

# Introduction to Demand Resources Participation in New England's Forward Capacity Market

*Presented to:*

National Association of Energy Services Companies'  
New England Regional Meeting  
September 28, 2006

*Presented by:*

Bob Laurita  
Supervisor, Demand Response  
ISO New England

# Overview

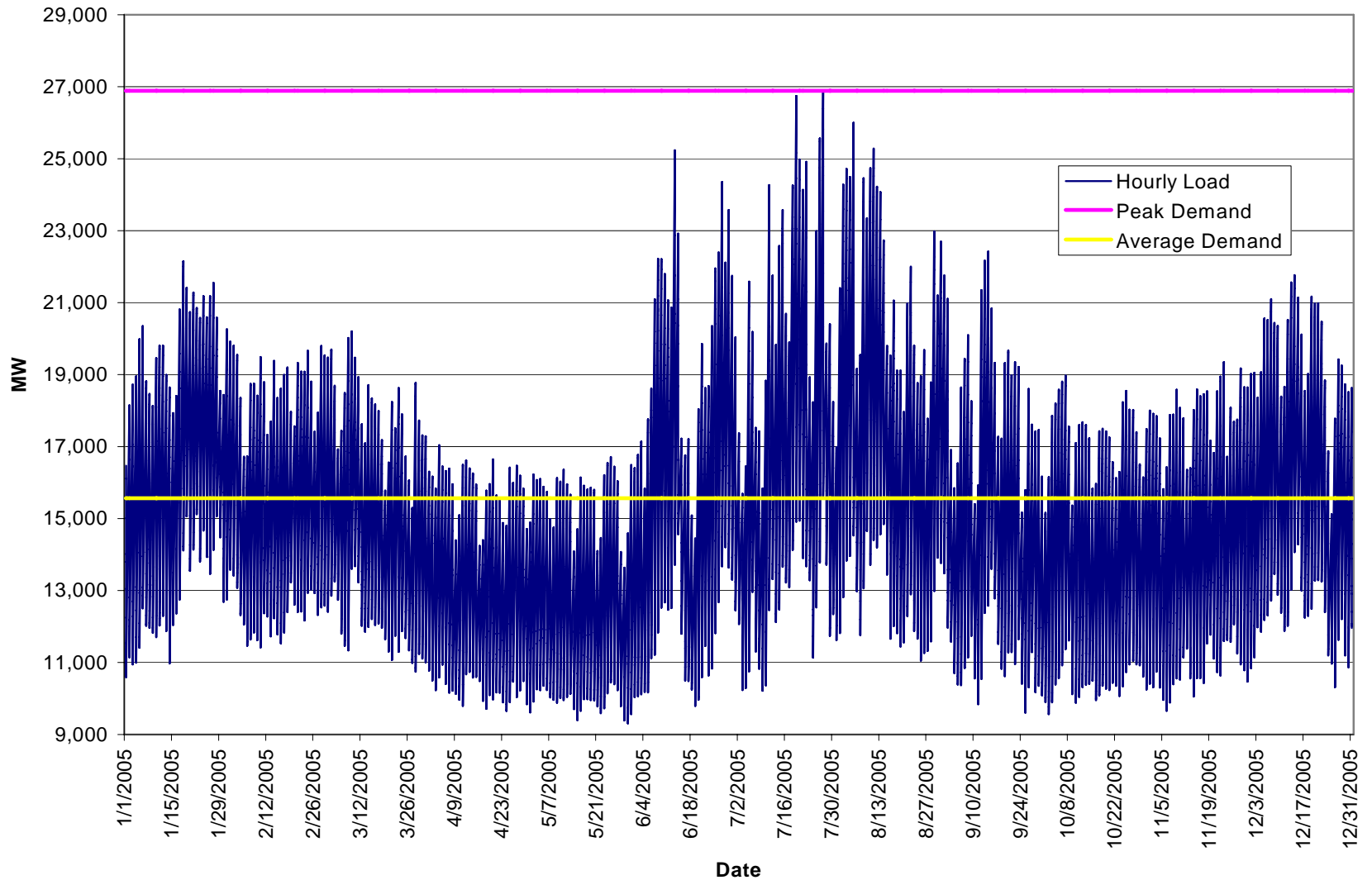
- Background on the Wholesale Market
- What is the Forward Capacity Market?
- When will it start?
- Who and What can participate in the Forward Capacity Market?
- How will the Forward Capacity Market work?
- How can you get involved?

