



Capacity As A Commodity Market Design Concept

PRESENTED TO:
NEPOOL

PREPARED BY:
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Gabel Associates Firm Overview & Presenter Biography

- Energy, environmental, and public utility consultancy headquartered in Highland Park, New Jersey with 25 years of experience providing quality energy consulting services and strategic insight to clients in all sectors of the energy industry
- Key practice areas include wholesale markets & energy suppliers, policy and market development, energy aggregation and procurement, customer-sited energy projects (primarily solar and efficiency), and utility tariff and energy cost forecasting
- Demonstrated success in all stages of renewable and conventional energy project development



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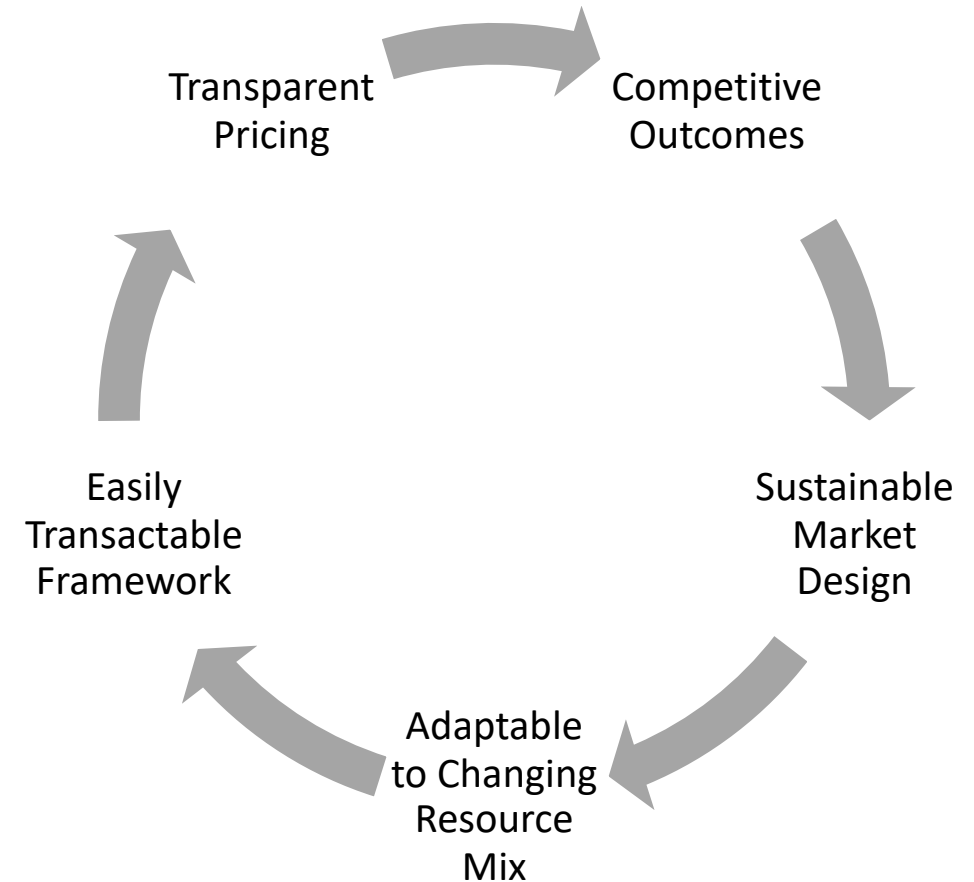
Mr. Borgatti leads Gabel Associates' RTO Services Group, which is a team of diverse energy experts supporting the firm's clients that participate in the wholesale power markets throughout North America. He is an expert in energy market design, operations, and planning fundamentals, as well as renewable and conventional project development and financial matters. Mr. Borgatti regularly appears before the Federal Energy Regulatory Commission ("FERC"), state utility commissions and RTO/ISO stakeholder processes. Prior to joining Gabel Associates, Mr. Borgatti was a legal specialist for the New Jersey Board of Public Utilities.

