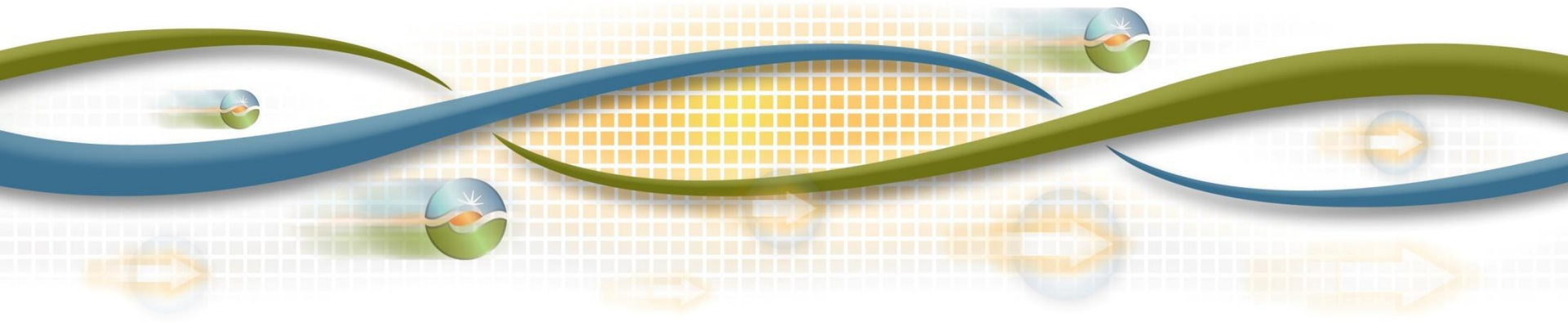


Convergence bidding

Defining convergence (virtual) bidding



Defining convergence (virtual) bidding module objectives

By the end of this section, you will be able to:

- Describe the purpose of virtual bidding
- Describe what a virtual demand bid is and how it differs from a virtual supply bid
- List the day-ahead market process that uses virtual bids

Defining convergence (virtual) bids

- Financial positions taken in the day-ahead market and liquidated in the real-time market
- Virtual demand
 - Bid to buy at day-ahead price and offer to sell at real-time price
 - Looks like price sensitive demand
- Virtual supply
 - Bid to sell at day-ahead price and buy at real-time price
 - Looks like a dispatchable supply resource

Defining convergence (virtual) bids

- Supported in day-ahead market only
- Bid to buy (virtual demand) is charged the day-ahead LMP and is considered a “long” position
- Bid to sell (virtual supply) is paid the day-ahead LMP and is considered a “short” position
- Virtual supply offers and virtual demand bids may be submitted at any eligible pricing node or intertie in the ISO system
- Does not require any physical generation or load

How convergence bids affect the physical market

- Virtual bids are financial instruments in the day-ahead market
- Virtual bids compete with physical bids and clear the day-ahead market based on economics
- Virtual bids can set the price
- Virtual bids can impact how physical supply is committed in the day-ahead market
- Virtual awards paid or charged the day-ahead LMP and are liquidated at the real-time LMP

How convergence bids affect the physical market

- No physical energy is delivered or consumed with virtual bids
- Virtual bids are not backed by physical assets
- Virtual bids have no link between physical supply or physical demand bids submitted by the same SC

How convergence bids affect the physical market

- Virtual bids are not physical bids
- Virtual bids are not used in the day-ahead market processes that use physical bids for grid reliability
 - Residual unit commitment (RUC)
- Virtual bids are used in the integrated forward market process
- Virtual bids impact how physical supply is committed in both the integrated forward market and in the residual unit commitment process
- Virtual bids are considered during the market power mitigation (MPM) process but are not mitigated

Purpose and benefits of convergence bidding at the nodal level

Convergence bidding provides convergence bidding entities (CBEs) a financial mechanism to:

- Hedge against unit trip in real time
- Hedge against exposure to real-time pricing for load
- Earn revenues or risk losses between the day-ahead and real-time prices

Convergence bidding operates successfully in all the other US independent system operator markets

Purpose and benefits of convergence bidding at the nodal level

Convergence bidding at the nodal level helps:

- Increase market liquidity
- Lower costs due to more efficient day-ahead commitment
- Minimize the differences between day-ahead and real-time prices
- Improve grid operations

Why implement convergence bidding?

- FERC requirement
- Operate consistently with other nodal markets
- Proven to contribute to market liquidity which helps discipline the market power of physical suppliers