ISO-NE’s CASPR and State RPSs

Hosted by
Warren Leon, Executive Director, CESA

May 23, 2018
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• With funding from the Energy Foundation and the US Department of Energy, CESA facilitates the Collaborative.
• Includes state RPS administrators, federal agency representatives, and other stakeholders.
• Advances dialogue and learning about RPS programs by examining the challenges and potential solutions for successful implementation of state RPS programs, including identification of best practices.
• To sign up for the Collaborative listserv to get the monthly newsletter and announcements of upcoming events, see: www.cesa.org/projects/renewable-portfolio-standards
ISO-NE’s CASPR and State RPSs

Webinar Speakers

- **Paul Peterson**, Principal Associate, Synapse Energy Economics
- **Warren Leon**, Executive Director, Clean Energy States Alliance (moderator)
CASPR and Renewables

Clean Energy States Alliance webinar

May 23, 2018

Paul Peterson
Synapse Energy Economics

• Founded in 1996 by CEO Bruce Biewald
• Leader for public interest and government clients in providing rigorous analysis of the electric power sector
• Staff of 30 includes experts in energy and environmental economics and environmental compliance
• My experience is primarily with wholesale markets and system planning
Today’s agenda

New England Forward Capacity Market
  • Initial Design
  • Changes
  • Results

CASPR
  • Design elements
  • Basic operation
  • Issues and concerns

Discussion
Forward Capacity Market

• Forward Capacity Market (FCM)
  • Three years forward for a one year commitment
  • New resources offer at a price
  • Existing resources offer at zero (or a de-list amount)
  • Demand curve determines range of quantities and prices
  • New resource offer, or de-list price, sets clearing price for all
  • Zonal variations can occur
  • Cleared resources have a capacity supply obligation (MW)
  • Resources are paid monthly ($/Kw)
Forward Capacity Auctions

• Forward Capacity Auction (FCA)
  • Retirement offers
  • Show of Interest
  • Qualification package
  • Financial assurance
  • Qualified capacity amount from ISO
  • Offer window
  • Descending clock auction starts at high value ($/kw-month)
  • Price drops until supply and demand meet
  • CSO award triggers additional financial assurance
Renewable Technology Resource Exemption

• Implemented with demand curve changes for FCA #7
  • Renewable Technology Resource (RTR) defined as resources eligible for state RPS program
  • RTR eligible to offer into FCA without meeting minimum offer price requirements
  • Capped at 200 MW of each FCA
  • Roll-over (up to 600 MW) allowed over multiple FCAs
  • Through FCA #12, four auctions, approximately 136 MW of RTRs cleared

• CASPR eliminates RTR exemption
  • Many stakeholders wanted to retain RTR exemption as a CASPR backstop
  • ISO proposes a phase out over three auctions (through FCA #15), or until roll-over is exhausted (approximately 500 MW)
  • ISO believes RTR is no longer needed and conflicts with CASPR
Pay for Performance

• Implemented with FCA #9
  
  • All resources with a CSO are subject to performance penalties and rewards
  
  • All rewards and penalties are balanced between market resources
  
  • Penalty rate increases over time
    
    • FCA #9-11: $2,000 MWh
    • FCA #12-14: $3,500 MWh
    • FCA #15: $5,455 MWh

  • Intended to provide incentive for dual fuel units; not firm gas supply contracts. Non-CSO resources can be rewarded

• Scarcity pricing intervals
  
  • Triggered whenever ten-minute operating reserves are used for 5 minutes or more (scarcity event)
  
  • No excuses for failure to perform (maintenance, lack of fuel, calamity)
  
  • No exceptions due to timing (24 hours, 365 days)
  
  • Penalty pro-rated based on load level compared to full CSO loads
## Recent FCM results