# Background: Wholesale Electricity Products

- **Energy Markets**
  - Procure enough resources to meet customers' demand 24 hours per day, 365 days per year.
    - Real-Time and Day-Ahead Energy Markets
- **Forward Capacity Market**
  - Procure enough resources to meet the region's future peak demand.
- **Ancillary Services Market (Reserves)**
  - Procure additional resources just in case a problem occurs (contingencies), maintain voltage and frequency (60 Hz), etc.

# Hourly New England Load (2005)

## Calendar Format

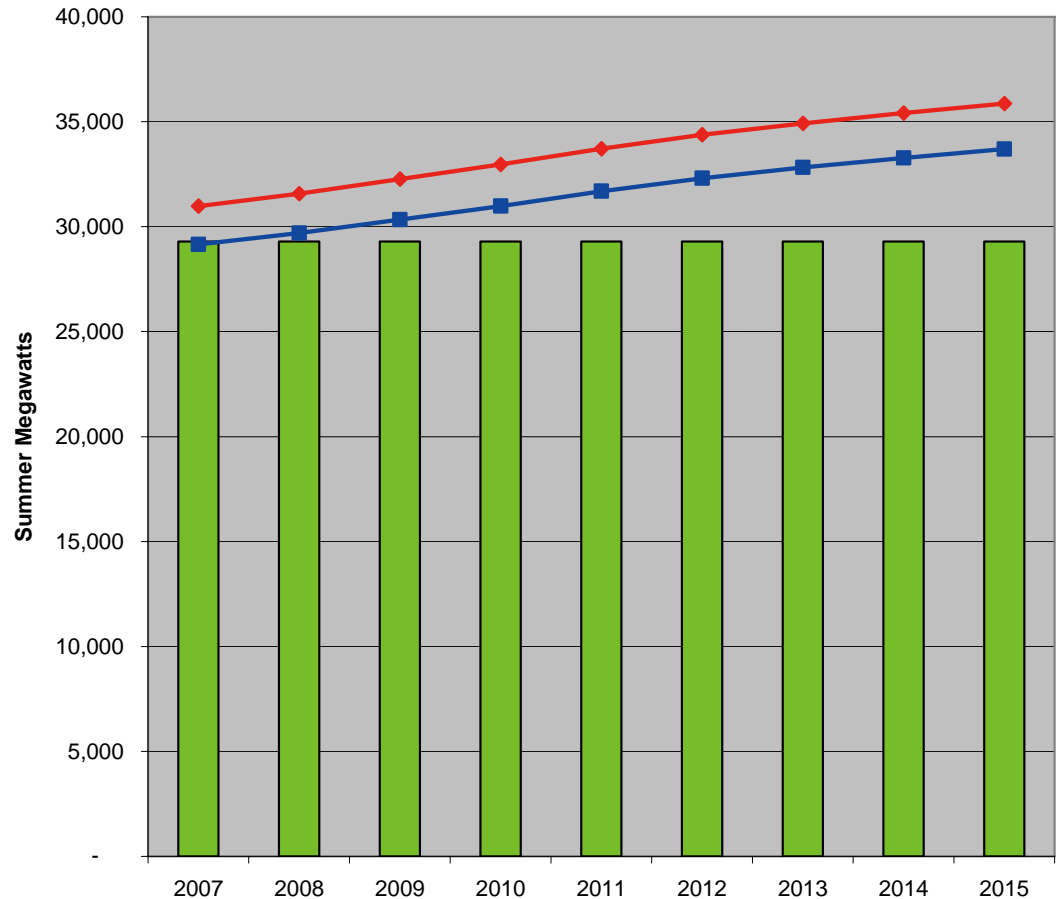


# Forward Capacity Market - Background

- Design of the Forward Capacity Market resulted from a Settlement Agreement signed on March 6, 2006 with a variety of parties including:
  - ISO New England
  - Many New England State Regulators
  - Members of the New England Power Pool (NEPOOL)
  - Industry Associations

# Forward Capacity Market - Objectives

- Procure Capacity to meet forecasted Demand 3 years in the future.
- Select a portfolio of Supply and Demand Resources through a competitive auction process.
- Up to 5 year commitment for New Resources



# Forward Capacity Market - Phases

- **Qualification Period:** Determine which resources can submit offers into the FCA
- **Planning/Construction Period:** Gives suppliers with accepted offers sufficient time to construct new resources to fulfill capacity obligations
- **Commitment Period:** The period over which suppliers with accepted offers are obligated to deliver capacity (1-5 years)

# Forward Capacity Market – Schedule

- 1<sup>st</sup> Forward Capacity Auction scheduled to take place in **February 2008** for Capacity delivery starting **June 2010**
