



# FCM Descending Clock Auction Forum

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*Auction Format Q&A and Issues Discussion*

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# Purpose

- Address and discuss the questions posed at the Descending Clock Auction (DCA) forum held in December 2015
- These questions covered a range of topics, including:
  - Bidding and pricing implications of auction formats
  - How the ISO administers the FCA
  - Mitigation functions (prior to the FCA)
  - Qualification and interconnection processes
  - And so on

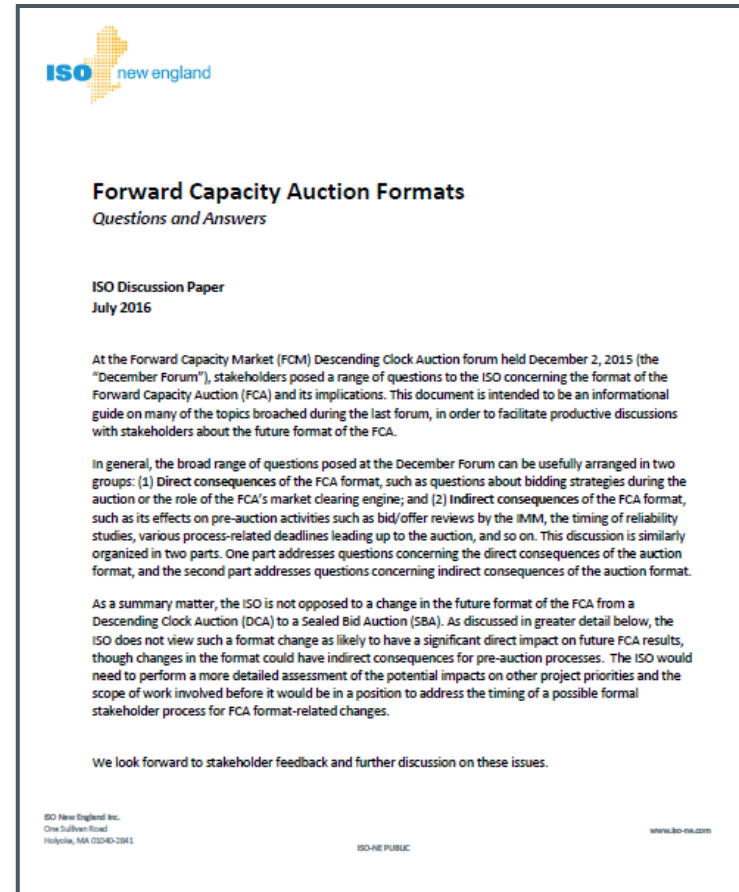


# ISO Discussion Paper on FCA Formats

- Informational guide to the pros, cons, and key considerations of alternative capacity auction formats
- Detailed discussion of stakeholders' questions raised at December forum

ISO Discussion Paper is available at:

<http://www.iso-ne.com/static-assets/documents/2016/07/20160711-dca-v-sealed-bid.pdf>



# Background: Three Auction Types and Terms

- Sealed Bid Auction (SBA)
  - “Final and best” bids/offers submitted in advance privately (“sealed”)
  - No information revealed publicly during the auction clearing
- “Pure” Descending Clock Auction (DCA) – not used in the FCA
  - No round structure; everyone observes when any bidder withdraws
  - Greater market power concerns than the ISO’s “hybrid DCA” format
- “Hybrid” Descending Clock Auction – Current FCA format
  - In simple terms, a sealed bid auction within rounds
  - Intended to capture some benefits of both a SBA and a ‘pure DCA’
  - ISO’s prior presentation explains the mechanics of the hybrid DCA:  
[http://www.iso-ne.com/static-assets/documents/2015/11/20151202\\_fca\\_clearing.pdf](http://www.iso-ne.com/static-assets/documents/2015/11/20151202_fca_clearing.pdf)



# Summary Observations on FCA Format

- There is no clear “single best” auction format; choice involves balancing many different design considerations
  - ISO Discussion Paper explains these considerations in detail
- Overall, we find no compelling reason to expect higher or lower average FCA prices under a SBA than the hybrid DCA
  - See ISO Discussion Paper, pages 5-8.
- The ISO is not opposed to considering a switch to a SBA format for the FCA, based on its review to date
  - Stakeholders and the ISO would need to balance this possible change among other projects as part of the fall NEPOOL Priorities discussions