Challenges Currently Facing Centralized Capacity Markets

- Undifferentiated capacity models do not value different resources' contributions to reliability
- Consumer choice and willingness to pay poorly reflected in market prices today
- No direct pathway to advance public policies within competitive markets
- Reliance on mitigation to produce competitive results

Key Take Away

- FCM may not represent durable, long-term solution despite historic success at maintaining reliability



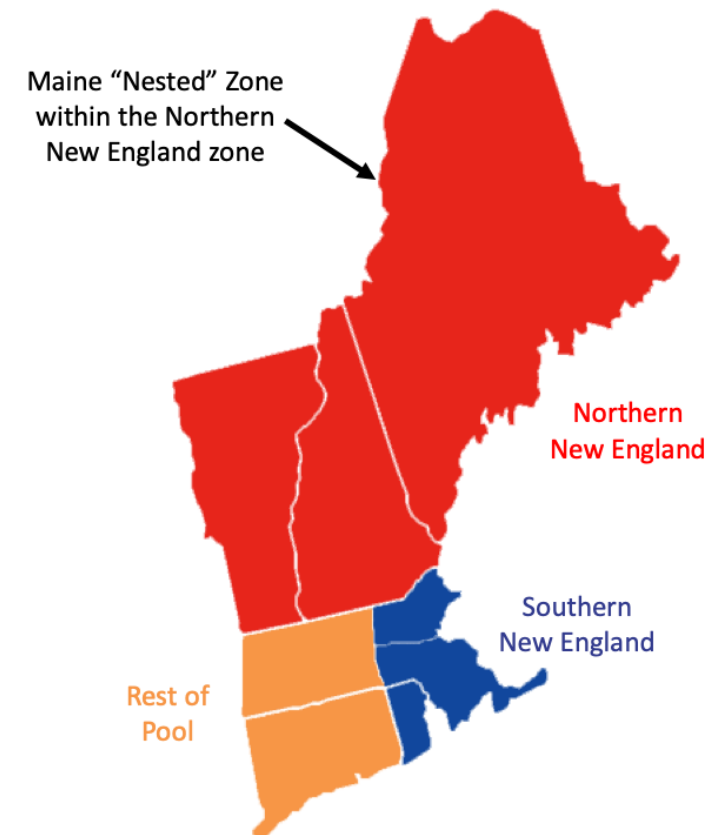
Capacity as A Commodity Framework

- **Same** general FCM timeline, parameters and CETL report
- **New** forecast capacity obligation for each LSE in ISO footprint
- **New** ISO Metric reflecting reliability needs based on resource fuel mix
- **New** “Market Specifications” describing available products and terms
- **New** capacity trading platform with publicly available market data
 - Bid/ask spread
 - Volume
 - Remaining capacity available
 - Pricing index



Capacity Bilateral Window

- ISO-NE opens capacity bilateral window around time of current FCA (~ three years before CCP) including locational constraints
- Suppliers offer all qualified capacity for sale when bilateral window opens
 - Sellers can use multiple price/MW points for each resource
 - Non-mitigated supply offers permitted up to Net CONE without prior approval
 - Mitigated offers between ISO-NE approved floor price and Net CONE
- Buyers can submit buy bids any time during bilateral window
 - Bids can include price, quantity, and target CSO duration
 - Have the option include desired fuel type
- ISO-NE removes buy and sell-side MWs after each transaction closes showing market remaining available capacity supply and demand by fuel type in each zone
- ISO-NE also publishes non-transaction specific prices and updates index providing transparent price signal to all market participants



Key Take Away

- Capacity Bilateral Window allows flexibility for evolving state policies to be reflected in the capacity mix

Residual Reliability Auctions (“RRAs”)

