



# Forward Capacity Market: Implications for Resource Planning

April 24, 2007

Marlborough, Massachusetts

Presented by:  
Brian E. Forshaw

# Overview



- Background on Capacity Markets
- Historical Capacity Market in New England
- Key Attributes of Forward Capacity Market (FCM)
- Implications of FCM on Resource Planning
- Potential Strategies for Public Power

# Why “Capacity Markets”?



- Marginal clearing price Energy Markets don't provide sufficient revenues to cover carrying cost of all resources needed to assure reliability.
  - Peakers and intermediate resources hit the hardest.
- Capacity market proponents blame bid caps and market power mitigation.
- Competitive energy markets naturally tend to put pressure on reserve margins.

# New England Capacity Markets (Pre-FCM)



- Monthly obligations based on net “uncovered” position.
- Monthly Supply and Deficiency Auctions set the price.
- “Vertical Demand Curve”
  - Small surplus drives price towards zero.
  - Tight market drives towards administrative cap.
- Region-wide surplus has resulted in low prices.
- Units that pass “reliability screen” easily justify eligibility for Cost of Service based RMR agreements.

# Key Attributes of Forward Capacity Market



- Single-Buyer Model
  - ISO holds auction to procure all Capacity needed to meet forecasted Capability Responsibility.
  - “Self-Supplied” Resources owned by LSEs must also be “cleared” through the auction (more to come later)
  - Demand Resources that meet applicable ISO qualifications are also eligible to receive Capacity Payments.

# Key Attributes of Forward Capacity Market (cont.)



- FCM is an annual obligation market
  - Resource obligations based on Summer ratings only.
    - Resources paid monthly based on the Summer Claimed Capability value cleared in the auction.
    - Surplus Winter Capability can be “paired” with Summer-only Resources (i.e. Demand Response/Hydro-Quebec) for incremental revenues.
  - Monthly payment obligations for Load Serving Entities (LSEs) continue to be based on the LSE’s share of previous year’s annual peak.

# Key Attributes of Forward Capacity Market (cont.)



- Price Setting Mechanisms (Listen to John's presentation for more details)
  - Generally, all resources are paid a price set by New Resources needed to clear the market.
  - If prices get too low, “Delist Bids” from Existing units can set the price.
  - Floor and Ceiling prices apply for first 3 “successful” auctions.
  - Monthly “Peak Energy Rent” (PER) adjustment reduces Capacity payments if Energy Market prices get too high (i.e. > \$200 per MWh)

# Key Attributes of Forward Capacity Market (cont.)



- FCM is a locational market.
  - Locational “constraints” may be imposed in the FCM auction.
  - ISO will determine need for locational constraints *before the auction* based on analysis of transmission capability and generating resources inside constrained area.
  - Connecticut and Boston (to a lesser extent) continue to be most likely culprits.

# Key Attributes of Forward Capacity Market (cont.)



- FCM is a Forward Market
  - ISO will make commitments to resources needed to meet Resource Adequacy requirements 2 – 3 1/2 years in the future.
  - “New entry” is assumed to discipline prices.
  - New Resources that clear can get a 5 year price commitment.
  - Existing Resources get a 1 year price commitment.

# Timelines for First FCM Auctions



Show of Interest	Existing Capacity Qualification	New Capacity Qualification	Forward Capacity Auction Date	Start FCM Commitment Period
Dec 2006	Apr. 30 2007	June 15 2007	Feb. 1 2008	June 1 2010
Sep – Oct 2007	Feb 29 2008	Apr. 15 2008	Dec. 1 2008	June 1 2011
Jul – Aug 2008	Dec. 31 2008	Feb. 17 2009	Oct. 1 2009	June 1 2012
May – Jun. 2009	Nov. 2 2009	Dec.15 2009	Aug. 2 2010	June 1 2013
Mar. – Apr. 2010	Aug. 31 2010	Oct. 15 2010	June 1 2011	June 1 2014
Jan. – Feb. 2011	June 30 2011	Aug 15 2011	Apr. 2 2012	June 1 2015
Nov. - Dec. 2011	Apr. 30 2012	June 15 2012	Feb. 1 2013	June 1 2016
Nov. – Dec. 2012	Apr 30 2013	June 17 2013	Feb. 3 2014	June 1 2017

# Implications for Resource Planning



- Capacity prices will be going up.
  - New units set the price for Capacity.
  - 5 year price commitment for New Resources.
- Bilateral contract opportunities will diminish.
  - Market price will be known well in advance.
  - Resource owners don't want to miss the “upside” if the market blows out.
- Energy Market volatility may decrease.
  - PER adjustment makes it less profitable for generators to cause Energy prices to go up.

# Strategy Implications for Public Power



- Planning decisions need to be made earlier and cover longer timeframes.
- Bilateral contracts will probably take longer-term deals (> 5 years.)
- Need to re-look at build option (at least for peaking, but also for other types of resources.)
  - Take advantage of low-cost and/or tax-exempt financing opportunities, 100% debt capital structure, continuing obligation to serve.
  - Self-Supply opportunities to avoid capacity market price volatility. (Listen to Ken's presentation)

# Strategy Implications for Public Power (cont.)



- Consider location of Resources before making long-term commitments
  - Transmission planning process should reduce impact of constraints over time.
  - May affect timing of when units brought on-line.
  - If all else fails, closer to home is better.
- Leverage relationships with retail customers through Demand Resource programs. (Listen to Steve's presentation)