# STAKEHOLDER QUESTIONS AND RESPONSES

*Direct Consequences of the FCA Format*



# Two Organizing Categories of FCA Questions

## I. Direct Consequences of the FCA Format

- *Such as:* bidding behavior and incentives; the role of the Market Clearing Engine; bid submission timing and formats; and so on

## II. Indirect Consequences of the FCA format

- *Such as:* Pre-auction bid/offer mitigation (“activity rules”), timing of reliability studies, and other pre-auction processes
- This presentation, and the ISO’s Discussion paper, are similarly organized in two parts
- We address questions concerning the auction format’s Direct Consequences presently



# Direct Consequences of Auction Format

- We'll address 11 specific questions, concerning how auction formats differ (or not) with respect to these issues:
  1. Promoting competition
  2. Bidding incentives
  3. Attracting entry
  4. Infra-marginal supply
  5. Activity rules
  6. FCA clearing logic
  7. Uniform bid timing
  8. Excess supply information
  9. Pure DCAs
  10. Hybrid DCA round sizes
  11. Single-round hybrid DCA

*Brackets following each question are ISO Discussion Paper page references*





# 1. Promoting Competition

***When facing conditions of limited competition, which format works better?*** [p. 5, 9]

- Generally, sealed bid auctions fare better than pure DCAs in precluding market power in auctions
  - Relevant if number of competitors (or total excess supply) is low
- The FCA's hybrid DCA format is far less susceptible to this form of market power than a pure DCA, for two reasons:
  - Round structure
  - Extensive mitigation of existing and new resources' bids/offers
- Overall: Difficult to say whether using a SBA would make a material difference with respect to exercise of market power



## 2. Bidding Incentives and Costs

***Does one auction design encourage bidders to focus more on their individual cost recovery needs vs. trying to discover the actions/behavior of other bidders? [p. 9]***

- In brief, no.
- The FCA's current pricing rules are a “first price” system:  
The clearing price is set by a winning bid (or demand)
- Under such pricing rules, all three formats (SBA, pure DCA, or hybrid DCA) create incentives for bidders to focus on the expected bid prices of the firms with which they compete



### 3. Attracting Entry

***Does one format better attract new entry?*** [p. 9-10]

- Unlikely. The extent to which the auction format plays a role in attracting new entry into the market is limited
- The principal signal that will tend to attract new entry is (the expectation of) a high price
- As noted earlier, there's no compelling basis to expect a higher or lower average FCA prices under a SBA, all things considered



## 4. Infra-Marginal Supply Information

***Would either auction format provide more information about lower cost resources; and would that information provide value to the marketplace (after the auction)? [p. 10]***

- A SBA would provide more information about lower cost resources to the *auctioneer* (and the ISO)
  - ISO would observe the supply curve at price levels below where the hybrid DCA stops (the “end of round” price).
- No, it would not be prudent to post such “infra-marginal” bid-price data publicly after the auction
  - See p. 7, *Clearing Price Transparency and Bid Price Confidentiality*



## 5. Activity Rules and Bid Timing

***Is the [current] DCA beneficial when there are limited suppliers, and offers are submitted nearly a year before the auction? [p.10]***

- A key question. Note it *presumes* limited supply.
- In *those* conditions: The potential benefits of a DCA (whether pure or “hybrid”) are muted, and outcomes are unlikely to differ materially from conducting the FCA using a SBA format
- Still: In conditions *without* tightly limited supply (*e.g.*, multiple possible new entrants), the hybrid DCA might promote more aggressive bidding than would occur with a SBA
  - See Discussion paper, p. 6-7.



## 6. FCA Clearing Logic: New v. Existing

***Does one mechanism provide more comparable treatment of resources in the clearing of the auction?*** [p. 11]

- With regard to the auction *clearing* process: No.
- The FCA's market-clearing stage calculates the capacity awards (and prices), treating new and existing resources similarly
- We do not anticipate that would be any different under the current hybrid DCA format or a SBA format
- The FCA *qualification* process is different for new and existing resources; but that difference is not due to the auction format



## 7. Uniform Bid Submission Timing

***Would a more competitive auction allow all resources to enter bids at the same time, and be held to the submitted prices? [p.11]***

- Complex issue, no sharp answer. There are competing effects.
- When resources exit (*e.g.*, retire), there are benefits to conveying that information early to spur entry participation
- Among non-retiring resources, there could be inefficiencies when some are allowed to finalize bids later than others
  - This *stale information* problem increases risk for existing resources
  - See Discussion paper, p. 11-12
- And, in *some* conditions, the hybrid DCA can promote more aggressive bidding, esp. among new entrants (see slide 13)



