However, in some cases, the bid modification process can fill in omissions. In such a case, the modified bid could be accepted.

You can also create a partial bid, save it (without submitting), complete it at some later time, and then submit it.

A complete bid will include all commodities and self-schedules for a resource that a user intends to submit to the CAISO Day-Ahead or Real-Time market. Some generating resources may have certain requirements that more strictly define what will constitute a complete bid.

Can I see all my bids submitted?

Yes. The “Bid summary” page provides a listing of all bids that are known to the system, along with their current status. In the case of all bids, you can view all messages generated by the Rules Engine.

Does the system remember what was submitted if the bid was modified?

Yes. The system stores the submitted bid. If the bid was automatically modified by the system, the modified version is also stored. If a bid is re-submitted, both the original and the new version are stored. A bid submitted that passes the validation rules will be stored in the system as a “TV” (Temporary Valid) bid, processing rules will execute and the status will be one of the market accepted status’. When revalidation occurs the “TV” bid is reprocessed through the rules engine.

How are DST hours displayed?

When using the SIBR GUI to enter a bid for a “short” or 23-hour day, the bid entry screen will contain only 23 hours, numbered 1 through 24 with no HE3 displayed. The “long” (25-hour) day will have 25 hours, numbered hour 1, 2, 2*, 3, 4 etc.

What happens if I submit multiple bids for the same resource?

The system allows only one bid to be active for a resource for each target trading day or trading hour in the case of the Real-Time Market. If you submit multiple bids for the same resource and date, the newer bid will replace the older. The older bid is effectively canceled and will no longer be considered by the system. However, all bids that have been submitted are stored by the system, so the latest bid will be available for viewing by a valid SC.



Recurring Bids

Can I submit the same Day Ahead bid for 7 days?

Yes, but it helps to understand what really happens behind the curtain...When you submit a “bid” for seven days, what is really happening behind the scenes is that the system creates 7 separate bids and submits each. Each bid goes through validation (and potential modification) steps separately.

Each bid will be validated and potentially conditionally modified shortly after it is submitted. But, remember in our overview (Chapter 1.2.1), we talked about the Master File, Master File updates, and how they may affect the validity of a bid? Specifically, before a bid becomes a Clean Bid, it must be validated using data from the Master File for the target date. This means that each of the seven bids will be validated once again after market close (and Master File update) for the target trading date.

Can I modify only 1 of the bids for a given trade date?

Yes. Since the system creates a unique bid for each day of recurrence, you may modify the bid for one day without affecting the others.

How do I change all 7 again if needed?

Simply choose the first day you wish to modify. Modify that bid and resubmit it as a recurrent bid. The modified bid will be replicated by the system for each day of recurrence and will replace any existing bid.

Can I cancel only 1 bid and have the other bids remain in the system?

The story here is the same as for modifying a single day of a recurrent bid. Select the day you want to cancel and cancel it. All other bids in the recurrent series will remain in the system. The user interface also allows you to cancel multiple days.

15.1.3 Questions About Templates

A template is a bid without a market date that can be saved for future use as a pattern for a bid to be submitted. Templates are accessed through a user interface feature called “Portfolio”. By saving one or more templates, an SC can quickly create bids.

Do template bids go through the rules engine?

No, the system does not validate templates. However, any bid that has been submitted can be used to create a template. Any bid submitted for an active trade date from a template will go through the Rules Engine. Keep in mind that what is valid today may not be valid tomorrow due to Master File changes.



15.1.4 Questions About Users and Permissions

What is a User?

Strictly defined, a user is a person who has a valid login to the system.

How do I access the system?

Each user is provided a digital certificate that will be used in the authentication process to grant access to the system with specific roles.

How are permissions assigned to a user?

As defined in the SIBR system, a Scheduling Coordinator is actually a “entity” that is assigned to a user on a certificate with a specific role that will associate the permissions for the user.

What is a role for SIBR?

For each certificate there can be multiple entities but there can only be 1 role associated to SIBR on the certificate with either a ‘Write’ role for each entity or a ‘Read’ role for each entity **but not both**.

There are additional roles for NPM BA, and CB Only roles that limit access to other SIBR screens and functions.

Can I have more than 1 SC associated on my certificate?

Yes. This will occur when an organization uses multiple SCIDs. A user given access to more than one SC will have access to submit and review bids for multiple SCIDs. This eliminates the current issue where each SCID must have a separate login. Again, there can be multiple entities but there can only be 1 role associated to SIBR either Read(only) or Write(read and write).

What if I need both roles, one to read only and one that writes?

If the condition exists that read only is needed for only some SC entities, a separate certificate must be requested that will list only those entities with a Read role.

Appendix A Glossary



16 Glossary

Name	Definition
Accepted Bid	A Submitted Bid that has passed Bid Content.
Active Day	The first Trading Day in the Market Horizon of a given Day-Ahead Market.
Active Dispatch Interval	The Dispatch Interval that starts at or after 10min later than the Energy Forecast (or Dynamic Limit Submittal) submission time. For example, if the Energy Forecast (Dynamic Limit Submittal) submission time is 0:00:00, the Active Dispatch Interval is 0:10:00-0:15:00; if the Energy Forecast (Dynamic Limit Submittal) submission time is 0:01:17, the Active Dispatch Interval is 0:15:00-0:20:00.
Active Hour	The second Trading Hour in the Market Horizon of a given Real-Time Market.
Aggregate Generating Resource	A Generating Resource that is a group of Generating Resources scheduled or dispatched as a single Generating Resource.
Aggregate Non-Generator Resource	A Non-Generator Resource that is a group of Non-Generator Resources scheduled or dispatched as a single Non-Generator Resource.
Aggregate Resource	An Aggregate Generating Resource or an Aggregate Non-Generator Resource.
Alternate Inter-Tie	The Inter-Tie optionally associated with an Inter-Tie Resource for tagging Schedules and Awards from associated Bids when the Open Tie Status is set for these Bids.
Ancillary Service	A service that supports the transmission of Energy from Supply to Demand to maintain the reliable operation of the ISO Control Area in accordance with WECC standards.
Ancillary Service Award	An Award for an Ancillary Service.
Ancillary Service Bid Ceiling	The maximum price allowed in an Ancillary Service Bid Component.
Ancillary Service Bid Component	A Bid Component for Ancillary Services.
Ancillary Service Bid Floor	The minimum price allowed in an Ancillary Service Bid Component.
Ancillary Service Capacity	The Capacity designated for an Ancillary Service.
Ancillary Service Obligation	The Demand for which a Scheduling Coordinator is financially responsible for Ancillary Services.
Ancillary Service Obligation Trade	A Trade of an Ancillary Service Obligation.
Ancillary Service Region	A geographical region in which a set of Ancillary Service Requirements is applicable. Ancillary Services will be procured from resources that are located within the AS Region. AS regions may overlap.



Ancillary Service Requirements	A single set of Ancillary Service requirements that is applicable to a Trading Hour. The requirements define how much of each Ancillary Service (in MW) shall be procured within an Ancillary Service Region.
Ancillary Service Requirement Submittal	A submittal of a set of Ancillary Service requirements by an NPM BAA, for purposes of procuring Ancillary Services for those BAAs.
Ancillary Service Self-Provision	An Ancillary Service provided by a Scheduling Coordinator to primarily meet its own Ancillary Service Obligation.
Ancillary Service Self-Provision Award	An Ancillary Service Award from Ancillary Service Self-Provision.
Ancillary Service Self-Provision Bid Component	A Bid Component for Ancillary Service Self-Provision.
Ancillary Service Self-Provision Capacity	The Capacity designated for an Ancillary Service Self-Provision.
Approved	The Credit Indicator and Credit Status of a Virtual Resource Bid that has received credit.
Attaining Control Area	The Control Area that has operational control over a Pseudo-Tie within another Control Area (Native Control Area).
Auto-Match	An EIM feature where an EIMNPR is dispatched to match imbalance Energy deviations from associated Registered Import/Export Resources.
Available Balancing Capacity	Reserved Capacity on an EIM Resource that is dispatched only to prevent or reduce a power balance constraint violation in its EIM BAA; it is designated as Base Regulation Up/Down Schedules.
Average Fuel Cost	The ratio of fuel cost into Energy for a Generating Resource at a given Operating Level.
Average Heat Rate	The ratio of heat conversion into Energy for a Generating Resource at a given Operating Level.
Award	The Ancillary Service Capacity selected from a Resource in a Trading Hour of a Day-Ahead Market or a Commitment Interval of a Real-Time Market, or the RUC Capacity selected from a Resource in a Trading Hour of a Day-Ahead Market.
BAA Operator	The entity representing reliability operations for an EIM BAA; is responsible for submitting Ancillary Service Requirements for NPM-Type AS Regions.
Balance Indicator	An indicator for each TOR/ETC and Trading Hour that indicates whether the corresponding TOR/ETC has passed or failed TOR/ETC balancing validation. An indicator for each Wheeling Bid Component that indicates whether the corresponding Wheeling Transaction is balanced or not.
Balancing Authority Area	A Control Area.
Base Energy Schedule	The hourly Energy Schedule of an EIM Resource that predates the EIM; it is fixed and not settled in the DAM; it is the reference for imbalance Energy in the RTM.



Base Generating Resource State	The Generating Resource State of an EIM Resource that predates the EIM; it is fixed in the DAM; it is fixed for EIMNPR in the RTM.
Base Net Interchange	The Net Interchange attributed to Base Energy Schedules.
Base Non-Spinning Reserve Schedule	The hourly Non-Spinning Reserve Schedule of an EIM Resource outside of EIM; it is ignored in the DAM and the RTM and provided only for information and future functionality.
Base Regulation Down Schedule	The hourly Regulation Down Schedule of an EIM Resource outside of EIM; it is ignored in the DAM and the RTM and provided only for information and future functionality.
Base Regulation Up Schedule	The hourly Regulation Up Schedule of an EIM Resource outside of EIM; it is ignored in the DAM and the RTM and provided only for information and future functionality.
Base Schedule	The Energy or Ancillary Service Schedule of a RC Resource or an EIM Resource before the EIM.
Base Schedule Coordinator	A Market participant authorized by the CAISO to submit Base Schedules for an EIM or RC Resource.
Base Schedule Distribution Bid Component	A Bid Component for distributing the Schedule of an Aggregate Generating Resource that is an EIMNPR.
Base Schedule Period	The time period for which a Base Schedule applies.
Base Spinning Reserve Schedule	The hourly Spinning Reserve Schedule of an EIM Resource outside of EIM; it is ignored in the DAM and the RTM and provided only for information and future functionality.
Best Operating Reserve Ramp Rate	The Operating Reserve Ramp Rate of a Generating Resource under best operating conditions.
Best Operational Ramp Rate Curve	The Operational Ramp Rate Curve of a Generating Resource under best operating conditions.
Best Regulating Ramp Rate	The Regulating Ramp Rate of a Generating Resource under best operating conditions.
Bid	An offer for the supply or demand of a Commodity in a Market.
Bid Component	A section of a Bid that contains information used in Market activities.
Bid Content	The determination that a Bid or a Bid Component complies with the structural rules so that it can be used in a Market.
Bid Deletion	The process where a Resource Bid is deleted after the relevant Market Close Time.
Bid Fill Option	A SIBR initialization parameter that controls the Multi-Period Bid Generation in the DAM: No: No Multi-Period Bids are generated; Market Accepted Bids are used as Source Bids when available. Last: Multi-Period Bids are generated only for the Trading Days in the Day-Ahead Market Horizon after the last Trading Day when a Market Accepted Bid exists; that Market Accepted Bid is used as Source Bid. History: Multi-Period Bids are generated for each applicable



	Trading Day in the Day-Ahead Market Horizon using the DAM Clean Bid of the applicable History Day as Source Bid.
Bid Final Processing	The process where a Resource Bid is modified after the relevant Market Close Time.
Bid Generation	The process where a Resource Bid is generated after the relevant Market Close Time.
Bid Identification	The section of a Bid that contains information used to identify the Bid.
Bid Period	The time period for which a Bid applies.
Bid Processing	The modification of a Valid Bid to produce a Clean Bid or the creation of a Clean Bid.
Bid Special Processing	The process before the relevant Market Close Time where a Resource Bid is examined for potential modification after that Market Close Time.
Bid Status	The validation status of a Bid in SIBR: Created, Submitted, Rejected, Accepted, Invalid, Temporary Valid, Conditionally Valid, Conditionally Modified, Valid, Modified, Obsolete, Canceled, Clean, and STUC.
Bid Submission	The submission of a Bid to a Market.
Bid Submission Time	The time when a Bid is submitted to a Market.
Bid Type	An Inter-Tie Transaction attribute that indicates a Physical Resource (P) or Virtual Resource (V).
Bid Validation	The determination that a Bid or a Bid Component complies with the Market rules so that it can be used in a Market.
Branch Group	An oriented group of Network Branches.
CA Supply Indicator	A Y/N flag for EIM Participating Resources to indicate that they have an agreement with a LSE to serve load in CA. These resources are allowed to receive a GHG allocation in the first RTM pass that determines the GHG allocation reference for the second pass.
CA Supply Option	A SIBR initialization parameter for allowing the bid to specify CA Supply Indication. When set to OFF no CA Supply Indicator will be present on the bid.
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.



Canceled	The Bid Status of a Bid that has been canceled by the User who originally submitted it. The Credit Status of a Virtual Resource Bid that has been sent to CTS for Credit Release.
Canceled Bid	A Bid that has been canceled by the User who originally submitted it.
Capacity	The amount of electric power that a Network component can produce, transmit, or consume.
Capacity Limit	A limit for the total Generating Resource Capacity that can be used for Commodities in DAM and RTM.
Capacity Limit Indicator	An indicator specifying that the Capacity Limit must be enforced in IFM.
Clean Bid	A Bid ready to be used in a Market.
Commitment Interval	The 15-minute Trading Interval of a Real-Time Market.
Commitment Status	The designation of the operating state of a Resource with discrete modes of operation.
Commodity	Energy, Ancillary Service Capacity, or RUC Capacity.
Conditionally Modified Bid	A Bid modified by SIBR in Bid Processing before the Master File update for the relevant Trading Day.
Conditionally Valid Bid	A Bid that has passed Bid Processing before the Master File update for the relevant Trading Day.
Constrained Output Generator	A Generating Resource with an operating range between its registered Maximum Capacity and Minimum Load equal to the Quantity Precision.
Contingency Dispatch Indicator	An indicator specifying that Spinning Reserve and Non-Spinning Reserve must be dispatched only under contingency.
Control Area	An electrical system that balances Supply and Demand to maintain system frequency and Net Interchange with other interconnected Control Areas in accordance with WECC standards.
Convergence Bidding	The submission of Virtual Resource Bids in the Day-Ahead Market.
Convergence Bidding Entity	An Entity authorized for Convergence Bidding for one or more SCs.
Cooling Time	The time that elapses between a Shut-Down Instruction and the next Start-Up Instruction issued to a Resource.
Cooling Time Break Point	A Cooling Time that defines the start or the end of a segment in a Start-Up Time Bid Curve or a Start-Up Cost Bid Curve.
Created Bid	A Bid that has been created by a User.
Credit Indicator	An indicator received from CTS for a Virtual Resource Bid indicating whether there is sufficient credit collateral to support that Bid: Approved, Disapproved, and Error.
Credit Release	The action of sending a Virtual Resource Bid to CTS to release credit.



