

# How Intermittent Resources Can Interconnect and Participate in the Forward Capacity Market

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# Forward Capacity Market Objectives

- Procure enough capacity to meet New England's forecasted demand three years in advance
- Provide a long-term commitment to supply and demand resources to encourage new investment
  - Up to 5 years
- Select a portfolio of supply and demand resources through a competitive forward capacity auction process

# New England's Forward Capacity Market

- Key Elements:
  - Forward Capacity Auction [FCA]
    - 1<sup>st</sup> auction in 2008 for 2010 delivery
  - Performance incentives
    - Ensure a high degree of availability
  - “Reconfiguration” auctions: Adjust capacity amounts and obligations to align forecasts and actual conditions
    - Annual, seasonal, monthly
  - Transition payments until deliveries under first FCA
    - 12/1/06 – 5/31/10

# Overview of FCA Process

- Consists of three major phases
  - Qualification Period
    - Determine which resources can submit offers into the FCA
  - Planning Period
    - Give suppliers with accepted offers sufficient time to construct new resources to fulfill capacity obligations
  - Commitment Period
    - Period over which suppliers with accepted offers are obligated to deliver capacity (1-5 years)

# FCM Encourages New Capacity

- Installed Capacity Requirement (ICR) is forecasted three years into the future
  - Auction held about three years in advance of the delivery of capacity
- All capacity that wins in auction is paid the same price in first year of commitment
- New capacity: Option to select auction price for 1-5 years
  - Longer commitment reduces investment risk
- Existing capacity: Get auction price for 1 year
  - Already invested—no need for long commitment

# Intermittent Resources

- Renewable resources with no control over their net power output
  - Wind
  - Solar
  - Run of River Hydro
  - Other renewable

# New Intermittent Resource: FCM Qualification

- Qualification Process – New Capacity Resources
  - Show of Interest Application (“SOI”)
    - Information for preliminary analysis of proposal’s effect on the New England Transmission system
  - Qualification Package
    - Sufficient information to assess project’s viability from a construction perspective

# New Intermittent Resource: Qualified Capacity Rating Method

- Estimated based on resource data submitted by Project Sponsor
  - Summer - June thru September
    - 1:00 p.m. to 6:00 p.m.
  - Winter - October thru May
    - 5:00 p.m. to 7:00 p.m.
  - All days in the month are counted
- Monthly payments adjusted after operation the first year to the extent capacity is not provided

# Forward Capacity Auction Summary

- Run FCA with Qualified Capacity
- New resources withdraw from FCA if clearing price falls below desired price
- Resource clears if the capacity clearing price  $\geq$  desired price

# Intermittent Resource: Energy Market

- Intermittent Resources may submit supply offers into the Day-Ahead Energy Market
  - Subject to resulting financial commitments
- Required to submit an offer into the Real-Time Energy Market consistent with the characteristics of the resource.
  - Real Time NCPC Charges calculated for Intermittent Resources will assume a generation deviation of zero

# Intermittent Resource: Compensation

- During the Commitment Period, Intermittent Resources are paid:
  - Winter qualified capacity (8 months) and
  - Summer qualified capacity (4 months)
    - Consistent with Settlement Agreement for explicit recognition of winter reliability contribution from intermittent units
- ICR is based on summer MW values
  - Reliability concerns

# FCM Timeline for 1st FCA

Horizon	Action
01/01/2007 – 10/01/2007	Qualification Review Period
02/15/2007	FCM rules filed with FERC
03/01/2007	Begin First FCA Existing Resource Qualified MW Calculation
04/02/2007	<b>Deadline:</b> ISO-NE sends out Existing Resource Qualified MW Notification
04/30/2007	<b>Deadline:</b> Existing Resource Qualification Packages (De-list requests)
05/03/2007	ISO Posts Export and De-List Bid Information
06/15/2007	<b>Deadline:</b> New Resource Qualification and Imports
10/01/2007	Notify New Resources of Qualification and Financial Assurance Requirements and disposition of de-list requests, based on price
10/12/2007	<b>Deadline:</b> New Resources Post Financial Assurance
11/01/2007	De-List Bids, Capacity Zones, LSRs & ICR filed with FERC
02/11/2008	FCA #1 – Delivery for June 2010 through May 2011
Post-Auction	Notification of De-List Bids accepted, based on reliability

# Interconnecting Wind Projects

# Three Aspects of Connecting a Generator

- Interconnection Process
  - Leads to interconnection agreement
- NEPOOL Approval Process
  - Leads to permission to operate interconnected to New England electric system
- Market Process
  - Leads to agreement on sale of generator's energy and capacity

# Interconnection Process – Jurisdiction

- Contact Local Distribution Company (LDC) to determine who has jurisdiction over the project
- Apply to ISO New England if project is under FERC's jurisdiction
- Use ISO's Large Generator Interconnection Process if maximum facility output is > 20 MW
- Apply to LDC if project is under State jurisdiction
- For more information see the definition of "Interconnection Request" in Schedule 22 or 23 of ISO tariff

# Interconnection Process – Steps

- Review of request
- Scoping meeting
- Feasibility Study
- System Impact Study
- Facilities Study
- Interconnection Agreement

# NEPOOL Approval Process

- Peer review to ensure generator or transmission project has no significant adverse impact on reliability
- Transmission and Stability Task Forces review studies and make recommendation to NEPOOL Reliability Committee (RC)
- RC makes recommendation to ISO
- ISO issues letter stating project may interconnect

# NEPOOL Approval Process (continued)

- Generator or Transmission Owner makes a Proposed Plan Application (PPA) after System Impact Study is complete
- Generating Facilities 5MW or less only required to notify RC
- Also called I.3.9 process

# Market Process

- Requirements to participate in a market include metering, communication circuits, financial assurances, etc.
- Energy Market-Settlement only
  - Less than or equal to 5 MW
  - No day ahead or real time scheduling
  - Receive real time zonal price
- Energy Market-EMS Unit
  - Rules being developed for wind farms over 5 MW
- Capacity Market
  - Classified as an Intermittent resource
  - Not subject to availability penalties
  - Payment based on reduced capacity value

# Who To Contact

- At ISO New England, for interconnections, Dave Forrest 413-540-4584, [dforrest@iso-ne.com](mailto:dforrest@iso-ne.com)
- At ISO New England, for other questions, ISO Customer Service 413-540-4220
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