## 8. Excess Supply Information and Incentives

*Are bidders' incentives to provide true/best offers different with and without post-round information?* [p. 12]

- Yes, bidders' pricing incentives may be different
- The post-round information might be used in two ways, in different situations:
  - To facilitate the exercise of unilateral market power during the auction
  - To help reduce (gross) bidder mis-pricing errors during the auction, promoting more efficient price formation
- Because these are competing effects, and both are attenuated by other FCA features, there is no compelling basis for whether these considerations favor a SBA or hybrid DCA format





## 9. Round Information – Pure DCAs

***The price-quantity pairs of bids/offers within a round are not revealed to other suppliers [during the round]. If information sharing is a benefit of an open auction, why have that structure? [p. 12]***

- This is asking, essentially: Why not run a pure DCA?
- Pure DCAs are far more susceptible to market power
- The current hybrid DCA strives to strike a balanced approach
- Information about excess supply is released after each round – but nothing is released *during* each round, to reduce a supplier's ability to 'know' when its bid would set price



## 10. Auction Round Decisions and Info

***Can the DCA format be changed to share more information during the auction? Participants can't see the information used by the auctioneer to make decisions about rounds (such as the bid/cover ratio or size of rounds). [p. 12-13]***

- Participants can calculate a (rough) indication of the bid-to-cover ratio, using excess supply information after each round
- The auctioneer does not share advance information about anticipated round sizes, or exact zonal bid/cover ratios, etc.
- Sharing more info is unwise. The auctioneer tends to select round sizes (in part) to help prevent participants being able to infer situations favorable to the exercise of market power



# 11. Single-Round Hybrid DCA

***What are the implications of using a single-round DCA that includes the cap down to the floor (all else being equal)? [p. 13]***

- Mechanically, this is much like a SBA.
- It may not produce the same outcomes as a SBA, however:
  - It does not address ‘early’ and ‘late’ submission (see Q7, slide 15).
  - Using a single-round DCA *only* when supply is tight could send unintended signals to bidders about the state of competition
  - May not address other stakeholder concerns (Indirect Consequences)
- If the region switches to an SBA format, it would be advisable to revise the Tariff accordingly.



# Questions



# STAKEHOLDER QUESTIONS AND ANSWERS:

*Indirect Consequences of Auction Formats*



# Indirect Consequences of Auction Format

- We'll address 10 questions in three topic areas, on how auction formats differ (or not) with respect to these issues:

## ***Planning-related functions***

1. Overlapping impacts
2. Queue and clearing
3. Reliability reviews
4. New resources
5. Zonal configurations

## ***Mitigation-related functions***

6. Mitigation, generally
7. Pivotal supplier test
8. Mitigation as *de facto* SBA
9. New resource offer floors

## ***Planning and mitigation issues***

10. Bid timing practicalities and flexibility



# 1. Overlapping Impact Tests

***Would or could the timing and implementation of overlapping impact tests be different with one format versus the other? [p. 14]***

- Interconnection Analyses, including the Overlapping Impact Test, by design is part of Qualification
  - Determines if the new resource is incrementally useful (deliverable to the Load Zone in which it is interconnection)
  - Requires approximately three (3) months of analysis to determine the necessary transmission upgrades
    - If the necessary transmission upgrades cannot be built by the start of the Capacity Commitment Period, the resource is not qualified to participate in the FCA
- The FCA format has no direct bearing on when the overlapping impact analyses is performed
- Under the simplest changes necessary to switch to a SBA format, the overlapping impact tests would continue to be conducted in advance of the FCA

## 2. Overlapping Impact based on Clearing

***Would one of the auction formats better facilitate a design where costs could determine overlapping impacts/queue positions?*** [p. 14]

- The ISO interpreted this question to request that the Interconnection Analyses, including the Overlapping Impact Test, be performed after the FCA is conducted
  - Not part of pre-auction qualification process
- The ISO has not assessed the feasibility or merits of this alternative timing
- May result in resources clearing the FCA that cannot be built by the start of the Capacity Commitment Period and/or not deliverable to the Load Zone in which they are interconnecting
- The FCA format has no direct bearing on when the overlapping impact analyses is performed





### 3. Effect of FCA Format on Reliability Reviews

***Does one auction format better facilitate reliability reviews?  
Would that be more cost effective for the ISO? [p. 14-15]***