Credit Request	The action of sending a Virtual Resource Bid to CTS to request credit.
Credit Status	The financial status of a Bid in SIBR: Pending Request, Pending Response, Approved, Disapproved, and Canceled.
Credit Tracking System	The credit management and approval system.
CTS Communication Status	The administratively set and persistently maintained in SIBR status of SIBR-CTS communication: On: allows sending Bids to CTS; Off: suppresses sending Bids to CTS.
Current Gas Price Flag	A Yes/No flag indicating whether the Gas Price Index was compiled based on recent data or not.
Custom Generation Aggregation Point	The Generation Aggregation Point that includes a custom set of Generating Resources in a BAA; it may be used as an Inter-Tie Scheduling Point.
Custom Load Aggregation	A Non-Participating Load Resource aggregation scheme with resource-specific Distribution Factors that are submitted with the Bid and for which the distributed Energy is settled at the relevant Distribution Location marginal prices.
DALPT Self-Schedule	A PT Self-Schedule in DAM that loses its PT scheduling priority in the DAM Clean Bid, a LPT Self-Schedule in DAM promoted in the DAM Clean Bid, a PT Self-Schedule in RTM that loses its Day-Ahead PT scheduling priority in the RTM Clean Bid, or a LPT Self-Schedule in RTM that retains its Day-Ahead LPT scheduling priority in the RTM Clean Bid.
DALPT Self-Schedule Bid Component	A Bid Component for a DALPT Self-Schedule in a Clean Bid.
DALPT Self-Schedule Quantity	The Energy Bid Quantity of a DALPT Self-Schedule.
DAPT Self-Schedule	A PT Self-Schedule in DAM that retains its PT scheduling priority in the DAM Clean Bid, or a PT Self-Schedule in RTM that retains its Day-Ahead PT scheduling priority in the RTM Clean Bid.
DAPT Self-Schedule Bid Component	A Bid Component for a DAPT Self-Schedule in a Clean Bid.
DAPT Self-Schedule Quantity	The Energy Bid Quantity of a DAPT Self-Schedule.
Day-Ahead Advance Bid Ceiling Check Time	A start time, measured in minutes before market close, when SIBR checks submitted bids to determine whether a bid cap for Inter-Tie, Virtual, and Non-Participating Load Resources may be raised.
Day-Ahead Award	An Award produced by a Day-Ahead Market.
Day-Ahead Base Schedule Cutoff Time	The latest time when Base Schedules can be submitted in the DAM for the Active Day.
Day-Ahead Demand Forecast Cutoff Time	The cutoff time used in the DAM to retrieve the Demand Forecast for an EIM BAA for the Active Day for Base Schedule balancing validation.
Day-Ahead Eligible PT Export Capacity	The Day-Ahead EEC that clears RUC. It is used for Export Resource Self-Schedule priority determination in RTM.



Day-Ahead Generating Resource State	The Generating Resource State that is associated with the Day-Ahead Schedule.
Day-Ahead Inter-Tie Virtual and Non Participating Load Energy Bid Ceiling	The maximum price allowed in the Day-Ahead Market for an Energy Bid Component for Virtual Supply, Virtual Demand, Non-Participating Load, and certain Inter-Tie Resources.
Day-Ahead Market	A Market with a Market Horizon of consecutive Trading Hours that span one or more consecutive Trading Days. This Market is conducted the day before the start of its Market Horizon. Schedules and Awards are financially binding for the first Trading Day and advisory for the remaining Trading Days in the Market Horizon.
Day-Ahead Market Horizon	The number of Trading Days in the Market Horizon of a given Day-Ahead Market.
Day-Ahead Maximum Import Bid Price	An hourly proxy price representing generating costs outside of the CAISO Balancing Authority Area applicable to the Day-Ahead Market.
Day-Ahead Non-Spinning Reserve Award	A Day-Ahead Award for Non-Spinning Reserve.
Day-Ahead PT Self-Schedule	The portion of the Day-Ahead Schedule identified as PT Self-Schedule.
Day-Ahead Regulation Down Award	A Day-Ahead Award for Regulation Down.
Day-Ahead Regulation Up Award	A Day-Ahead Award for Regulation Up.
Day-Ahead RUC Award	A Day-Ahead Award for RUC Capacity.
Day-Ahead Schedule	A Schedule produced by a Day-Ahead Market.
Day-Ahead Spinning Reserve Award	A Day-Ahead Award for Spinning Reserve.
Daytime Type	The daytime certification for a Virtual Resource Location: ON: valid only during On-Peak Trading Hours; OFF: valid only during Off-Peak Trading Hours; ALL: valid during all Trading Hours.
Default Ancillary Service Bid Price	The default Ancillary Service Bid Price used for a Resource with no Ancillary Service Bid Component.
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 Generation Aggregation Point	The Generation Aggregation Point that includes all Generating Resources in a BAA; it may be used as an Inter-Tie Scheduling Point.



Default Maximum Greenhouse Gas Price	The maximum allowable Greenhouse Gas Price for Inter-Tie Transactions; it is also used when there is no Maximum Greenhouse Gas Price registered for a given Resource.
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 Regulation Mileage Bid Price	The default Regulation Mileage Bid Price used for a Resource with no Regulation Mileage Bid Component.
Default RUC Bid Price	The default RUC Bid Price used for a Resource with no RUC Bid Component.
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.
Deleted Bid	A Clean Bid deleted by SIBR after the relevant Market Close Time.
Demand	The collective of Resources that demand Energy (i.e., Load Resources and Export Resources).
Demand Forecast	The forecast for the hourly Demand of a BAA in the FNM for a Trading Day in the DAM or a Trading Interval in the RTM.
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.
Detour System Resource	A System Resource in a non-EIM BAA defined with similar attributes as an ETSR, but used to reroute energy between EIM BAAs that is not modeled as an energy transfer in an ETSR.
Direction	An Inter-Tie Transaction attribute that indicates Import (I) or Export (E).
Disapproved	The Credit indicator and Credit Status of a Virtual Resource Bid that has been denied credit.
Discrete Reliability Demand Response Resource	A RDRR that should be dispatched discretely (on/off) in RTM. (not allowed in DAM).
Dispatch	The Energy dispatched from a Resource for a Dispatch Interval of a Real-Time Market.
Dispatch Instruction	A financially binding outcome of the Real-Time Market that determines the Operating Level of a Resource at a specific time within the first Trading Interval of the Market Horizon of the Real-Time Market.
Dispatch Interval	The 5-minute Trading Interval of a Real-Time Market.



Dispatch Option	A Bid option that determines the participation of an Inter-Tie Resource or an Inter-Tie Generating Resource in the Real-Time Market: Hourly: dispatched as an Hourly Pre-Dispatched Resource with a flat Dispatch for all Trading Intervals of a Trading Hour. Once: dispatched as an Hourly Pre-Dispatched Resource with up to a single Dispatch revision in a Commitment Interval of a Trading Hour. 15min: dispatched in each Commitment Interval of a Trading Hour with a flat Dispatch for all Dispatch Intervals of that Commitment Interval. Dynamic: dispatched in each Dispatch Interval of a Trading Hour.
Dispatchable Demand Resource	A type of NGR with a continuous operating range only in the load mode: $L_{max} < L_{min} = 0 = G_{min} = G_{max}$.
Distribution Bid Component	A Bid Component for distributing the Bid, Schedule, or Dispatch of an Aggregate Generating Resource.
Distribution Factor	The fraction of the Bid, Schedule, or Dispatch of an Aggregate Generating Resource distributed at a Distribution Location.
Distribution Location	A Network Node.
Distribution Pair	A pair of a Distribution Location and a Distribution Factor.
Distribution Status	The Static or Dynamic nature of the Schedule or Dispatch distribution of an Aggregate Generating Resource.
Downward State Transition	A State Transition where the Maximum Capacity of the Final Online Generating Resource State is generally lower than the Maximum Capacity of the Initial Online Generating Resource State.
Dynamic Limit Period	The time period for which the Dynamic Limit Submittal applies.
Dynamic Limit Submission Horizon	The number of Trading Hours in the future that a Dynamic Limit may be submitted.
Dynamic Limit Submittal	A data submittal containing the minimum and maximum anticipated operating limits of a Hybrid Resource over a Dispatch Interval.
Dynamic Resource	An Inter-Tie Resource or an Inter-Tie Generating Resource that can be dynamically controlled to maintain the frequency and Net Interchange of a Control Area. Registered Inter-Tie Resources and Inter-Tie Generating Resources that are Dynamic Resources are registered with Energy Type DYN.
EIM BAA	A BAA that participates in EIM, other than the CISO.
EIM Entity	A BAA operator for one or more EIM BAAs.



EIM Entity BSC	The BSC of an EIM Entity for an EIM BAA. The EIM Entity BSC is the BSC for all EIM Non-Participating Resources associated with an intertie with that EIM BAA. In the DAM, the EIM Entity BSC is the BSC for all EIM Resources residing in or associated with an intertie with that EIM BAA. In the RTM, the EIM Entity BSC is the BSC for all EIM Resources residing in or associated with an intertie with that EIM BAA after the RTM Base Schedule Second Cutoff Time.
EIM Entity SC	The SC of an EIM Entity for an EIM BAA; it is the SC for the EIM Non-Participating Resources in that EIM BAA. The EIM Entity SC may not be the SC for an EIM Participating Resource.
EIM Inter-Tie	An Inter-Tie from an EIM BAA to a non-EIM BAA.
EIM Non-Participating Resource	An EIM Resource for which the EIM Participating Indicator is not set; it may not submit Bids in EIM.
EIM Participating Indicator	It indicates that an EIM Resource may submit Bids in EIM.
EIM Participating Resource	An EIM Resource for which the EIM Participating Indicator is set; it may submit Bids in EIM.
EIM Resource	A Resource in an EIM BAA, or an Inter-Tie Resource or Inter-Tie Generating Resource associated with an EIM Inter-Tie.
EIM Transfer	The portion of Net Interchange with other EIM BAAs or the CAISO.
ELC Self-Schedule	A Generated Self-Schedule for ELC.
ELC Self-Schedule Bid Component	A Generated Self-Schedule Bid Component for ELC.
ELC Self-Schedule Quantity	The Energy associated with an ELC Self-Schedule; it is the Minimum Load of the corresponding ELS.
Eligible PT Export Capacity	The calculated available non-RA, non-TOR/ETC Capacity of a Supporting Resource. It is used for Export Resource Self-Schedule priority determination.
Eligible RUC DAPT Capacity	The calculated portion of an Export Resource RUC Schedule that corresponds to the DAPT Self-Schedule that cleared RUC; it can support a DAPT Self-Schedule in the RTM Clean Bid.
Eligible RUC DALPT Capacity	The calculated portion of an Export Resource RUC Schedule above TOR/ETC Self-Schedules; it can support a DALPT Self-Schedule in the RTM Clean Bid.
End Date/Time	The date and time that designate the end of a time period such as a Bid Period.
End of Hour State of Charge Bid Component	A Bid Component for submitting End of Hour State of Charge limits.
Energy	The amount of electric energy that a Network component produces, transmits, or consumes within a time period.
Energy Bid Ceiling	The maximum price allowed in an Energy Bid Component.
Energy Bid Ceiling High Limit Flag	A Yes/No flag indicating whether, in each hour of the Day Ahead Market, the Day-Ahead Inter-Tie Virtual and Non Participating Load Energy Bid Ceiling was set to the Energy Bid Ceiling or not.



Energy Bid Component	A Bid Component for Energy.
Energy Bid Curve	An incremental cost curve of Energy Bid Price versus Operating Level.
Energy Bid Floor	The minimum price allowed in an Energy Bid Component.
Energy Bid Price	The price to marginally produce or consume Energy at an Operating Level within an Energy Bid Segment of an Energy Bid Curve.
Energy Bid Quantity	An Operating Level that defines the start or the end of an Energy Bid Segment.
Energy Bid Range	The Capacity range of an Energy Bid Curve between the LEL and UEL, inclusive.
Energy Bid Segment	A segment of an Energy Bid Curve between two successive Energy Bid Quantities.
Energy Bid Soft Cap	The maximum price allowed in a Generating Resource Energy Bid Component, without prior cost justification.
Energy Consumption Forecast	The forecasted energy consumption for the load served behind the meter of a Generating Resource over a Dispatch Interval.
Energy Forecast	The Energy Production Forecast or the Energy Consumption Forecast for a Generating Resource over a Dispatch Interval.
Energy Forecast Period	The time period for which an Energy Forecast applies.
Energy Imbalance Market	The extension of the Real-Time Market to BAAs other than the CAISO.
Energy Limit	A lower or upper limit on the amount of Energy scheduled and dispatched from a Resource within a Trading Day.
Energy Limit Bid Component	A Bid Component for Energy Limits.
Energy Operation and Maintenance Cost	The portion of the Energy Cost of a Generating Resource that is related to operating and maintenance expenses.
Energy Opportunity Cost	The long term opportunity cost of a ULR for incremental Energy above Minimum Load per Online Generating Resource State.
Energy Price Index	The historical average marginal price for Energy for a specific Resource over a time period.
Energy Production Forecast	The forecasted energy production of a Generating Resource with variable energy production over a Dispatch Interval.
Energy Self Schedule Resource	Designation from Master File that limits the resource as being able to only provide Energy Self-Schedules (includes pumping Self-Schedule) in both DAM and RTM.
Energy Trade	A Trade of Energy.
Energy Transfer System Resource	A Registered Inter-Tie Resource used for energy transfer between BAAs in the EIM.
Energy Type	An Identifier of the type of Energy from an Inter-Tie Resource as it pertains to Ancillary Service Requirements, Wheeling, or Dynamic Interchange.