- New Resources interested in participating in the 1<sup>st</sup> Forward Capacity Auction must submit to ISO-NE:
  - Show of Interest Application by **December 31, 2006**
  - Qualification Package by **June 15, 2007**
- After February 2008, additional Forward Capacity Auctions and Reconfiguration Auctions will be held on a regular basis (annual, seasonal and monthly).
- **Transition Period** starts December 1, 2006 providing Capacity Payments to eligible Supply and Demand Resources through June 2010

# Eligible Resources

- **Supply Resources**
  - Traditional Generation (Oil, Coal, Natural Gas, etc)
  - Intermittent Generation (Wind, Solar, etc.)
  - Renewable Generation
- **Demand Resources**
  - Energy Efficiency
  - Load Management
  - Distributed Generation
  - Demand Response

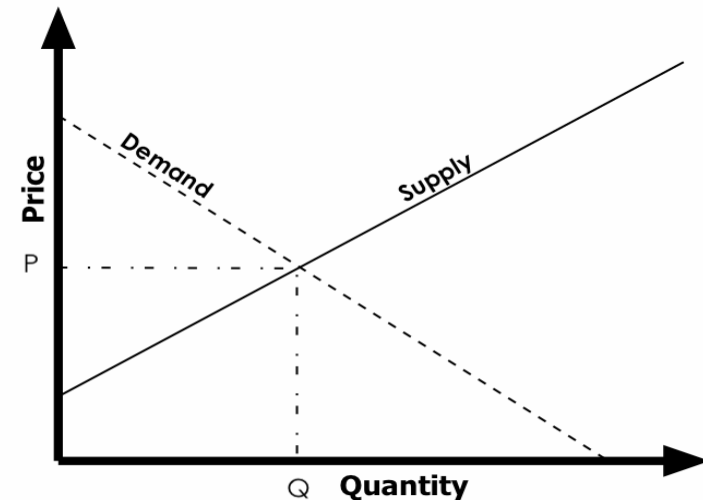


# Eligible Participants

- Owners and Developers of Traditional Power Plants
- Electric Utilities
- Competitive Energy Suppliers
- Energy Services Companies (ESCO)
- Demand Response Providers
- Technology Providers
- Retail Customers (Willing to satisfy the same requirements as other Eligible Participants)

# Forward Capacity Auction - Process

- A portfolio of Supply and Demand Resources will be selected through an Auction Process.
- The sum of the Capacity Offers from the selected Supply and Demand Resources will equal the total Capacity Requirement for the region.
- The Auction will set the Capacity Price (\$/kW per Month) for the Supply and Demand Resources clearing in the Auction.