- Reliability Reviews are a mechanism for the ISO to retain a market resource to ensure the New England Transmission System meets NERC, NPCC and ISO Planning Criteria
  - System Planning engineers perform an initial reviews in the preceding months before the FCA
- If a sealed-bid auction format was utilized, it may be possible for reliability reviews to be performed “simultaneously” with the auction clearing processes
  - Similar to how Annual Reconfiguration Auctions are cleared, over several iterations
  - May result in weeks to months to determine auction results



### 3. Effect of FCA Format on Reliability Reviews (continued)

***Does one auction format better facilitate reliability reviews?  
Would that be more cost effective for the ISO? [p. 14-15]***

- This approach may be perceived as more cost effective because [potentially] fewer delist bids and retirement requests would be submitted
  - There is no obvious reason to expect that outcome
  - Could result in additional effort to perform multiple iterations to determine the final auction results



## 4. Auction Format and its Relationship to New Resources and Reliability Reviews

*Which auction format better facilitates the inclusion and consideration of new resources in reliability reviews?* [p. 15]

- Knowing which combination of new and existing resources would clear the auction may enable the ISO to perform reliability reviews in a manner that accounts for the contribution of cleared new resources
  - May resolve any (sub-zonal) reliability issues that were created by the resource seeking to delist/retire
- This could be beneficial in promoting overall market efficiency in the FCA by reducing the likelihood that an uneconomic resource would need to be retained for reliability
  - However, to date, there has not been a situation where a new resource has been proposed and satisfies the reliability need created by a resource retiring in the same FCA



# 5. Auction Format and the Modeling of Complex Capacity Zone Configurations

***Does one format better model complex zonal configurations in the FCM?*** [p. 15-16]

- The Capacity Zone evaluation and formation process is performed well in advance of the FCA
  - Designed to provide market signals based on previous auction results (i.e. retirements)
  - Based on a certified transmission topology with *known* interface limits
  - Models Capacity Zones that are radial to the Rest-of-Pool zone
- The Capacity Zone formation process is not dependent on a DCA format
  - Therefore, the zone formation process could remain unchanged if the format changed to a sealed bid auction
  - The Market Clearing Engine would be enhanced to address additional zone complexities but this has not been fully assessed



## 6. Mitigation Measures (Generally)

***Whether the ISO's mitigation measures would be different under one format or the other? (and if so, how?) [p. 16]***

- The IMM will continue to review bids/offers and to mitigate the exercise of market power with either auction format
- As in auctions generally, there can be significant financial incentives for pivotal suppliers to exercise market power
- The need to review the bids of pivotal suppliers for seller-side market power, and to review the offers of new resources for buyer-side market power, is not materially diminished by a change from the hybrid DCA to a SBA format



## 7. Pivotal supplier tests for FCA

***Whether various tests done by the IMM, such as the pivotal supplier test, could or should be performed differently (such as including new resource offers) with a sealed-bid format instead of the DCA? [p. 16]***

- No. IMM's reviews do not depend on the format, generally
- A new resource can withdraw at any price (above its floor) without IMM review, and there is no assurance how well a new resource will discipline competition in the FCA
- Including a supplier's new resource(s) in the pivotal supplier test increases the likelihood that another truly pivotal supplier may be incorrectly identified as non-pivotal



## 8. Mitigation as *de facto* SBA?

*If it is assumed that mitigated price is the exit price, does that effectively collapse the DCA into a sealed bid format?* [p. 17]

- For an existing resource with a static delist bid: Their price is 'lock-in' before the FCA, as occurs with a SBA format
- But for the FCA generally: No, not exactly. Two reasons:
  - During the FCA, new resources can adjust pricing decisions, exiting above their Offer Price Floor.
  - If FCA proceeds below the Delist Bid Threshold, existing resources still in the auction can adjust pricing decisions as rounds proceed.
- These features do not technically match a SBA format, though in practice both formats may produce the same outcomes



## 9. New Resource Offer Reviews

***Which format better facilitates the inclusion and consideration of new resources in mitigation reviews? [p.17]***

- We interpret this in relation to Offer Floor Price reviews
- Reviews of new resource offer prices address buyer-side market power.
- These reviews are neither facilitated nor hampered by a change in the FCA format





# 10. Timing of Bids and Offers

***Whether the timing of submission of certain (e.g. static) existing resources' bids and new resources' offers could be aligned?*** [p.17]