Error	The Credit Indicator of a Virtual Resource Bid that CTS failed to process.
ETC Chain	A combination of individual ETCs used in sequence.
ETC Entitlement	The hourly use limit of a ETC.
ETC Link	A ETC that is not a ETC Chain.
ETC Pumping Self-Schedule	A Pumping Self-Schedule associated with an ETC.
ETC Pumping Self-Schedule Bid Component	A Bid Component for a ETC Pumping Self-Schedule.
ETC Pumping Self-Schedule Quantity	The Energy Bid Quantity for an ETC Pumping Self-Schedule.
ETC Reference	A unique identifier of an ETC.
ETC Self-Schedule	A Self-Schedule associated with an ETC.
ETC Self-Schedule Bid Component	A Bid Component for an ETC Self-Schedule.
ETC Self-Schedule Quantity	The Energy Bid Quantity for an ETC Self-Schedule.
ETCC Cutoff Time	A configurable parameter used for setting the time of day to trigger OTC/Entitlement validation for applicable bids when ETCC data is received. (similar to Market Close Time)
ETSR Tag Indicator	For Energy Transfer System Resources (ETSRs), Y/N status indicating whether an associated Base Schedule can be submitted.
Existing Transmission Contract	An agreement currently in effect between a Participating Transmission Owner and another party that was executed on or before July 9, 1996, which places limitations on the ISO's operational control of Network Branches owned by the Participating Transmission Owner.
Existing Transmission Contract Calculator	An ISO application that publishes ITC OTC and TOR/ETC Entitlements.
Export Resource	A Resource that consumes Energy exported out of a BAA.
Export Resource Bid	A Bid for an Export Resource.
Export Transaction	An Inter-Tie Transaction for an Export Resource.
Export Transaction Bid	A Bid for an Export Transaction.
External Bid Status	The Bid Status exposed to the User.
External Control Area	A Control Area not modeled in the Full Network Model. An External Control Area has inter-connections with the CAISO Control Area and with other Control Areas. The inter-connections of the CAISO Control Area with External Control Areas are modeled as radial inter-ties.
Extra Long-Start Unit	A Generating Resource with a long Start-Up Time that requires a Start-Up instruction in advance of the DAM.
Extra Long-Start Unit Commitment	The Start-Up of an ELS in advance of the DAM.
Fast-Start Unit	A Generating Resource certified for Non-Spinning reserve in the RTM (it must have a Start-Up Time not greater than 10 minutes).



FERC 831 Effective Flag	A Yes/No flag indicating whether portions of FERC 831 are effective.
Final Multi-Period Bid	A promoted Multi-Period Bid for a Trading Day after the Active Day in a Day-Ahead Market Horizon, or a Trading Hour after the Active Hour in a Real-Time Market Horizon (STUC).
Final ODCP Bid	A promoted ODCP Bid for a Trading Day in a Day-Ahead Market Horizon, or a Trading Hour in a Real-Time Market Horizon.
Final Online Generating Resource State	The Online Generating Resource State of a MSG after a State Transition.
Firm Import Resource	An Import Resource that is supported by Spinning Reserve; it is registered with an Energy Type of FIRM.
Flexible RA Capacity	The flexible Capacity of a Resource under Resource Adequacy requirements, provided by IRR for each Resource and Trading Hour.
Flexible RA Flag	A Yes/No flag provided by IRR for each Resource and Trading Hour indicating whether the Resource is a Flexible RA Resource in that Trading Hour.
Flexible RA Resource	A Resource with flexible Resource Adequacy requirements.
Forbidden Operating Range	A range of Operating Levels within which a Resource cannot operate in a stable manner and must ramp through.
Forward Bid Resource	Resource from Market Accepted Bid that can be used in the STUC Rule Flow. If there is a SIBR temporary administrative addition to the Forward Bid Resource exception list for a resource, that resource will not be allowed to use a Forward Bid.
Fuel Region Update Flag	A Yes/No flag indicating whether the Reasonableness Threshold Gas Price Index was based on a same-day update.
Fuel Source	The registered fuel used by a Generating Resource to produce Energy.
Fuel-Region-Specific Gas-Fired 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. 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.
Full Network Model	The Network used in the Market; it includes the CAISO and several other BAAs.
Gas Price Index	The average natural gas price at a specific Location and period of time.
Generated Bid	A Clean Bid generated by SIBR after the relevant Market Close Time.



Generating Capacity Limit	A limit for the total Non-Generator Resource generating Capacity that can be used for Commodities in DAM and RTM.
Generating Resource	A Resource that produces Energy.
Generating Resource Ancillary Service Bid Component	A Generating Resource Bid Component for Ancillary Services.
Generating Resource Ancillary Service Self-Provision Bid Component	A Generating Resource Bid Component for Ancillary Service Self-Provision.
Generating Resource Bid	A Bid for a Generating Resource.
Generating Resource Bid Component	A Bid Component of a Generating Resource Bid.
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.
Generating Resource Distribution Bid Component	A Bid Component for distributing the Bid, Schedule, or Dispatch of an Aggregate Generating Resource.
Generating Resource Energy Bid Component	A Generating Resource Bid Component for Energy.
Generating Resource Energy Limit Bid Component	A Generating Resource Bid Component for Energy Limits.
Generating Resource ETC Self-Schedule Bid Component	A Generating Resource Bid Component for ETC Self Schedules.
Generating Resource Load Following Self-Provision Down Bid Component	A Generating Resource Bid Component for Load Following Down Self-Provision.
Generating Resource Load Following Self-Provision Up Bid Component	A Generating Resource Bid Component for Load Following Up Self-Provision.
Generating Resource Minimum Load Cost Bid Component	A Generating Resource Bid Component for Minimum Load Cost.
Generating Resource Non-Spinning Reserve Bid Component	A Generating Resource Bid Component for Non-Spinning Reserve.



Generating Resource Non-Spinning Reserve Self-Provision Bid Component	A Generating Resource Bid Component for Non-Spinning Reserve Self-Provision.
Generating Resource PT Self-Schedule Bid Component	A Generating Resource Bid Component for a PT Self Schedule.
Generating Resource Ramp Rate Bid Component	A Generating Resource Bid Component for Ramp Rates.
Generating Resource Regulation Down Bid Component	A Generating Resource Bid Component for Regulation Down.
Generating Resource Regulation Down Self-Provision Bid Component	A Generating Resource Bid Component for Regulation Down Self-Provision.
Generating Resource Regulation Up Bid Component	A Generating Resource Bid Component for Regulation Up.
Generating Resource Regulation Up Self-Provision Bid Component	A Generating Resource Bid Component for Regulation Up Self-Provision.
Generating Resource RUC Bid Component	A Generating Resource Bid Component for RUC Capacity.
Generating Resource Self-Schedule Bid Component	A Generating Resource Bid Component for Self-Schedules.
Generating Resource Spinning Reserve Bid Component	A Generating Resource Bid Component for Spinning Reserve.
Generating Resource Spinning Reserve Self-Provision Bid Component	A Generating Resource Bid Component for Spinning Reserve Self-Provision.
Generating Resource Start-Up Bid Component	A Generating Resource Bid Component for Start-Up.
Generating Resource State	The operating configuration indicator for a Generating Resource. All Generating Resources have an Offline Generating Resource State (0), and an Online Generating Resource State (1). MSGs have additional Online Generating Resource States (2, 3, etc.)
Generating Resource TOR Self-Schedule Bid Component	A Generating Resource Bid Component for TOR Self-Schedules.
Generating Self-Schedule	A Self-Schedule from a NGR in generating mode.
Generating Self-Schedule Bid Component	A Bid Component for Generating Self-Schedules.
Generation Aggregation Point	An aggregate Location comprised of Generating Resources in a BAA.
Greenhouse Gas Allowance Index Price	A daily index price representing the typical cost of obtaining a California allowance to emit one ton of carbon dioxide.
Greenhouse Gas Area	A set of Network Nodes and Resources subject to greenhouse gas regulation.



Greenhouse Gas Bid Component	A Bid Component for expressing the additional cost of complying with greenhouse gas emission regulations for energy imports to California.
Greenhouse Gas Capacity	The Capacity offered in the Greenhouse Gas Bid Component; it is absolute from zero and may overlap with the Energy Bid Quantities specified in the Energy Bid Curve.
Greenhouse Gas Energy Cost Allowance Curve	A greenhouse gas emission cost adder to the generated Energy Bid Curve for a Generating Resource or MSG configuration.
Greenhouse Gas Flag	A (Y/N) Resource attribute indicating membership to a GHG Area.
Greenhouse Gas Minimum Load Cost Allowance	A per MW greenhouse gas emission cost adder to the Proxy Minimum Load Cost for a Generating Resource or MSG configuration.
Greenhouse Gas Price	The bid price for the Greenhouse Gas Capacity in the Greenhouse Gas Bid Component.
Greenhouse Gas Start-Up Cost Allowance Curve	A greenhouse gas emission cost adder to the Proxy Start-Up Cost Curve for a Generating Resource or startable MSG configuration.
Grid Management Charge Energy Cost Rate	A grid management charge cost adder to each segment of the generated Energy Bid Curve for any Generating Resource or MSG configuration.
Grid Management Charge Minimum Load Cost Rate	A per MW grid management charge cost adder to the Proxy Minimum Load Cost for any Generating Resource or MSG configuration.
Grid Management Charge Start-Up Cost Adder	A grid management charge cost adder to each segment of the Proxy Start-Up Cost Curve for a Generating Resource or MSG configuration.
Grid Management Charge Start-Up Cost Rate	A volumetric grid management charge cost rate used to calculate the Grid Management Charge Start-Up Cost Adder for any Generating Resource or MSG configuration.
History Day	A Trading Day used to select the DAM Clean Bid as Source Bid for a Multi-Period Bid when the Bid Fill Option is "History". By default, the History Day is the last similar Trading Day (if the Trading Day is Tuesday 6/14, the default History Day will be Tuesday 6/7), but the operator may choose any Trading Day within the past seven days.
Hourly Pre-Dispatched Inter-Tie Generating Resource	An Inter-Tie Generating Resource dispatched at the same Operating Level over a Trading Hour of a Real-Time Market.
Hourly Pre-Dispatched Resource	A Resource dispatched at the same Operating Level over a Trading Hour of a Real-Time Market.
Hybrid Resource	A type of NGR with a continuous operating range that spans both load (charging) and generating (discharging) modes and is made up of component resources of different characteristics. Example: VER paired with a battery.
IFM Self-Schedule	The IFM committed Self-Schedule used for REM resources that are awarded Regulation Capacity from IFM.
Import Resource	A Resource that produces Energy that is imported into a BAA.



Import Resource Bid	A Bid for an Import Resource.
Import Transaction	An Inter-Tie Transaction for an Import Resource.
Import Transaction Bid	A Bid for an Import Transaction.
Incremental Fuel Cost	The cost of the fuel consumed by a Generating Resource at a given Operating Level to produce the next increment of Energy.
Incremental Fuel Cost Curve	The Incremental Fuel Cost of a Generating Resource as a function of its Operating Level.
Incremental Heat Rate	The amount of fuel consumed by a Generating Resource at a given Operating Level to produce the next increment of Energy.
Incremental Heat Rate Curve	The Incremental Heat Rate of a Generating Resource as a function of its Operating Level.
Incremental PT Self-Schedule Quantity	The positive difference between the PT Self-Schedule Quantity specified in a RTM PT Self-Schedule Bid Component and the RUC Schedule for the same Trading Hour.
Initial Online Generating Resource State	The Online Generating Resource State of a MSG before a State Transition.
Initial State of Charge Bid Component	A bid component allowing a resource to specify the initial State of Charge at the start of a Day-Ahead Market run.
Instruction	A financially binding outcome of a Market that determines the Commitment Status or Operating Level of a Resource at a specific time within the Market Horizon of that Market.
Integrated Forward Market	A Day-Ahead Market application for committing Resources and optimally scheduling Energy and Ancillary Services.
Inter-Tie	A Branch Group that inter-connects two BAAs (from a BAA to another BAA).
Inter-Tie Corridor	A collection of Inter-Tie Scheduling Points where an Energy/AS scheduling limit is enforced.
Inter-Tie Generating Resource	A Generating Resource at an Inter-Tie Scheduling Point.
Inter-Tie Non-Generator Resource	A Non-Generator Resource at an Inter-Tie Scheduling Point.
Inter-Tie Resource	An Import Resource or an Export Resource at an Inter-Tie Scheduling Point; it is either a Registered Inter-Tie Resource or an Inter-Tie Transaction.
Inter-Tie Resource Ancillary Service Bid Component	An Inter-Tie Resource Bid Component for Ancillary Services.
Inter-Tie Resource Ancillary Service Self-Provision Bid Component	An Inter-Tie Resource Bid Component for Ancillary Service Self-Provision.
Inter-Tie Resource Bid	A Bid for an Inter-Tie Resource.
Inter-Tie Resource Bid Component	A Bid Component of an Inter-Tie Resource Bid.
Inter-Tie Resource Energy Bid Component	An Inter-Tie Resource Bid Component for Energy.



Inter-Tie Resource ETC Self-Schedule Bid Component	An Inter-Tie Resource Bid Component for ETC Self Schedules.
Inter-Tie Resource ETC Self-Schedule Bid Component	An Inter-Tie Resource Bid Component for ETC Self-Schedules.
Inter-Tie Resource Non-Spinning Reserve Bid Component	An Inter-Tie Resource Bid Component for Non-Spinning Reserve.
Inter-Tie Resource Non-Spinning Reserve Self-Provision Bid Component	An Inter-Tie Resource Bid Component for Non-Spinning Reserve Self-Provision.
Inter-Tie Resource PT Self-Schedule Bid Component	An Inter-Tie Resource Bid Component for a PT Self-Schedule.
Inter-Tie Resource Regulation Down Bid Component	An Inter-Tie Resource Bid Component for Regulation Down.
Inter-Tie Resource Regulation Down Self-Provision Bid Component	An Inter-Tie Resource Bid Component for Regulation Down Self-Provision.
Inter-Tie Resource Regulation Up Bid Component	An Inter-Tie Resource Bid Component for Regulation Up.
Inter-Tie Resource Regulation Up Self-Provision Bid Component	An Inter-Tie Resource Bid Component for Regulation Up Self-Provision.
Inter-Tie Resource RUC Bid Component	An Inter-Tie Resource Bid Component for RUC Capacity.
Inter-Tie Resource Self-Schedule Bid Component	An Inter-Tie Resource Bid Component for Self-Schedules.
Inter-Tie Resource Spinning Reserve Bid Component	An Inter-Tie Resource Bid Component for Spinning Reserve.
Inter-Tie Resource Spinning Reserve Self-Provision Bid Component	An Inter-Tie Resource Bid Component for Spinning Reserve Self-Provision.
Inter-Tie Resource TOR Self-Schedule Bid Component	An Inter-Tie Resource Bid Component for TOR Self-Schedules.
Inter-Tie Scheduling Limit	A scheduling limit that applies on an Inter-Tie.
Inter-Tie Scheduling Point	A Location associated with an Inter-Tie Resource.
Inter-Tie Scheduling Point Bid Direction	An Inter-Tie Scheduling Point attribute that indicates whether the Scheduling Point only allows import bids/self-schedules (I), only allows export bids/self-schedules (E), or allows both imports and exports (B).
Inter-Tie Scheduling Point Bid Period	An Inter-Tie Scheduling Point attribute that indicates whether the Scheduling Point allows 15 minute bids (Y) or not (N).
Inter-Tie Transaction	An Inter-Tie Resource that is identified dynamically, but persistently in the Market by a unique combination of submitted Bid attributes.