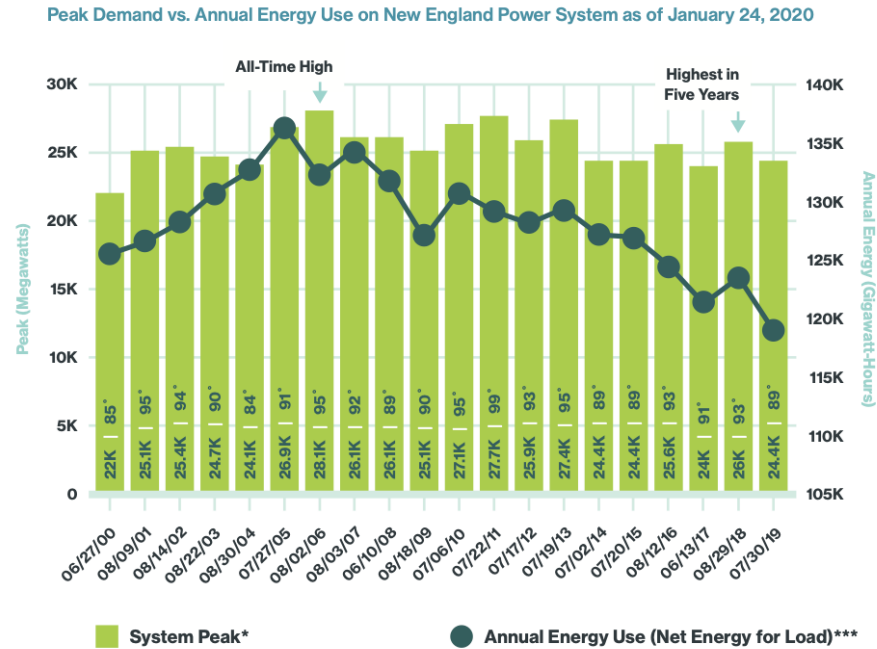
- Backstop mechanism to ensure ISO-NE maintains reliability in response to both evolving system needs, and resource mix, both of which are expected to be more dynamic in the coming decade(s)
- Patterned on current single clearing price FCA design
- Two Incremental RRAs held between bilateral window opening and start of CCP
 - Provides additional opportunity for buyers and sellers to transact
 - Also allows parties to true-up CSOs and purchases before CCP
- Final mandatory RRA opens ~ 12-months before CCP to procure any remaining capacity obligations and resource adequacy needs
 - New ISO Metric conducted as an “aggregate type ELCC approach” to better calibrate what remaining needs are left
 - Considers relationship between variable and balancing resources procured in bilateral market relative to local and regional needs
- Allows ISO to produce transparent prices that value system reliability needs and consumer choice

Key Take Away

- ISO-NE becomes buyer of last resort in final RRA
- Buyer and seller strategies can reflect bilateral and RRA pricing and market data

New Resource Adequacy Metric: Conceptual Framework

- Identify reliability services necessary to maintain regional and local resource adequacy
- Quantify how different resource impact the need for these services
- Evaluate whether ISO can meet reliability criteria with fuel mix procured during bilateral window
- RRA procures capacity from resources that satisfy any outstanding reliability needs
- RRA prices to transparently “value” region’s overall resource adequacy needs