***Whether one of the auction formats better facilitate changes to, or more flexibility in, the current timelines? Ex: Can sealed bid allow all ISO functions to be concluded later?*** [p. 17-18]

- The timing of submissions is challenging. It is a balance of both the economic benefits of timing rules and the practical challenges of reviewing bids for both mitigation purposes and qualification processes
  - Flexibility in timing of submissions is narrow due to IMM staffing considerations and sequencing of other FCA deadlines
  - There is agreement that there are economic efficiency benefits to having bid submission deadlines set as late as possible



## 10. Timing of Bids and Offers (continued)

***Whether the timing of submission of certain (e.g. static) existing resources' bids and new resources' offers could be aligned?*** [p.17]

***Whether one of the auction formats better facilitate changes to, or more flexibility in, the current timelines? Ex: Can sealed bid allow all ISO functions to be concluded later?*** [p. 17-18]

- As part of the qualification process, in advance of the FCA, the Internal Market Monitor (IMM) reviews bids from existing resources and offers from new resources to mitigate the exercise of market power
- In general, the reviews conducted by the IMM or System Planning do not depend on the auction format



# STAKEHOLDER QUESTIONS AND ANSWERS:

*Miscellaneous Remaining Questions about Auction Formats*

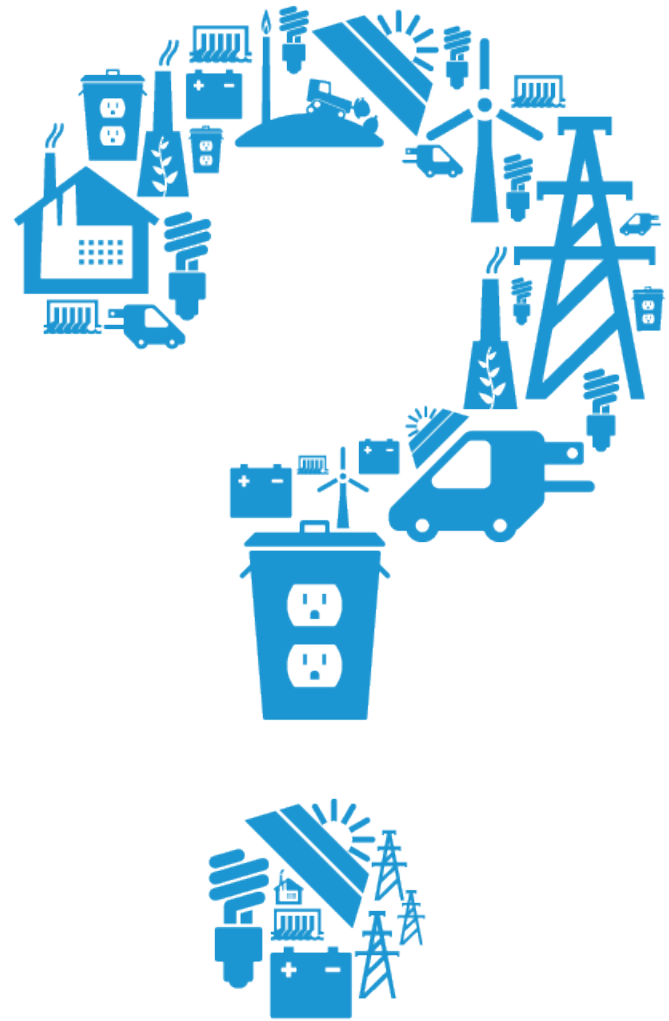


# Miscellaneous Questions and Issues [p. 18-19]

- ***Is one mechanism more cost effective for the ISO to implement?***
  - Not materially. Most FCA administrative costs would not be impacted
- ***With a format change, would or could the FCA compensation be pay-as-bid?***
  - No. Terrible idea. See Discussion paper, p. 18-19, for explanations.
- ***Now that we have a Demand Curve, do we still need a DCA?***
  - These are largely unrelated elements. Neither necessitates or implicates the other.
- ***Have other capacity markets moved from an open auction format to closed?***
  - Outside the US, market movements in both directions have occurred



# Questions



# Next Steps

- The ISO is assessing the scope of work to switch from a Descending Clock format to a Sealed Bid format in the FCA
- The ISO is not opposed to considering a switch to a SBA format for the FCA, based on its review of the issues to date
  - Stakeholders and the ISO would need to balance this possible change among other projects as part of the fall NEPOOL Priorities discussions