Inter-Tie Transaction Identification	The unique identifier of an Inter-Tie Transaction assigned by SIBR based on a unique combination of submitted Bid attributes, as follows: SCID-LID-TID-D-BT[-ET-PSE] Where: SCID is the Scheduling Coordinator identification (required); LID is the Inter-Tie Scheduling Point identification (required); TID is the Primary Inter-Tie identification (required); D is the Direction (required): I for Import and E for Export; BT is the Bid Type (required): P for physical and V for virtual; ET is the Energy Type (required for physical transactions): F for firm, N for non-firm, U for unit-contingent, D for Dynamic Interchange, and W for Wheeling Resource; and PSE is a registered Purchase-Selling Entity (required for physical transactions) with optional trailing numerals (from ".1" to ".9"); it can be used to distinguish multiple Inter-Tie Transactions by PSE.
Invalid	The Bid Status of a Bid or a Bid Component that has failed Bid Validation.
Invalid Bid	A Bid that has failed Bid Validation.
IRR	The RA repository (IRRSNAP schema) that contains the RA Capacity information on an hourly basis.
ISO Demand Forecast Indicator	If set, it indicates that an EIM Entity has elected to use the Demand Forecast produced by the CAISO for balancing Base Schedules in their EIM BAA(s).
Isolated ISL Indicator	A Y/N ISL attribute published by ETCC indicating an isolated ISL condition where only stranded load can be served under the ISL OTC.
Isolated ITC Indicator	A Y/N ITC attribute published by ETCC indicating an isolated ITC condition where only stranded load can be served under the ITC OTC.
Joint Operated Unit	A Generating Resource that is owned by multiple entities; the resource is scheduled and dispatched by CAISO, but two or more Scheduling Coordinators provide the bids for their own shares.
JOU Child Ownership Share	The fractional share of the JOU Parent Resource that is owned by the JOU Child Resource.
JOU Child Resource	A share of the Joint Operated Unit that is bid by a single Scheduling Coordinator.
JOU Parent Resource	The Joint Operated Unit physical Resource.
Lay-Off Self-Schedule	A Self-Schedule from a Pseudo-Tie indicating Energy for the relevant Native Control Area.
Lay-Off Self-Schedule Bid Component	A Bid Component for a Lay-Off Self-Schedule.
Lay-Off Self-Schedule Quantity	The Energy Bid Quantity for a Lay-Off Self-Schedule.



Limited Energy Storage Resource	A type of NGR with a continuous operating range that spans both load (charging) and generating (discharging) modes: $L_{max} < L_{min} = 0 = G_{min} < G_{max}$.
Load Capacity Limit	A limit for the total Non-Generator Resource load Capacity that can be used for Commodities in DAM and RTM.
Load Following	The Load Following Down or Load Following Up service by a MSSA.
Load Following Down Capacity	The Capacity designated for Load Following Down Self-Provision.
Load Following Down Self-Provision	The service where a MSSA decrements designated Resources to meet the relevant MSS load deviations in real time.
Load Following Down Self-Provision Bid Component	A Bid Component for Load Following Down Self Provision.
Load Following Option	The option by a MSSA to perform Load Following.
Load Following Resource	A Resource used for Load Following, registered with a MSSA that has elected the Load Following Option.
Load Following Up Capacity	The Capacity designated for Load Following Up Self-Provision.
Load Following Up Self-Provision	The service where a MSSA increments designated Resources to meet the relevant MSS load deviations in real time.
Load Following Up Self-Provision Bid Component	A Bid Component for Load Following Up Self Provision.
Load Resource	A Resource that consumes Energy.
Load Self-Schedule	A Self-Schedule from a NGR in load mode.
Load Self-Schedule Bid Component	A Bid Component for Load Self-Schedules.
Load Serving Entity	A market participant that is an agent for Load Resources.
Load-Serving Generator	A Generating Resource that serves load behind the meter qualifying for net Energy settlement.
Location	A Network Node or an aggregation of Network Nodes.
Long Trading Day	The Trading Day when daylight saving ends. It has 25 Trading Hours, including the additional Trading Hour from 3:00 AM PDT to 3:00 AM PST.
Long-Start Resource	A Resource that cannot be committed in RTM, for which $SUT + MUT > \text{Long-Start Resource Cycle Time}$.
Long-Start Resource Cycle Time	A configurable cycle time value, in minutes, which differentiates short-start resources from Long-Start Resources. $\text{Cycle time} = SUT + MUT$.
Lower Charge Limit	The lowest stored Energy that should be maintained in a LESR.
Lower Economic Limit	The first (lowest) Energy Bid Quantity of the Energy Bid Curve specified in an Energy Bid Component.
Lower Operating Limit	The Minimum Load of a Resource, incorporating any applicable overrates.
Lower Regulating Limit	The lowest Operating Level of a Regulating Range.



LPT Self-Schedule	Lower Priority Self-Schedule used for Exports that are not identified as being supported by non-RA Capacity
LPT Self-Schedule Bid Component	A Bid Component for a LPT Self-Schedule.
LPT Self-Schedule Quantity	The Energy Bid Quantity of a LPT Self-Schedule.
LSG Self-Schedule	A Self-Schedule for the load behind the meter of a LSG.
LSG Self-Schedule Bid Component	A Bid Component for a LSG Self-Schedule.
LSG Self-Schedule Quantity	The Energy Bid Quantity for a LSG Self-Schedule.
Major Maintenance Minimum Load Cost Adder	A major maintenance cost adder to the Proxy Minimum Load Cost for a Generating Resource or MSG configuration.
Major Maintenance Start-Up Cost Adder	A major maintenance cost adder to each segment of the Proxy Start-Up Cost Curve for a Generating Resource or MSG configuration.
Manual Consult Flag	A Yes/No flag indicating whether the Gas Price Index was based on a manual consultation.
Manual Consult Minimum Load Fuel Cost	The cost of the fuel consumed by a Generating Resource operating at its Minimum Load. Gas price from a manual consultation is used in the calculation.
Manual Consult Start-Up Fuel Cost Curve	A Start-Up Fuel Cost versus Cooling Time curve for a Generating Resource. Gas price from a manual consultation is used in the calculation.
Market	A forum where Bids for supply and demand of a Commodity are evaluated and selected so that supply meets demand.
Market Accepted Bid	A Conditionally Valid, Valid, Conditional Modified, or Modified Bid.
Market Close Time	The latest time that a physical Resource Bid can be submitted in a DAM in advance of the relevant Active Day, or in a RTM in advance of the relevant Active Hour.
Market Fill Option	A SIBR initialization parameter that controls the Multi-Period Bid Generation in the DAM when the Bid Fill Option is set to "No" or "Last": Yes: Market Accepted Bids are used as is. No: Default prices are used for SUC/MLC and Energy/AS/RUC.
Market Horizon	The time period for which Bids are evaluated in a Market.
Market Open Time	The earliest time that a Bid can be submitted in a DAM in advance of the relevant Active Day, or in a RTM in advance of the relevant Active Hour.
Market Type	An indicator specifying the Market for which a Bid is submitted.
Master File	A global Resource data registry.
Master File Requirement	A Master File data requirement.
Matching Ancillary Service Obligation Trade	A Submitted Ancillary Service Obligation Trade by the Counterparty of an Ancillary Service Obligation Trade for the same Market and Trade Period with opposite Traded Ancillary Service Obligation.



Matching Energy Trade	A Submitted Energy Trade by the Counterparty of an Energy Trade for the same Market and Trade Period at the same Location with opposite Traded Energy.
Maximum Capacity	The maximum sustained Operating Level of a Generating Resource.
Maximum Cost-Verified Bid Price	For a given hour, the highest value of all the Energy Bid Prices submitted and validated (or generated) for Generating Resources and Non-Generator Resources, excluding RDRRs.
Maximum Daily Energy Limit	The maximum Energy scheduled and dispatched from a Generating Resource within a Trading Day.
Maximum Daily Generating Energy Limit	The maximum net Energy produced by a NGR within a Trading Day.
Maximum Daily Load Energy Limit	The maximum net Energy consumed by a NGR within a Trading Day.
Maximum Daily Start-Ups	The maximum number of Start-Ups allowed for a Generating Resource within a Trading Day.
Maximum DEB Price	For a given hour, the highest value of all DEB Prices.
Maximum Dynamic Limit	The maximum anticipated operating limit of a Hybrid Resource over a Dispatch Interval.
Maximum Energy Curve Segment Number	The maximum allowed number of Energy Bid Segments in Submitted Bids.
Maximum ETC Self-Schedule Quantity	The maximum ETC Self-Schedule Quantity allowed for a Resource.
Maximum Generating Capacity	The maximum generating capacity at a Virtual Supply Resource Location that is not an Inter-Tie Scheduling Point.
Maximum Greenhouse Gas Emission Rate	The greenhouse gas emission rate used to calculate the Default Maximum Greenhouse Gas Price; it is determined from the highest emitting unit.
Maximum Greenhouse Gas Price	The maximum allowable Greenhouse Gas Price for a specific Resource based on the relevant greenhouse gas emission rate and heat rate, or a negotiated value.
Maximum Inter-tie and Virtual Bid Price	An hourly bid cap for Inter-tie and Virtual Bids.
Maximum ISL Export Capacity	The maximum export capacity at a Virtual Demand Resource Location that is an Inter-Tie Scheduling Point, related to the ISL of an Inter-Tie associated with that Inter-Tie Scheduling Point.
Maximum ISL Import Capacity	The maximum import capacity at a Virtual Demand Resource Location that is an Inter-Tie Scheduling Point, related to the ISL of an Inter-Tie associated with that Inter-Tie Scheduling Point.
Maximum ITC Export Capacity	The maximum export capacity at a Virtual Demand Resource Location that is an Inter-Tie Scheduling Point, related to an ITC associated with that Inter-Tie Scheduling Point.
Maximum ITC Import Capacity	The maximum import capacity at a Virtual Demand Resource Location that is an Inter-Tie Scheduling Point, related to an ITC associated with that Inter-Tie Scheduling Point.



Maximum Load Capacity	The maximum load capacity at a Virtual Demand Resource Location that is not an Inter-Tie Scheduling Point.
Maximum LSG Self-Schedule Quantity	The maximum LSG Self-Schedule Quantity allowed for a Generating Resource.
Maximum NGR Generation	The maximum sustained Operating Level of a NGR operating in generating mode.
Maximum NGR Load	The maximum sustained Operating Level of a NGR operating in load mode.
Maximum Online Generating Resource State Count	The configurable maximum number of Online Generating Resource States that can be bid in a Bid.
Maximum Pumping Capacity	The maximum sustained Pumping Level of a Pumped-Storage Hydro Unit operating as a hydro pump.
Maximum Ramp Rate	The maximum Ramp Rate of an Inter-Tie Resource.
Maximum Ramp Rate Curve Segment Number	The maximum allowed number of Ramp Rate curve segments in Submitted Bids for Generating Resources.
Maximum RMT Self-Schedule Quantity	The maximum RMT Self-Schedule Quantity allowed for a Generating Resource.
Maximum Start-Up Time/Cost Curve Segment Number	The maximum allowed number of Start-Up Time/Cost Curve segments in Submitted Bids.
Maximum State Transition Time	The maximum State Transition Time for a registered State Transition Definition of a MSG. This is the NOTIFICATION time that is retrieved from MF and includes the Transition Ramp Time as part of the Notification Time (used to validate the Notification Time submitted in a bid).
Maximum Stored Energy	The maximum energy (MWh) that can be stored in a LESR.
Maximum TOR Self-Schedule Quantity	The maximum TOR Self-Schedule Quantity allowed for a Resource.
Meter Subsystem	An entity, e.g., a municipality or irrigation district, whose contiguous network and resources are part of the CAISO grid, and there are revenue quality meters installed on all MSS ties.
Meter Subsystem Aggregation	The aggregation of Metered Subsystems under a common set of options for a) Load Following, b) RUC participation, and c) gross versus net settlement.
Minimum Daily Energy Limit	The minimum Energy scheduled and dispatched from a Generating Resource within a Trading Day; it is used to specify maximum pumping Energy for PSH units.
Minimum Daily Generating Energy Limit	The minimum net Energy produced by a NGR within a Trading Day.
Minimum Daily Load Energy Limit	The minimum net Energy consumed by a NGR within a Trading Day.
Minimum Down Time	The minimum duration that a Generating Resource must stay off from a given Online Generating Resource State after a State Transition from that State onto another Generating Resource State (including the Offline Generating Resource State).



Minimum Dynamic Limit	The minimum anticipated operating limit of a Hybrid Resource over a Dispatch Interval.
Minimum Energy Bid Segment Size	The minimum required size of any Energy Bid Segment in a Virtual Resource Energy Bid Component.
Minimum Gen-to-Pump Down Time	The minimum duration that a PSH must stay Offline between generating and pumping operations.
Minimum Hourly Block	The minimum number of consecutive Trading Hours that an Inter-Tie Resource must be scheduled, if at all.
Minimum Load	The minimum sustained Operating Level of a Generating Resource.
Minimum Load Cap Denominator	The smallest minimum load value used in calculating a minimum load cost using the Energy Bid Ceiling.
Minimum Load Cost	The Operating Cost of a Generating Resource operating at its Minimum Load.
Minimum Load Cost Basis	A Generating Resource option (applicable to all MSG configurations) that indicates the basis of the MLC determination: Registered Cost: The MLC is registered. Proxy Cost: The MLC is bid, but it cannot be higher than an approximation of the actual MLC.
Minimum Load Cost Bid Component	A Bid Component for Minimum Load Cost.
Minimum Load Fuel Cost	The cost of the fuel consumed by a Generating Resource operating at its Minimum Load.
Minimum Load Operation and Maintenance Cost	A portion of the Minimum Load Cost of a Generating Resource that is related to operating and maintenance expenses.
Minimum Load Opportunity Cost	Long term opportunity cost for a ULR at Minimum Load per Online Generating Resource State.
Minimum NGR Generation	The minimum sustained Operating Level of a NGR operating in generating mode.
Minimum NGR Load	The minimum sustained Operating Level of a NGR operating in load mode.
Minimum Pump-to-Gen Down Time	The minimum duration that a PSH must stay Offline between pumping and generating operations.
Minimum Pump-to-Pump Down Time	The minimum duration that a PSH must stay Offline between pumping operations.
Minimum Resource Down Time	The minimum duration that a Generating Resource must stay Offline State after a Shut Down from any Online Generating Resources State. This is equivalent to a Minimum Up Time for the Offline Generating Resource State.
Minimum Resource Up Time	The minimum duration that a Generating Resource must stay Online in any Online Generating Resource State, including State Transitions between Online Generating Resource States. This is