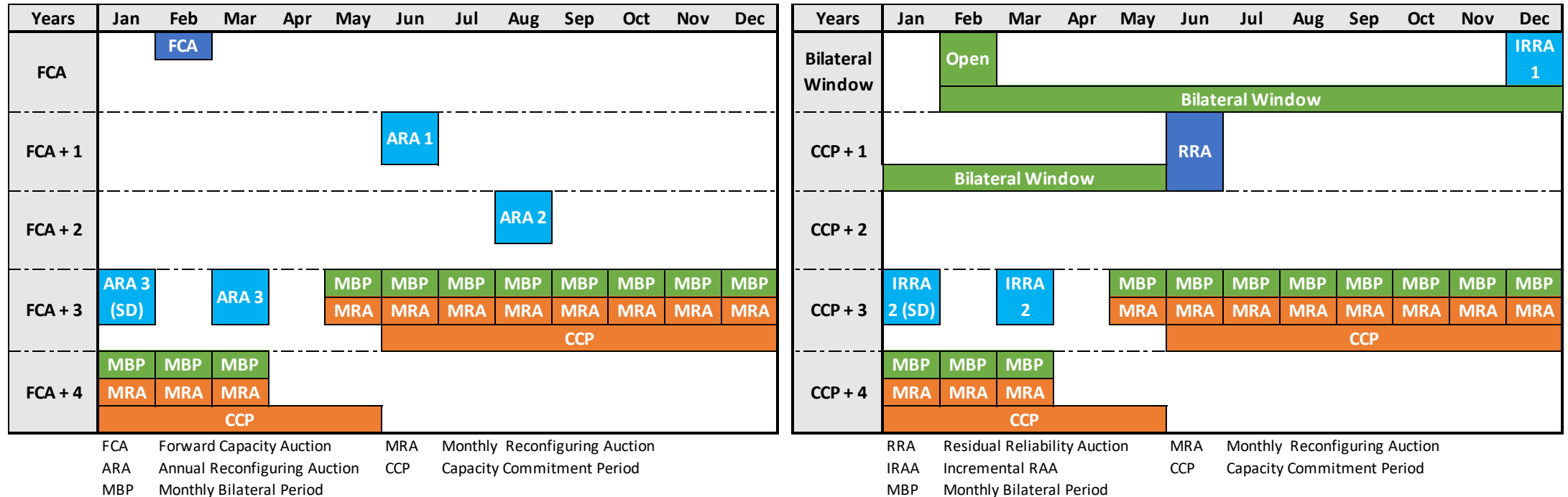


Key Take Away

- Construct defines capacity product in terms of both energy deliverability and resource adequacy
- Product definition based on reliability services fuel neutral and adaptable to new technology types
- Transparent price signal informs market participants’ investment and procurement decisions

Source: <https://www.iso-ne.com/static-assets/documents/2020/03/npc-20200305-composite4.pdf>

Comparing Market Timelines



Key Take Away

- ~ 16-month bilateral window provides opportunity for price discovery while market participants calibrate their strategies and positions
- Holding RRA ~ one-year before CCP allows for new entry when necessary for reliability

Market Power Mitigation with Direct Path to Market

- FERC requires ISO to maintain appropriate provisions to mitigate market power
- Mitigation should target most acute market power risk consistent with FERC precedent
 - Buy side mitigation patterned consistent with FERC affiliate transaction review standards and *Mobile-Sierra* framework
 - FERC vertical and horizontal market power screens for monopoly power
 - Direct Buy-side out-of-market payments to specific suppliers or at predetermined prices
- Mitigated offer floor in bilateral window floor equals resources avoidable costs or out-of-market subsidy value net of forecast energy and ancillary revenues
 - Bilateral purchases of mitigated capacity are in market by definition
- Mitigated resources can participate in the IRRR and RRA at any price up to Net CONE **but** cleared offers are pay-as-bid while unmitigated suppliers receive single auction clearing price

Key Take Away

- Provides direct path to market for resources that support local energy policies
- Eliminates ISO-NE role in determining appropriate resource-specific offer price in RRAs
- Manages market power by calibrating incentives for mitigated suppliers



Summary & Conclusions

- Framework combines beneficial attributes of conventional commodity exchange and Renewable Energy Certificate (“REC”) tracking and procurements models
- Straightforward market design that is understandable, implementable, and durable
- Like REC markets, allows market participants to procure and track capacity from resources that support energy policy objectives including state clean energy goals
- Resource adequacy metric allows ISO to maintain transparent price signals that communicate reliability needs
- Flexible design allows market to efficiently integrate emerging technologies and inform future investment decisions as regional resource mix evolves
- Compatible with other constructs states may desire to coordinate procurement of clean energy, i.e., FCEM
- More information available in [Capacity as a Commodity White Paper](#) developed in partnership with the American Wind Energy Association