Credit Management

Convergence Bidding EAL Components & Data Flow

December 2020

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Key Points of Discussion

• Convergence Bidding Overview
• Convergence Bidding EAL Components
• Convergence Bidding Data Flow

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Convergence Bidding Overview

- Convergence Bidding is a market feature that allows a registered convergence bidding entity to submit bids in the day-ahead market. Awards are paid or charged the day-ahead price and automatically liquidated at the relevant hour-ahead scheduling process or real-time price.

- All convergence bids submitted are subject to a credit check. If there is insufficient available credit at the time the bids are submitted, those bids are rejected.
Convergence Bidding EAL Components

• Virtual Bid – All bids submitted and approved by a credit check up to seven (7) days prior to the trade date for any given bid(s).

• Virtual Day-Ahead – Updated estimated liability values of awards after the close of the Day-Ahead Market.

• Virtual Real-Time – Updated estimated liability values of awards after the close of the Real-time Market.

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Convergence Bidding Data Flow

• Virtual Bid Submittal
  – Bid is submitted by a Market Participant
  – Once the bid is submitted, it passes through a SIBR validation
  – After validation, the bid amount is sent to credit to validate sufficient funds for bid (credit check process)
    • If there are sufficient funds to cover the bids, bids are approved and liabilities are updated accordingly
    • If there are insufficient funds to cover the bids, bids are rejected and there are no changes to the liabilities.

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When a Bid is Rejected

• If a bid or batch of bids exceeds the available credit limit, the bid amount will be disapproved based on a last in/first out basis.

• The SIBR system informs the Market Participant via a pop-up window that there is insufficient available credit to cover their bids.

• This pop-up window will display the incremental amount needed to cover the bid submission.

• Market Participants may post additional collateral or submit smaller bids based on their available credit.

• For questions regarding posting additional collateral, please contact CAISOCredit@caiso.com.

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Rejected Bid Example

In the example below, SC5 would be rejected as it was the last bid submitted. All previous bids (SC1-SC4) remain approved.

<table>
<thead>
<tr>
<th>Bid</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC1</td>
<td>06:00</td>
</tr>
<tr>
<td>SC2</td>
<td>08:43</td>
</tr>
<tr>
<td>SC3</td>
<td>07:45</td>
</tr>
<tr>
<td>SC4</td>
<td>05:06</td>
</tr>
<tr>
<td>SC5</td>
<td>09:35</td>
</tr>
</tbody>
</table>

Time Stamp of Bid Submittal

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When a Bid is Canceled

- A bid can only be canceled by a Market Participant, and not by the California ISO.
- Canceled bids are not immediately reflected in the Market Participant’s liabilities and the California ISO does not suggest canceling bids within an hour of the close of the Day-Ahead Market (10am Pacific Time).
- If a Market Participant a previously approved bid(s), the liabilities are updated as the system refreshes.
  - It may take up to an hour to release the credit that was being held for the approved bid(s) prior to cancelation.
The Life Cycle of a Convergence Bid

- **Invoice**: Initial Bid Placed = available credit decreased due to bid

- **Virtual Bid**: Invoice paid, market cleared and Invoice liabilities are zeroed out

- **Published Settlements Statements**: Liabilities published on Settlements Statements as charge codes

- **Virtual Day-Ahead**: Price Cleared in Day-Ahead = liabilities updated to reflect Day-Ahead prices

- **Virtual Real-Time**: Prices cleared in Real-Time = Market Participant liabilities increased or decreased due to the price clearing above or below the Day-Ahead price
Example of the Convergence Bidding Life Cycle

**Virtual Bid**
- SC places a bid on 200MW at $1/MW
- Liability = $200
- Total liabilities increased by $200

**Virtual Day-Ahead**
- SC is awarded 100MW in Day-Ahead
- Liability = $100
- Total liabilities decreased by $100

**Virtual Real-Time**
- Real-Time Price is $2, so the MW purchased for $100 is now valued at $200
- Liability = ($100)
- Total liabilities decreased by $200

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