	equivalent to a Minimum Down Time for the Offline Generating Resource State.
Minimum State Group Down Time	The minimum duration that a Generating Resource must stay off from a given Online Generating Resource State Group after a State Transition from a State in that Group onto another State (including the Offline Generating Resource State) not in that Group.
Minimum State Group Up Time	The minimum duration that a Generating Resource must stay Online in a given Online Generating Resource State Group.
Minimum Stored Energy	The minimum energy (MWh) that must remain in a LESR.
Minimum Up Time	The minimum duration that a Generating Resource must stay Online in a given Online Generating Resource State.
Mirror DSR	For Detour System Resources (DSRs), indicates the complementary DSR for the counter BAA; the Mirror DSR for an Import DSR is an Export DSR, and vice versa.
Mirror ETSR	For Energy Transfer System Resources (ETSRs), indicates the complementary ETSR for the counter BAA; the Mirror ETSR for an Import ETSR is an Export ETSR, and vice versa.
Miscellaneous Bid Component	An hourly Bid Component for miscellaneous Bid information.
Modified Bid	A Bid modified by SIBR in Bid Processing after the Master File update for the relevant Trading Day.
MOO Resource	A Resource that is under a Must Offer Obligation for its RA Capacity, as indicated by the RA Flag.
Multi-Day Bid Resource Exception List	A persistent Resource list maintained administratively in SIBR for the purpose of overwriting market-based bids with default bids in DAM Multi-Period Bids for the Resources in that list.
Multi-Period Bid	A Bid generated for a Trading Day after the Active Day in a Day-Ahead Market Horizon for a given Day-Ahead Market, or a Trading Hour after the Active Hour in the Real-Time Market Horizon for a given Real-Time Market.
Multi-State Generator	A Generating Resource with multiple Online Generating Resource States.
Must-Offer Obligation	A condition where a Resource must participate in the DAM and/or the RTM due to Resource Adequacy requirements.
Native Control Area	The Control Area that a Pseudo-Tie resides in.
Natural Gas Resource	A Generating Resource fueled by natural gas.
Negotiated O&M Indicator	A registered indicator for each generating resource that indicates whether the resource's Minimum Load and Start-Up O&M Costs are negotiated ('Negotiated') or set to the default ('Default') value.
NERC Tag	Inter-Tie scheduling information in accordance with NERC standards.
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.
Net Interchange	The net Energy flow over all Inter-Ties of a Control Area.
Network	The collective of system components that produce, transmit, or consume Energy.
Network Branch	A Network component used to transmit electric energy between Network Nodes.
Network Node	A node where Network components connect.
NGR Maximum Ramp Rate Curve Segment Number	The maximum allowed number of Ramp Rate curve segments in Submitted Bids for NGR.
Nodal Pricing Market	A market run in parallel with the Day Ahead Market, providing advisory results for entities which are not participating in the Day Ahead Market.
Non-EIM BAA	A BAA that does not participate in EIM.
Non-Firm Import Resource	An Import Resource that is not supported by Spinning Reserve; it is registered or specified with Energy Type NF.
Non-Generator Resource	A NGR is a Resource with up to two operating modes: a) a generating mode from G_{min} to G_{max} ($0 \leq G_{min} \leq G_{max}$), and b) a load mode from L_{min} to L_{max} ($0 \geq L_{min} \geq L_{max}$). Currently, a NGR has a continuous operating range and no inter-temporal constraints $L_{min} = 0 = G_{min}$. Currently, a NGR may not be associated with an Inter-Tie or an ECA/ACA, it may not be an RA Resource or a Supporting Resource, it may not bid Ancillary Service Self-Provision, it may not be certified for Load Following or RUC, and it may not bid Self-Schedules other than Price Taker Self-Schedules.
Non-Market-Rate Resource	A Resource for which FERC has temporarily suspended market rate authority disallowing bids at market rates.
Non-Participating Load Resource	A Load Resource that cannot be dispatched to change its Energy consumption.
Non-Participating Load Resource Bid Component	A Bid Component for a Non-Participating Load Resource.
Non-Spinning Reserve	An Ancillary Service from an Offline Generating Resource or an Inter-Tie Resource, or a participating load Resource , to provide Energy within a specified time period after a Dispatch Instruction is issued.
Non-Spinning Reserve Award	An Award for Non-Spinning Reserve from a Non-Spinning Reserve Self-Provision Bid Component and a Non-Spinning Reserve Bid Component.
Non-Spinning Reserve Bid Component	A Bid Component for Non-Spinning Reserve.
Non-Spinning Reserve Capacity	The Capacity designated for Non-Spinning Reserve.
Non-Spinning Reserve Obligation	The Demand for which a Scheduling Coordinator is financially responsible for Non-Spinning Reserve.



Non-Spinning Reserve Obligation Trade	A Trade of a Non-Spinning Reserve Obligation.
Non-Spinning Reserve Price	The price of a Bid for Non-Spinning Reserve.
Non-Spinning Reserve Self-Provision	Non-Spinning Reserve provided by a Scheduling Coordinator to primarily meet its own Non-Spinning Reserve Obligation.
Non-Spinning Reserve Self-Provision Bid Component	A Bid Component for Non-Spinning Reserve Self-Provision.
Non-Spinning Reserve Self-Provision Capacity	The Capacity designated for Non-Spinning Reserve Self-Provision.
North American Electric Reliability Council	The authoritative body with the mission to ensure that the bulk electric system in North America is reliable, adequate, and secure.
Notification Time	The notification time for completing a MSG State Transition between Online Generating Resource States (biddable).
NPM Resource	A resource which participates in the Nodal Pricing Market.
NPM Scheduling Coordinator	A market participant authorized by the ISO to submit Bids for the Nodal Pricing Market. It is possible that the same resource has associated with it both a Scheduling Coordinator (for the Real-Time Market) and a NPM Scheduling Coordinator.
NPM-Type AS Region	An AS Region defined in the Nodal Pricing Market, for which EIM entities submit Ancillary Service requirements.
NQC Status	A Y/N status indicating whether or not a resource has a net qualifying capacity (NQC).
Obsolete	The Bid Status of a Bid made obsolete by a Submitted Bid for the same SC, Resource, Resource Type, Market Type, and Bid Period, with a later Bid Submission Time.
Obsolete Bid	A Bid made obsolete by a Submitted Bid for the same SC, Resource, Resource Type, Market Type, and Bid Period, with a later Bid Submission Time.
ODCP Bid	A Bid used in the ODCP process.
ODCP Offer Status	A Y/N status indicating whether or not a resource is eligible for offering ODCP bids.
Offline	The Commitment Status of a Generating Resource that is not connected to the grid.
Off-Peak RLC Curve	A proxy Energy Bid Curve used for RA Import Resources during Off-Peak Trading Hours.
Off-Peak Trading Hour	A Trading Hour during off-peak load conditions as specified by WECC: Mon-Sat 0:00-6:00 and 22:00-24:00, and all day on Sun and certain holidays.
On Demand Capacity Procurement	A Market with a variable Market Horizon of consecutive Trading Intervals that spans anywhere from 15 minutes to one day. The purpose of the market is to procure capacity on-demand if needed in real-time. As needed, the market is run either the day before the capacity is procured, or immediately before.



Online	The Commitment Status of a Generating Resource that is connected to and synchronized with the grid.
Online Generating Resource State Group	A group of Online Generating Resource States of a MSG. Online Generating Resource State Groups may be nested.
Online Generating Resource State Shut- Down Capability Indicator	An Indicator that indicates whether a MSG can Shut-Down from an Online Generating Resource State.
Online Generating Resource State Start-Up Capability Indicator	An Indicator that indicates whether a MSG can Start-Up to an Online Generating Resource State.
Online State Transition Opportunity Cost	Long term opportunity cost for a ULR MSG Online State Transition Definition.
On-Peak RLC Curve	A proxy Energy Bid Curve used for RA Import Resources during On-Peak Trading Hours.
On-Peak Trading Hour	A Trading Hour during on-peak load conditions as specified by WECC: Mon-Sat 6:00-22:00 except certain holidays.
Open Tie Status	An hourly Y/N status generated by SIBR for a Bid to indicate open or isolated ITC conditions that apply to that Bid for the relevant Trading Hour. The DAM and RTM applications would treat the Resource as unavailable in these Trading Hours producing zero Energy/AS schedules.
Operating Cost	The cost of operating a Resource.
Operating Level	The amount of electric power a Resource produces or consumes at a given time.
Operating Level Break Point	An Operating Level that defines the start or the end of a segment of an Operational Ramp Rate Curve.
Operation and Maintenance Cost	The portion of the Operating Cost of a Generating Resource that is not related to fuel cost.
Operational Transfer Capability	The dynamic directional ITC limit published by ETCC.
Overlapping Resource Aggregation	A group of Aggregate EIM Resources that share the same set of physical resources; they must all reside in the same EIM BAA. ORAs may not overlap.
Overlapping Resource Aggregation Type	The type of an Aggregate Resource in an ORA: ANPR_BASE: a single EIMNPR NGR that may have a non-negative Base Energy Schedule. ANPR_NCL: a single EIMNPR NGR that may have a non-positive Base Energy Schedule. APR: a single EIMPR NGR that may have an Energy Bid Component and Spinning and Non-Spinning Reserve Base Schedules. ANPR_AM: multiple EIMNPR NGR that may be registered for Auto-Match. ANPR_ABC: a single EIMNPR NGR that may have AS Base Schedules.



Participating Transmission Owner	A Transmission Owner that has transferred control of its Network Branches to the ISO.
PDR-LSR Consumption Resource	A consumption resource which is part of a pair of resources modeled for purposes of load shifting. The resource is modeled as a DDR in the CAISO market systems.
Pending Bid Approval Option	An administrative option (Y/N) persistently maintained in SIBR and controlling whether Valid Virtual Resource Bids with Credit Status of Pending Response are approved and promoted to Clean Bids (Y) or invalidated (N) after the DAM Market Close.
Pending Request	The Credit Status assigned to a Submitted Virtual Resource Bid. In implementation, an unassigned Credit Status (null) is interpreted as a Credit Status of Pending request.
Pending Response	The Credit Status assigned to a Conditionally Valid or Valid Virtual Resource Bid after it is sent to CTS for Credit Request.
Physical Resource	A physical Resource that can actually produce or consume Energy.
Physical Resource Bid	A Bid for a Physical Resource.
Price Precision	The minimum price precision allowed in a Bid.
Price-Taker	An Energy Bid Quantity without an explicit Energy Bid Price, effectively at the lowest possible Energy Bid Price for Supply or the highest possible Energy Bid Price for Demand.
Primary Inter-Tie	The Inter-Tie associated with an Inter-Tie Resource for tagging Schedules and Awards from associated Bids when the Open Tie Status is not set for these Bids.
Priority Indicator	An indicator for each TOR/ETC and Trading Hour that indicates whether the corresponding TOR/ETC has passed or failed TOR/ETC Entitlement validation.
Proxy Demand Resource	A logical Generating Resource used to model demand response.
Proxy Minimum Load Cost	An approximation of the actual MLC for a Generating Resource registered with a Minimum Load Cost Basis of "Proxy Cost".
Proxy Start-Up Cost Curve	An approximation of the actual SUC for a Generating Resource registered with a Start-Up Cost Basis of "Proxy Cost".
Proxy State Transition Cost	An approximation of the actual STC for a MSG State Transition between Online Generating Resource States.
Pseudo-Tie	A Generating Resource within a Control Area (Native Control Area), but under the operational control of another Control Area (Attaining Control Area).
PSH Group	A grouping of Pumped-Storage Hydro (PSH) Units whose individual operating characteristics are dependent on operating characteristics of other resources in the group.
PSH Group Schedule Direction Flag	A Yes/No flag indicating whether resources in the PSH Group need to schedule consistently in gen mode or pump mode. Yes indicates that all resources in the group need to self-schedule (or base schedule) and submit bids for the same mode.



PT Export Capacity Factor	A configurable parameter used for Export Resource Self-Schedule priority determination.
PT Export Capacity	The maximum Capacity that a Registered Export Resource is eligible for PT Export scheduling priority.
PT Export Indicator	A Master File flag (Yes/No) indicating that a Registered Export Resource is eligible for PT Export scheduling priority.
PT Export Support Indicator	A Master File flag (Yes/No) indicating that a Generating Resource or a Non-Generator Resource is eligible and its SC has elected to provide support for PT Export scheduling priority.
PT Generating Self-Schedule	A Self-Schedule from a Price-Taker NGR in generating mode.
PT Generating Self-Schedule Bid Component	A Bid Component for a PT Generating Self-Schedule.
PT Generating Self-Schedule Bid Quantity	The Energy Bid Quantity for a PT Generating Self-Schedule.
PT Load Self-Schedule	A Self-Schedule from a Price-Taker NGR in load mode.
PT Load Self-Schedule Bid Component	A Bid Component for a PT Load Self-Schedule.
PT Load Self-Schedule Bid Quantity	The Energy Bid Quantity for a PT Load Self-Schedule.
PT Pumping Self-Schedule	A Pumping Self-Schedule from a Price Taker.
PT Pumping Self-Schedule Bid Component	A Bid Component for a PT Pumping Self-Schedule.
PT Pumping Self-Schedule Quantity	The Energy Bid Quantity for a PT Pumping Self-Schedule.
PT Self-Schedule	A Self-Schedule from a Price Taker.
PT Self-Schedule Bid Component	A Bid Component for a PT Self-Schedule.
PT Self-Schedule Quantity	The Energy Bid Quantity for a PT Self-Schedule.
Pump	A Resource that can only operate in pumping mode.
Pump Shut-Down Cost	The cost to shut down a Pumped-Storage Hydro Unit (in pumping mode) or a Pump.
Pumped-Storage Hydro Unit	A hydro generating station with the capability to operate as a hydro pump.
Pumping Bid Component	A Bid Component with pumping data for Pumped-Storage Hydro Units and Pumps.
Pumping Cost	The Operating Cost of a Pump or a Pumped-Storage Hydro Unit operating as a hydro pump.
Pumping Level	The fixed Operating Level of a Pump or a Pumped-Storage Hydro Unit operating as a hydro pump.
Pumping Minimum Up Time	The minimum duration that a PSH must stay Online in pumping operation.
Pumping Self-Schedule	A Self-Schedule from a Pump or a Pumped-Storage Hydro Unit operating as a hydro pump.