<table>
<thead>
<tr>
<th>FCA</th>
<th>Delivery Begins</th>
<th>Clearing Price ($/kW-month)</th>
<th>Commentary</th>
</tr>
</thead>
</table>
| FCA-9 | June 2018       | $9.551                      | - Price set by new gen. 500 MW excess  
- SEMA/RI clears at $17.728 ($11.08 for Existing). Insufficient capacity.  
- Retired: Brayton Point  
- RTR: 16 MW |
| FCA-10| June 2019       | $7.03                       | - Price set by new gen. 1,400 MW excess.  
- Retired: Pilgrim  
- RTR: 56 MW |
| FCA-11|                 | $5.297                      | - Price set by resource exit. 1,700 MW excess  
- >500 MW of New EE cleared (backlog).  
- No new gen (only uprates)  
- RTR: 31 MW |
| FCA-12|                 | $4.631                      | - Price set by resource exit. 1,100 MW excess.  
- 358 MW of new EE  
- No new gen (only uprates)  
- RTR: 33 MW |
CASPR

• Competitive Auctions with Subsidized Sponsored Policy Resources

• Sponsored Resources definition
  • Resources defined as of January 1, 2018
  • Renewable, clean, or alternative technology resources
  • Expands RTR definition to include large hydro

• Dual goals of integrating markets and public policy
  • Maintain competitive markets with a Minimum Offer Price Rule (MOPR)
  • Avoid paying for duplicate capacity resources.
  • Other options rejected:
    • Carbon adder
    • Two-tier capacity auction

• FERC Order March 2018 [Docket No. ER18-619]
  • Approves ISO CASPR decision
  • Comments and dissent from all Commissioners
• FCA runs first and assigns CSOs to resources
  • Retiring resources with a CSO are required to enter Substitution Auction
  • New resources cannot enter Substitution Auction
  • Existing resources have option to enter Substitution Auction

• Substitution auction runs directly after FCA
  • Demand bids can be at or below CSO value
  • Demand bids can be negative
  • Supply bids are not reviewed for price

• Starts with FCA-13 (February 2019) and all subsequent auctions until it is modified!
Hypothetical FCA

![Graph showing the clearing price for RE with contract and a point labeled Mystic. The x-axis represents capacity (GW) and the y-axis represents clearing price ($/KW-month).]
Hypothetical CASPR Result

- FCA Clears at $5.00
  - Mystic’s retirement bid clears, gets a Capacity Supply Obligation (CSO) at $5
  - New Renewable Energy (RE) offer does not clear. No CSO.

- Substitution Auction clears at $2
  - Our one RE resource submits an offer in Substitution Auction of $2
  - RE and Mystic swap CSO
  - Mystic is retired, with a 1-year “severance payment” of $3/kW-month, or $36,000/MW
    - If all 2,000 MW, this amounts to paying Exelon ~$72m to retire
  - RE clears at $2 for this FCA, gets a CSO
  - RE enters all subsequent auctions as an Existing resource. Presumably will clear and get the FCA price in all future auctions (until they de-list or retire).

- Many details about pro-rating resources and other design elements
### First Substitution Auction FCA #13

#### Substitution Auction Demand Bids*

<table>
<thead>
<tr>
<th>Capacity Zone</th>
<th>Aggregate MWs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeast New England</td>
<td>2062.382</td>
</tr>
<tr>
<td>Northern New England</td>
<td>0.041</td>
</tr>
<tr>
<td>Rest-of-Pool</td>
<td>112.276</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>2174.699</strong></td>
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</tbody>
</table>

#### Substitution Auction Supply Offers

<table>
<thead>
<tr>
<th>Capacity Zone</th>
<th>Aggregate MWs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeast New England</td>
<td>1991.492</td>
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<tr>
<td>Northern New England</td>
<td>557.660</td>
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<tr>
<td>Rest-of-Pool</td>
<td>354.694</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>2903.846</strong></td>
</tr>
</tbody>
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Questions?

Paul Peterson

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Thank you for attending our webinar

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