Pumping Self-Schedule Bid Component	A Bid Component for a Pumping Self-Schedule.
Pumping Self-Schedule Quantity	The Energy Bid Quantity for a Pumping Self-Schedule.
Purchasing-Selling Entity	A registered entity that purchases or sells Energy or Ancillary Services over Inter-Ties; it appears in electronic tags for Inter-Tie Schedules.
Quantity Precision	The minimum Capacity or Energy precision allowed in a Bid.
RA Capacity	The Capacity of a Resource under Resource Adequacy requirements, provided by IRR for each Resource and Trading Hour.
RA Flag	A Yes/No flag provided by IRR for each Resource and Trading Hour indicating whether the Resource is a RA Resource in that Trading Hour. It is used for MOO status determination.
RA Resource	A Resource with Resource Adequacy requirements.
RAAIM Hour	An hour in which a resource's availability is assessed under the Resource Adequacy Availability Incentive Mechanism (RAAIM).
Ramp Rate	The rate of change of the Operating Level of a Resource.
Ramp Rate Bid Component	A Bid Component for Ramp Rates.
Ramp Rate Bid Curve	The Ramp Rate curve of a Non-Generator Resource.
Ramp Rate Bid Option	A SIBR initialization parameter allowing the bid to specify ramp rate values. When set to ON, participants are able to submit a ramp rate bid. Option will be set consistent with tariff provisions covering this feature.
RC Entity	The operator of RC.
RC Entity BSC	The BSC of an RC Entity for a BAA in that RC. It is the BSC for all RC Resources in that BAA and all Intertie Transactions for RC Inter-Ties from that BAA.
RC Inter-Tie	An Inter-Tie from a non-EIM BAA, or a non-EIM Inter-Tie from an EIM BAA not in RC West to another BAA. There must be a clear distinction between EIM Inter-Ties and RC Inter-Ties.
RC Resource	A Resource in a non-EIM BAA in RC West, or in a BAA (EIM or non-EIM) not in RC West for which a RC Entity BSC is authorized to submit Base Schedules. For an EIM BAA not in RC West, there must be a clear distinction between EIM Resources and RC Resources.
RC West	The CAISO RC.
Real-Time Advance Bid Ceiling Check Time	A start time, measured in minutes before market close, when SIBR checks submitted bids to determine whether a bid cap for Inter-Tie, Virtual, and Non-Participating Load resources may be raised.
Real-Time Base Schedule Fifth Cutoff Time	The fifth and final cutoff time when Base Schedules can be submitted in the RTM for the Active Hour. Used only for RC Resources.



Real-Time Base Schedule First Cutoff Time	The first cutoff time when Base Schedules can be submitted in the RTM for the Active Hour. Used for both EIM and RC Resources.
Real-Time Base Schedule Fourth Cutoff Time	The fourth cutoff time when Base Schedules can be submitted in the RTM for the Active Hour. Used only for RC Resources.
Real-Time Base Schedule Second Cutoff Time	The second cutoff time when Base Schedules can be submitted in the RTM for the Active Hour. Used for both EIM and RC Resources.
Real-Time Base Schedule Third Cutoff Time	The third cutoff time when Base Schedules can be submitted in the RTM for the Active Hour. Used for both EIM and RC Resources.
Real-Time Demand Forecast First Cutoff Time	The first cutoff time used in the RTM to retrieve the Demand Forecast for a BAA for the Active Hour for Base Schedule balancing validation. Used for both EIM and RC Resources.
Real-Time Demand Forecast Second Cutoff Time	The second cutoff time used in the RTM to retrieve the Demand Forecast for a BAA for the Active Hour for Base Schedule balancing validation. Used for both EIM and RC Resources.
Real-Time Demand Forecast Third Cutoff Time	The third cutoff time used in the RTM to retrieve the Demand Forecast for a BAA for the Active Hour for Base Schedule balancing validation. Used for both EIM and RC Resources.
Real-Time Inter-Tie Energy Bid Ceiling	The maximum price allowed in the Real-Time Market for an Energy Bid Component for certain Inter-Tie Resources.
Real-Time Market	A Market with a Market Horizon of consecutive Trading Intervals that span one or more consecutive Trading Hours. This Market is conducted shortly (1½ Trading Intervals) before the start of its Market Horizon. Dispatches, and Awards are financially binding for the first Trading Interval and advisory for the remaining Trading Intervals in the Market Horizon.
Real-Time Market Horizon	The number of Trading Hours in the Market Horizon of a given Real-Time Market.
Real-Time Maximum Import Bid Price	An hourly proxy price representing generating costs outside of the CAISO Balancing Authority Area applicable to the Real-Time Market.
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.
Registered Export Resource	A Registered Resource that is an Export Resource.
Registered Import Resource	A Registered Resource that is an Import Resource.
Registered Inter-Tie Resource	A Registered Resource that is an Inter-Tie Resource. An Inter-Tie Generating Resource (TG) is both a Generating Resource and an Inter-Tie Resource, thus it is also a Registered Inter-Tie Resource.
Registered Resource	A Resource that is registered and identified statically in the Market by a unique resource identification.
Registry Start Date	The latest Trading Day when the registry data for a Resource has been modified.
Regulating Range	The Operating Level range within which a Generating Resource may provide Regulation.
Regulation	An Ancillary Service provided by a Resource that is dynamically controlled to maintain the frequency and Net Interchange of the ISO Control Area.
Regulation Down	Downward Regulation.
Regulation Down Award	An Award for Regulation Down from a Regulation Down Self-Provision Bid Component and a Regulation Down Bid Component.
Regulation Down Bid Component	A Bid Component for Regulation Down.
Regulation Down Capacity	The Capacity designated for Regulation Down.
Regulation Down Obligation	The Demand for which a Scheduling Coordinator is financially responsible for Regulation Down.
Regulation Down Opportunity Cost	The long-term opportunity cost for providing Regulation Down.
Regulation Down Price	The price of a Bid for Regulation Down.
Regulation Down Self-Provision	Regulation Down provided by a Scheduling Coordinator to primarily meet its own Regulation Down Obligation.
Regulation Down Self-Provision Bid Component	A Bid Component for Regulation Down Self-Provision.
Regulation Down Self-Provision Capacity	The Capacity designated for Regulation Down Self-Provision.
Regulation Energy Management	Master File designated resource with negative or positive power injection.
Regulation Energy Management Resource	A type of LESR or DDR enrolled in ISO's program to manage SOC while on Regulation.
Regulation Mileage Bid Ceiling	The maximum price allowed in a Regulation Mileage Up or Down Bid Component.
Regulation Mileage Down	An Ancillary Service for Resource movement while on Regulation Down.
Regulation Mileage Down Bid Component	A Bid Component for Regulation Mileage Down.



Regulation Mileage Down Price	The price of a Bid for Regulation Mileage Down.
Regulation Mileage Up	An Ancillary Service for Resource movement while on Regulation Up.
Regulation Mileage Up Bid Component	A Bid Component for Regulation Mileage Up.
Regulation Mileage Up Price	The price of a Bid for Regulation Mileage Up.
Regulation Up	Upward Regulation.
Regulation Up Award	An Award for Regulation Up from a Regulation Up Self-Provision Bid Component and a Regulation Up Bid Component.
Regulation Up Bid Component	A Bid Component for Regulation Up.
Regulation Up Capacity	The Capacity designated for Regulation Up.
Regulation Up Obligation	The Demand for which a Scheduling Coordinator is financially responsible for Regulation Up.
Regulation Up Obligation Trade	A Trade of Regulation Up Obligation.
Regulation Up Opportunity Cost	The long-term opportunity cost for providing Regulation Up.
Regulation Up Price	The price of a Bid for Regulation Up.
Regulation Up Self-Provision	Regulation Up provided by a Scheduling Coordinator to primarily meet its own Regulation Up Obligation.
Regulation Up Self-Provision Bid Component	A Bid Component for Regulation Up Self-Provision.
Regulation Up Self-Provision Capacity	The Capacity designated for Regulation Up Self-Provision.
Regulatory Must Run/Take	A Generating Resource that has a high scheduling priority because of regulatory requirements, e.g., run-of-the-river hydro unit, hydro unit in hydro spill condition, nuclear unit, qualifying facility, etc.
Rejected Bid	A Submitted Bid that has failed Bid Content.
Relative Greenhouse Gas Cost Adder	The relative cost adder used to calculate the Default Maximum Greenhouse Gas Price.
Relative Proxy Minimum Load Cost Ceiling	The maximum Minimum Load Cost allowed in a Minimum Load Cost Bid Component for a Generating Resource registered with a Minimum Load Cost Basis of "Proxy Cost," relative to the Proxy Minimum Load Cost.
Relative Proxy Start-Up Cost Ceiling	The maximum Start-Up Cost allowed in a Start-Up Cost Bid Component for a Generating Resource registered with a Start-Up Cost Basis of "Proxy Cost," relative to the Proxy Start-Up Cost Curve.
Relative Proxy State Transition Cost Ceiling	The maximum State Transition Cost allowed in a State Transition Definition of a State Transition Bid Component for a Generating Resource registered with a State Transition Cost Basis of "Proxy Cost," relative to the Proxy State Transition Cost calculated for a State Transition Definition.



Relative RDRR Energy Bid Floor	A configurable parameter to set what the Bid Floor is based on the Bid Ceiling Price.
Reliability Coordinator	The entity providing reliability services (CAISO).
Reliability Demand Response Resource	A Generating Resource that conditionally participates in the DAM and RTM under system emergency or other adverse conditions.
Reliability Must Run	A condition that applies to Generating Resources that need to operate for reliability reasons under a contract with the ISO.
Reliability Unit Commitment	A Day-Ahead Market application for committing additional Resources and optimally scheduling RUC Capacity after the IFM.
Resource	A Network component that produces or consumes Energy.
Resource Adequacy	A mandatory planning and procurement process for Load Serving Entities to ensure adequate capacity to meet their demand.
Resource Type	The type of the Resource specified in the Bid Identification of a Bid or in a Base Schedule. It can be one of the following: 1) a Generating Resource ("G"); 2) a Non-Generator Resource ("NGR"); 3) an Inter-Tie Generating Resource ("TG"); 4) a Registered Import Resource ("I"); 5) a Registered Export Resource ("E"); 6) an Import Transaction ("IT"); 7) an Export Transaction ("ET"); 8) a Non-Participating Load Resource ("L"); 9) a Virtual Generating Resource ("VG"); 10) a Virtual Load Resource ("VL"); 11) a Virtual Import Resource ("VI"); or 12) a Virtual Export Resource ("VE").
Resource-Specific Volatility Current Scalar	A resource-specific modifying scalar used when the calculated gas price reflects recent data.
Resource-Specific Volatility Non-Current Scalar	A resource-specific modifying scalar used when the calculated gas price reflects older data.
Right Indicator	A registered indicator for each TOR or ETC that indicates the contractual rights of that TOR or ETC in the DAM or RTM: physical, financial, both, or none.
RLC Curve	The On-Peak/Off-Peak Energy Bid Curve received from RLC (Potomac) and used to generate an Energy Bid Curve for an Import RA Resource.
RMR Resource	A Resource with a RMR contract.
RMR Schedule	The portion of the RUC Schedule identified as RMR.
RMT Reference	A unique identifier of a RMT.
RMT Self-Schedule	A Self-Schedule associated with a RMT.
RMT Self-Schedule Quantity	The Energy Bid Quantity for a RMT Self-Schedule.
RTLPT Self-Schedule	A PT Self-Schedule in RTM that loses its PT scheduling priority in the RTM Clean Bid, a LPT Self-Schedule in RTM that is promoted in the RTM Clean Bid, or a PT/LPT Self-Schedule in RTM that loses its Day-Ahead PT/ LPT scheduling priority in the RTM Clean Bid.
RTLPT Self-Schedule Bid Component	A Bid Component for a RTLPT Self-Schedule in a Clean Bid.



RTLPT Self-Schedule Quantity	The Energy Bid Quantity of a RTLPT Self-Schedule.
RTPT Self-Schedule	A PT Self-Schedule in RTM that retains its Real-Time PT scheduling priority in the RTM Clean Bid.
RTPT Self-Schedule Bid Component	A Bid Component for a RTPT Self-Schedule in a Clean Bid.
RTPT Self-Schedule Quantity	The Energy Bid Quantity of a RTPT Self-Schedule.
RUC Award	An Award for scheduled RUC Capacity.
RUC Bid Ceiling	The maximum price allowed for RUC Capacity in a Generating Resource RUC Bid Component.
RUC Bid Component	A Generating Resource Bid Component for RUC Capacity.
RUC Bid Floor	The minimum price allowed for RUC Capacity in a Generating Resource RUC Bid Component.
RUC Capacity	The Capacity of a Generating Resource above its Minimum Load, or its Day-Ahead Schedule, which is bid in RUC to meet Demand in the RTM.
RUC Infeasibility Indicator	An hourly indicator (Y/N) that is set when RUC has an under-generation power balance constraint relaxation in the corresponding Trading Hour.
RUC Generating Resource State	The Generating Resource State that is associated with the RUC Schedule.
RUC Price	The price in a Generating Resource Bid Component for RUC Capacity.
RUC Schedule	The Capacity, including the Day-Ahead Schedule, scheduled by RUC for a Resource in a Trading Hour of a Day-Ahead Market.
Schedule	The Energy scheduled for production or consumption from a Resource in a Trading Hour of a Day-Ahead Market or a Commitment Interval of a Real-Time Market.
Scheduling Coordinator	A Market participant authorized by the ISO to submit Bids and Trades.
Self-Schedule	An Energy Bid that is evaluated in a Market in terms of priority instead of price.
Self-Schedule Bid Component	A Bid Component for Self-Schedules.
Self-Schedule Quantity	The Energy Bid Quantity for a Self-Schedule.
Short Trading Day	The Trading Day when daylight saving starts. It has only 23 Trading Hours because there is no Trading Hour from 2:00 AM PST to 3:00 AM PDT.
Short-Term Unit Commitment	A Real-Time Market application for committing Resources up to three Trading Hours after the Active Hour.
Shut-Down	The process where an Online Generating Resource is disconnected from the grid and is shut down.
Shut-Down Instruction	An Instruction issued to a Generating Resource to Shut-Down and be Offline at a specific time.
Shut-Down State Transition Path	A State Transition Path of Online Generating Resource States from an Online Generating Resource State to the Offline Generating Resource State (0).



Similar Trading Day	The last Trading Day that is the same day of the week with a given Trading Day.
Similar Trading Day Type	Trading Days categorized into two types: Weekdays (M-F) and Weekends/Holidays (Sa-Su and WECC observed holidays). Describes a function used to pick the most recent Trading Day with the Same Trading Day Type. For example the most recent Trading Day that has a Similar Trading Day Type to a Sunday would be the previous day (Saturday). The most recent Trading Day that has a Similar Trading Day Type to a Saturday would be the previous Sunday. The most recent Trading Day that has a Similar Trading Day Type to Memorial Day (Monday) would be the previous day (Sunday).
Source Bid	The Bid used as a template to generate a Multi-Period Bid; it can be a forward Market Accepted Bid, a DAM Clean Bid, or a RTM Clean Bid. All Bid Components are copied from the Source Bid into the Multi-Period Bid.
Spinning Reserve	An Ancillary Service from an Online Generating Resource or an Inter-Tie Resource+C672 to provide Energy within a specified time period after a Dispatch Instruction is issued.
Spinning Reserve Award	An Award for Spinning Reserve from a Spinning Reserve Self-Provision Bid Component and a Spinning Reserve Bid Component..
Spinning Reserve Bid Component	A Bid Component for Spinning Reserve.
Spinning Reserve Capacity	The Capacity designated for Spinning Reserve.
Spinning Reserve Obligation	The Demand for which a Scheduling Coordinator is financially responsible for Spinning Reserve.
Spinning Reserve Obligation Trade	A Trade of a Spinning Reserve Obligation.
Spinning Reserve Price	The price of a Bid for Spinning Reserve.
Spinning Reserve Self-Provision	Spinning Reserve provided by a Scheduling Coordinator to primarily meet its own Spinning Reserve Obligation.
Spinning Reserve Self-Provision Bid Component	A Bid Component for Spinning Reserve Self-Provision.
Spinning Reserve Self-Provision Capacity	The Capacity designated for Spinning Reserve Self-Provision.
Start Date/Time	The date and time that designate the start of a time period such as a Bid Period.
Start-Up	The process where an Offline Generating Resource is started up and is synchronized with the grid.
Start-Up Bid Component	A Bid Component for Start-Up.
Start-Up Cost	The Operating Cost for a Generating Resource to Start-Up.



Start-Up Cost Basis	A Generating Resource option (applicable to all MSG configurations) that indicates the basis of the SUC determination: Registered Cost: The SUC is registered. Proxy Cost: The SUC is bid, but it cannot be higher than an approximation of the actual SUC.
Start-Up Cost Bid Curve	The Start-Up Cost versus Cooling Time curve in a Generating Resource Start-Up Bid Component.
Start-Up Cost Curve	The registered Start-Up Cost versus Cooling Time curve for a Generating Resource registered with a Start-Up Cost Basis of "Registered Cost".
Start-Up Energy	The Energy consumption of a Generating Resource to complete a Start-Up.
Start-Up Energy Cost	The cost of Start-Up Energy.
Start-Up Energy Cost Curve	A Start-Up Energy Cost versus Cooling Time curve for a Generating Resource.
Start-Up Energy Curve	A Start-Up Energy versus Cooling Time curve for a Generating Resource.
Start-Up Fuel	The fuel consumption of a Generating Resource to complete a Start-Up.
Start-Up Fuel Cost	The cost of Start-Up Fuel.
Start-Up Fuel Cost Curve	A Start-Up Fuel Cost versus Cooling Time curve for a Generating Resource.
Start-Up Fuel Curve	A Start-Up Fuel versus Cooling Time curve for a Generating Resource.
Start-Up Instruction	An Instruction issued to a Generating Resource to Start-Up and be Online at a specific time.
Start-Up Operation and Maintenance Cost	A portion of the Start-Up Cost of a Generating Resource that is related to operating and maintenance expenses.
Start-Up Opportunity Cost	Long term opportunity cost for a ULR Start-Up.
Start-Up Time	The notification time for a Generating Resource to complete a Start-Up from being Offline to its Minimum Load.
Start-Up Time Bid Curve	The Start-Up Time versus Cooling Time curve in a Generating Resource Start-Up Bid Component.
Start-Up Time Curve	The registered Start-Up Time versus Cooling Time curve for a Generating Resource.
State of Charge	The stored Energy in a LESR.
State Transition	The transition process of a MSG between Generating Resource States. The transition between the Offline and an Online Generating Resource State is a Start-Up. The transition between an Online and the Offline Generating Resource State is a Shut-Down.
State Transition Bid Component	A Bid Component for MSG Online Generating Resource State Transition data.



State Transition Cost	The Operating Cost incurred for a MSG State Transition between Online Generating Resource States.
State Transition Cost Basis	A Generating Resource option (applicable to all MSG configurations) that indicates the basis of the State Transition Cost determination: Registered Cost: The State Transition Cost is registered. Proxy Cost: The State Transition Cost is bid, but it cannot be higher than a multiple of an approximation of the State Transition Cost.
State Transition Definition	State Transition data composed of Initial and Final Online Generating Resource States, and Notification Time and Transition Cost.
State Transition Energy	The Energy consumption of a Generating Resource to complete a State Transition between Online Generating Resource States.
State Transition Energy Cost	The cost of State Transition Energy.
State Transition Fuel	The fuel consumption of a Generating Resource to complete a State Transition between Online Generating Resource States.
State Transition Fuel Cost	The cost of State Transition Fuel.
State Transition Path	A feasible sequence of State Transitions between Online Generating Resource States.
Storage Efficiency	The efficiency ($0 \leq SE \leq 1$) for storing Energy in a NGR operating in load mode.
Stranded Load Indicator	A registered Y/N Resource attribute that indicates a stranded load that can be served under an isolated ITC condition.
STUC Bid	A Generated Bid for each of the consecutive three Trading Hours following the Active Hour of a Real-Time Market. This Bid has a Bid Status of STUC Modified (SM) and it is not a Market Accepted Bid. SM Bids are used solely in STUC. There is no interaction between SM Bids and non-SM Bids.
STUC Bid Generation Time	The time after RTM Market Close Time when STUC Bids are generated.
Submitted Bid	A Bid submitted to a Market.
Submitted Trade	A Trade submitted to a Market.
Supply	The collective of Resources that supply Energy (i.e., Generating Resources and Imports).
Supporting Resource	A Generating Resource or a Non-Generator Resource with non-RA Capacity that supports an Export Resource PT Self-Schedule.
System Infrastructure and Bidding Rules	The Bid validation and processing system.
Tag Indicator	A Y/N attribute for ETSRs and DSRs specifying which one of the mirrored System Resources may submit a Base Schedule.
Temporarily Valid Bid	A Bid that has passed Bid Validation.
Time Precision	The finest time precision allowed in Bids.
TOR Chain	A combination of individual TORs used in sequence.



TOR Entitlement	The hourly use limit of a TOR.
TOR Link	A TOR that is not a TOR Chain.
TOR Pumping Self-Schedule	A Pumping Self-Schedule associated with a TOR.
TOR Pumping Self-Schedule Bid Component	A Bid Component for a TOR Pumping Self-Schedule.
TOR Pumping Self-Schedule Quantity	The Energy Bid Quantity for a TOR Pumping Self-Schedule.
TOR Reference	A unique identifier of a TOR.
TOR Self-Schedule	A Self-Schedule associated with a TOR.
TOR Self-Schedule Bid Component	A Bid Component for TOR Self-Schedules.
TOR Self-Schedule Quantity	The Energy Bid Quantity for a TOR Self-Schedule.
Total Generating Self-Schedule Quantity	The sum of the Generating Self-Schedule Quantities specified in all Generating Self-Schedule Bid Components for a given NGR and Trading Hour; it is zero if there is no Generating Self-Schedule Bid Component.
Total Load Self-Schedule Quantity	The negative sum of the Load Self-Schedule Quantities specified in all Load Self-Schedule Bid Components for a given NGR and Trading Hour; it is zero if there is no Load Self-Schedule Bid Component.
Total Pumping Self-Schedule Quantity	The sum of the Pumping Self-Schedule Quantities specified in all TOR, ETC, and PT Pumping Self-Schedule Bid Components for a given Resource and Trading Hour; it is zero if there is no Pumping Self-Schedule Bid Component.
Total Self-Schedule Quantity	The sum of the Self-Schedule Quantities specified in all Lay-Off, TOR, ETC, RMT, PT, LPT, and LSG Self-Schedule Bid Components for a given Resource and Trading Hour; it is zero if there is no Self-Schedule Bid Component.
Trade	A trade of Energy or Ancillary Service Obligation between two Scheduling Coordinators.
Trade Content	The determination that a Trade complies with the structural rules.
Trade Identification	The section of a Trade that contains information used to identify the Trade.
Trade Period	The time period for which a Trade applies.
Trade Submission Time	The time when a Trade is submitted to a Market.
Trade Type	The type of a Trade as it pertains to the traded Commodity.
Trade Validation	The determination that a Trade complies with the Market rules.
Traded Ancillary Service Obligation	The amount of an Ancillary Service Obligation Trade.
Traded Energy Quantity	The amount of an Energy Trade.
Traded Non-Spinning Reserve Obligation Quantity	The amount of a Non-Spinning Reserve Obligation Trade.
Traded Regulation Down Obligation Quantity	The amount of a Regulation Down Obligation Trade.



Traded Regulation Up Obligation Quantity	The amount of a Regulation Up Obligation Trade.
Traded Spinning Reserve Obligation Quantity	The amount of a Spinning Reserve Obligation Trade.
Trading Day	A set of consecutive Trading Hours spanning a calendar day in the Market Horizon of a Day-Ahead Market. All Trading Days have 24 Trading Hours except for the Short Trading Day and the Long Trading Day.
Trading Hour	A clock hour in the Market Horizon of a Day-Ahead Market.
Trading Hub	A standard aggregation of Locations defined by the ISO.
Trading Interval	A sub-hourly time period in the Market Horizon of a Real-Time Market.
Trading Period	A Trading Day or a Trading Hour.
Transition Ramp Time	Ramp time between MSG States (retrieved from MF as TRANS_TIME, used to validate the Notification Time submitted in a bid)
Transmission Owner	An organization that owns Network Branches.
Transmission Ownership Right	A physical transmission right of a Transmission Owner on a Network Branch that is within the ISO Control Area but not under the ISO control.
Upper Charge Limit	The highest stored energy that should be allowed in a LESR.
Upper Economic Limit	The last (highest) Energy Bid Quantity of the Energy Bid Curve specified in an Energy Bid Component.
Upper Operating Limit	The Maximum Capacity of a Resource, incorporating any applicable derates.
Upper Regulating Limit	The highest Operating Level of a Regulating Range.
Upward State Transition	A State Transition where the Maximum Capacity of the Final Online Generating Resource State is generally higher than the Maximum Capacity of the Initial Online Generating Resource State.
Use-Limited Resource	A Generating Resource whose Energy output is limited due to governmental orders.
User	An authorized SIBR user.
Valid	The Bid Status of a Bid or a Bid Component that has passed Bid Validation.
Valid Bid	A Bid that has passed Bid Processing after the Master File update for the relevant Trading Day.
Valid Bid Component	A Bid Component (of a Valid Bid) that has not failed any validation rules, other than cross-bid validation rules.
Variable Energy Resource	A Resource with variable non-controllable Energy production (wind, solar, run-of-the river hydro, etc.)
Virtual Demand Bid	A Bid from a Virtual Demand Resource.
Virtual Demand Resource	A Virtual Resource for Demand.



Virtual Demand Resource Location	A Location for a Virtual Demand Resource. SIBR rules support different sets for Virtual Supply/Demand Resource Locations, but these sets are identical in implementation.
Virtual Export Position Limit Factor	The portion of the Maximum Export Capacity that is allowed as the aggregate maximum Energy Bid Quantity for the Virtual Demand Resources from all SCs of a CB Entity at a Virtual Demand Resource Location that is an Inter-Tie Scheduling Point.
Virtual Export Resource	A Virtual Demand Resource at a Virtual Demand Resource Location that is an Inter-Tie Scheduling Point.
Virtual Export Resource Bid	A Bid for a Virtual Export Resource.
Virtual Generating Resource	A Virtual Supply Resource at a Virtual Supply Resource Location that is not an Inter-Tie Scheduling Point.
Virtual Generator Position Limit Factor	The portion of the Maximum Generating Capacity that is allowed as the aggregate maximum Energy Bid Quantity for the Virtual Supply Resources from all SCs of a CB Entity at a Virtual Supply Resource Location that is not an Inter-Tie Scheduling Point.
Virtual Import Position Limit Factor	The portion of the Maximum Import Capacity that is allowed as the aggregate maximum Energy Bid Quantity for the Virtual Supply Resources from all SCs of a CB Entity at a Virtual Supply Resource Location that is an Inter-Tie Scheduling Point.
Virtual Import Resource	A Virtual Supply Resource at a Virtual Supply Resource Location that is an Inter-Tie Scheduling Point.
Virtual Import Resource Bid	A Bid for a Virtual Import Resource.
Virtual Load Position Limit Factor	The portion of the Maximum Load Capacity that is allowed as the aggregate maximum Energy Bid Quantity for the Virtual Demand Resources from all SCs of a CB Entity at a Virtual Demand Resource Location that is not an Inter-Tie Scheduling Point.
Virtual Load Resource	A Virtual Demand Resource at a Virtual Demand Resource Location that is not an Inter-Tie Scheduling Point.
Virtual Resource	A non-physical non-registered Resource that may only participate in the DAM with Energy Bid Components.
Virtual Resource Bid	A Bid for a Virtual Resource.
Virtual Resource Bid Market Close Time	The latest time that a Virtual Resource Bid can be submitted in a DAM in advance of the relevant Active Day. It must not be later than and not earlier than one hour before the Market Close Time.
Virtual Resource Location	A Location for a Virtual Resource.
Virtual Resource Position Limit	The maximum administrative limit allowed for the aggregate Energy Bid Quantity in the Virtual Resource Bids from all SCs of a CB Entity at a Virtual Resource Location.
Virtual Supply Resource	A Virtual Resource for Supply.
Virtual Supply Resource Bid	A Bid from a Virtual Supply Resource.
Virtual Supply Resource Location	A Location for a Virtual Supply Resource. SIBR rules support different sets for Virtual Supply/Demand Resource Locations, but these sets are identical in implementation.

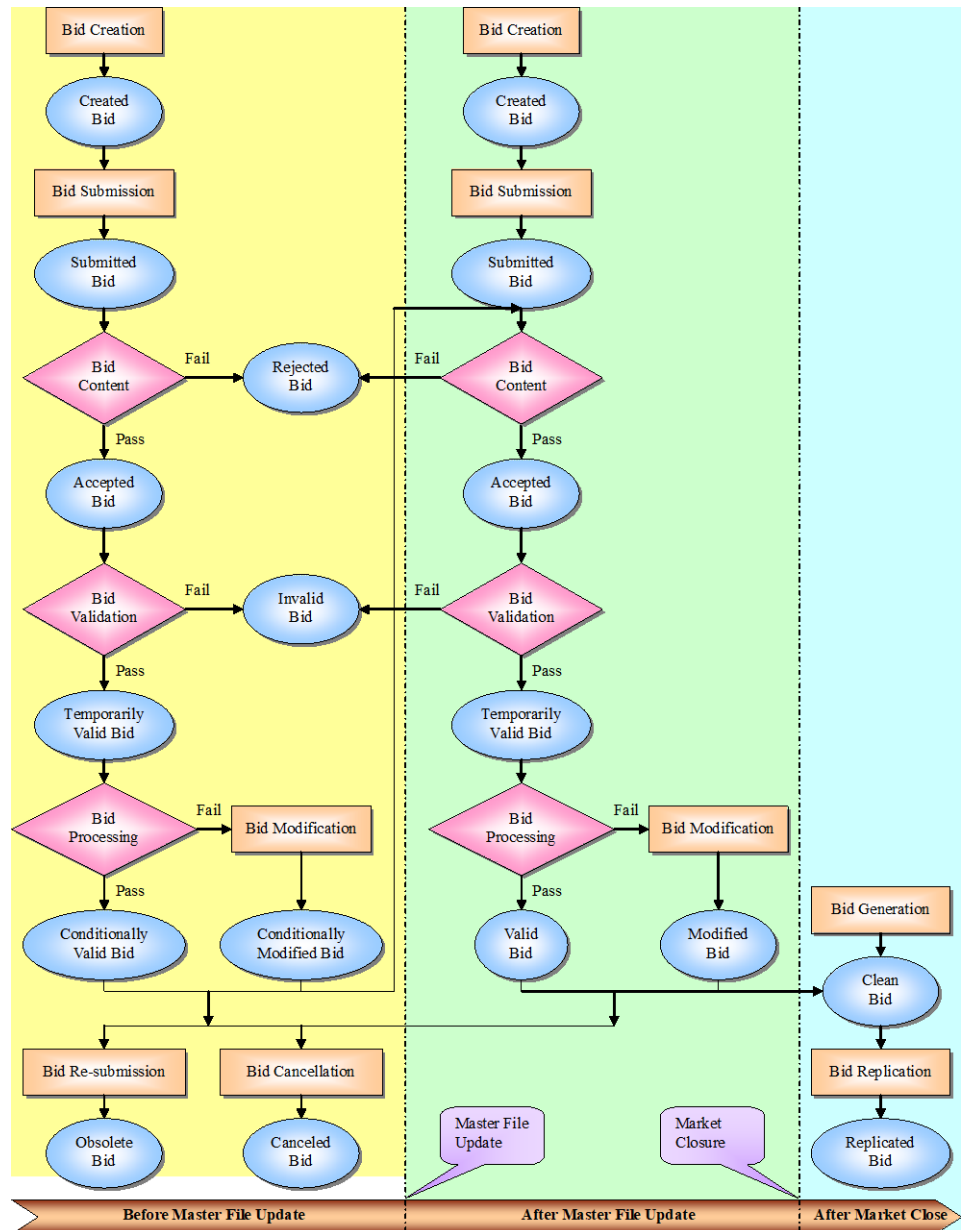


Western Electricity Coordinating Council	The authoritative body setting standards for the reliable operation of the interconnected electrical system between Western Canada, Mexico, and the Western United States.
Wheeling Bid Component	A Bid Component used for a Wheeling Transaction.
Wheeling Export Resource	An Export Resource used for Wheeling Transactions.
Wheeling Import Resource	An Import Resource used for Wheeling Transactions.
Wheeling Resource	A Wheeling Import Resource or a Wheeling Export Resource; Registered Inter-Tie Resources that are Wheeling Resources are registered with Energy Type of WHL; Inter-Tie Transactions that are Wheeling Resources are specified with Energy Type of WHL.
Wheeling Transaction	Balanced Energy exchange between an Import and an Export Resource.
Worst Operating Reserve Ramp Rate	The Operating Reserve Ramp Rate of a Generating Resource under worst operating conditions.
Worst Operational Ramp Rate Curve	The Operational Ramp Rate Curve of a Generating Resource under worst operating conditions.
Worst Regulating Ramp Rate	The Regulating Ramp Rate of a Generating Resource under worst operating conditions.



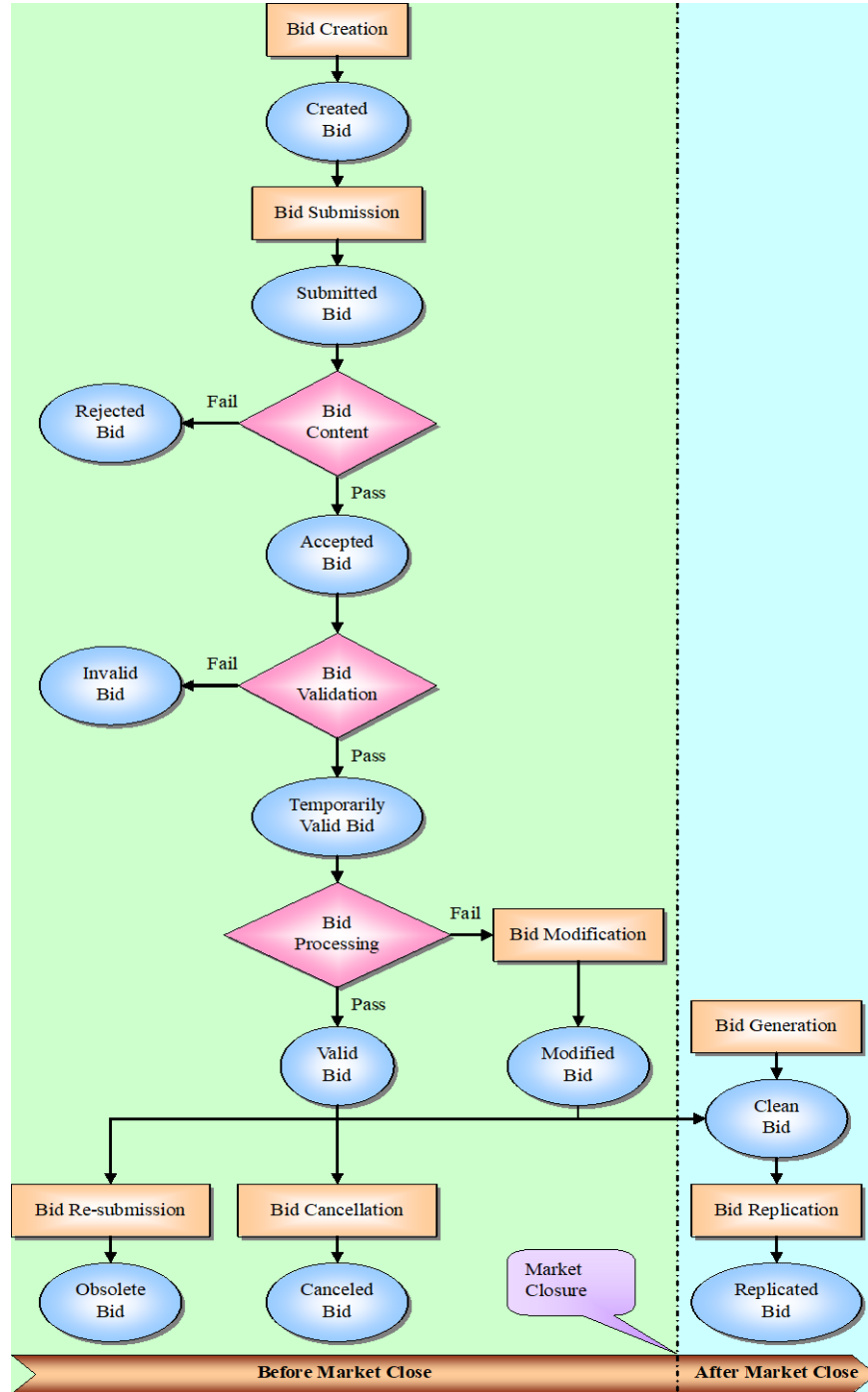
Appendix B Processing Flowcharts

Day Ahead Bid
processing flow:

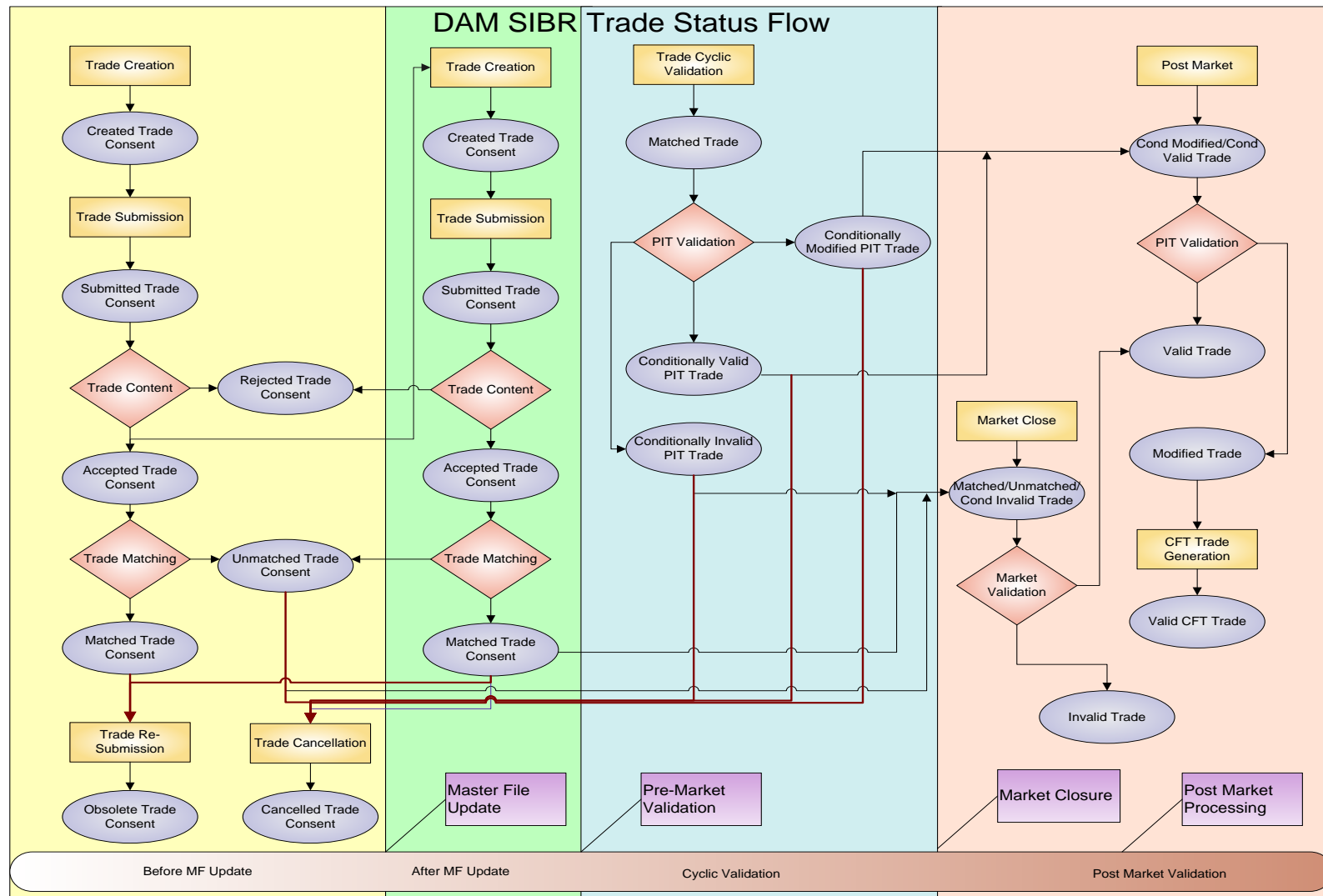


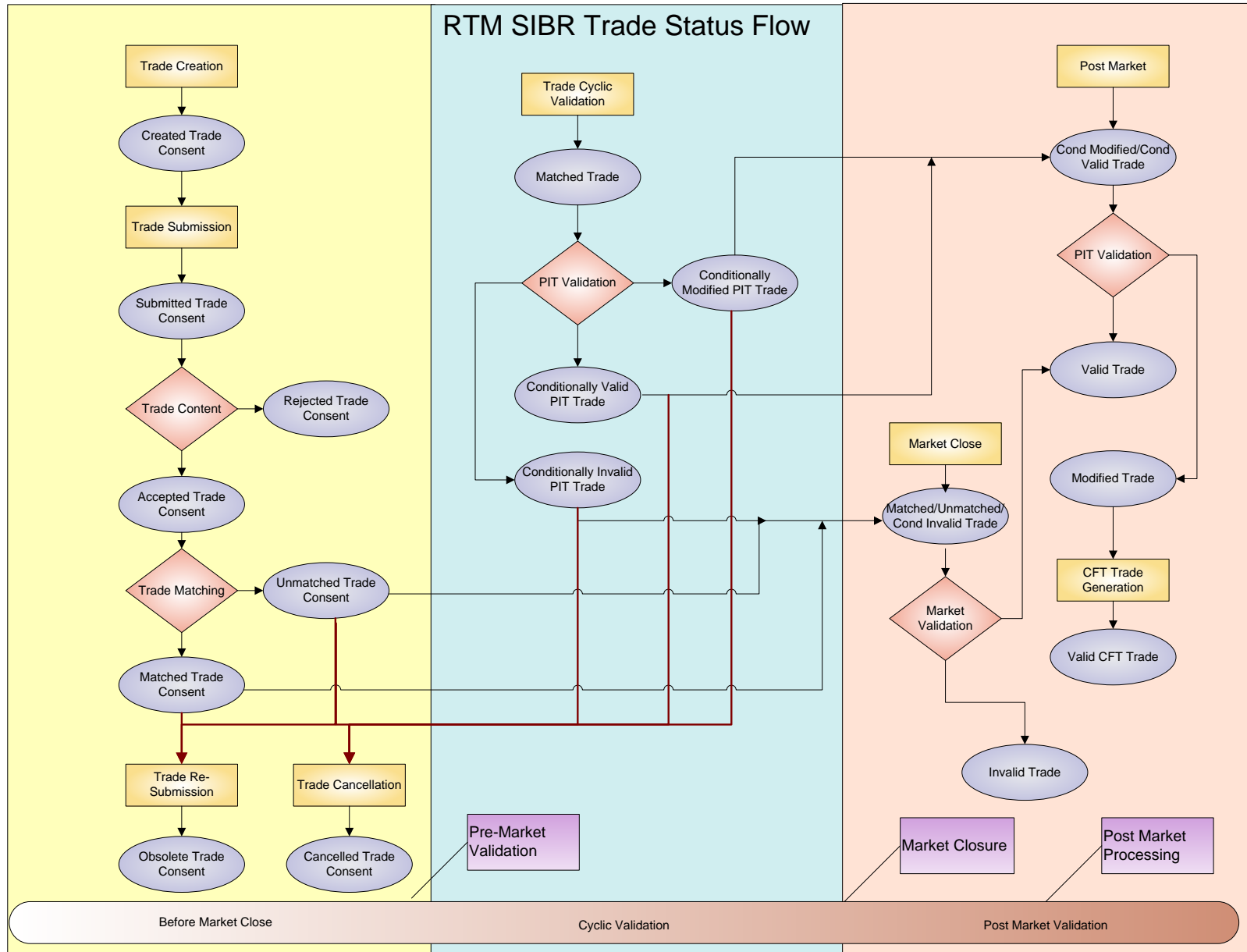


Real-Time Bid
processing flow:



Trade process flow:







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