# Transition Period (12/1/2006 to 5/31/2010)

- Eligible Supply and Demand Resources can earn monthly Capacity Payments.
- Resources must be registered with ISO New England.
- Resources must demonstrate demand reduction or output per an approved **Measurement & Verification Plan**.

Period	Capacity Rate
12/1/2006 to 5/31/2008	\$3.05/kW per Month
6/1/2008 to 5/31/2009	\$3.75/kW per Month
6/1/2009 to 5/31/2010	\$4.10/kw per Month

# Demand Resource Examples

# Revenues and Savings

- **Capacity**
  - \$/kW per Month based on Transition Payments (\$3.05/kW starting December 2006) or Forward Capacity Market clearing price (starting June 2010)
- **Energy Reduction or Output**
  - Avoided Retail or Wholesale Price (\$/kWh)
  - Demand Response Performance Payment (Currently \$0.50/kWh for 30-Minute Response)

# Transition Period Example

- **General Assumptions**

- Capacity Value: 500 kW
- Transition Payment: \$3.05 to \$4.10/kW per Month
- Transition Period: 12/1/2006 to 5/31/2010 (3 ½ Years)
- Avoided Retail Electricity Rate: \$0.10/kWh

- **Energy Efficiency Project**

- Project reduces 500 kW, on average, Monday thru Friday, 8 hours per day.

# Energy Efficiency Example

<b>Capacity</b>	<b>500</b>	<b>kW</b>
Transition Payment	\$3.05 - \$4.10	/kW per Month
Transition Period	3.5	Years
<b>Total Transition Payments</b>	<b>\$ 74,550</b>	<b>17%</b>
Annual Operating Hours	2,080	Hours
Annual Energy Savings (kWh)	1,040,000	
Avoided Retail Price (\$/kWh)	\$ 0.10	
Annual Energy Savings	\$ 104,000	
<b>Total Energy Savings</b>	<b>\$ 364,000</b>	<b>83%</b>
<b>Total over 3 1/2 Years</b>	<b>\$ 438,550</b>	<b>100%</b>

# Forward Capacity Market Example

- **General Assumptions**

- Capacity Offer: 500 kW
- FCA Clearing Price: \$10/kW per Month
- Commitment Period: 5 Years
- Avoided Retail Electricity Rate: \$0.10/kWh

- **Combined Heat & Power Project**

- Project reduces 500 kW, on average, 5,000 hours per year.

# Combined Heat & Power Example

<b>Capacity Offer</b>	<b>500</b>	<b>kW</b>
FCM Capacity Price	\$ 10.00	/kW per Month
Commitment Term	5	Years
Monthly FCM Capacity Payment	\$ 5,000	
<b>Total FCM Capacity Payments</b>	<b>\$ 300,000</b>	<b>19%</b>
Annual Operating Hours	5,000	Hours
Annual Energy Savings (kWh)	2,500,000	
Avoided Retail Price (\$/kWh)	\$ 0.10	
Annual Energy Savings	\$ 250,000	
<b>Total Energy Savings</b>	<b>\$ 1,250,000</b>	<b>81%</b>
<b>Total over 5 Years</b>	<b>\$ 1,550,000</b>	<b>100%</b>

# FCA Qualification Process

- Minimum Project Size: **100 kW**
- Must be located in New England
- Must be located in a single Load Zone
- **Show of Interest Form** (Due 12/31/06 for 1<sup>st</sup> FCA)
  - Brief Project Description
- **Qualification Package** (Due 6/15/07 for 1<sup>st</sup> FCA)
  - Detailed Project Description
  - Source of Funding
  - Customer Acquisition Plan
  - Measurement & Verification Plan
  - Critical Path Schedule
  - \$500 Non-Refundable Application Fee
- **Financial Assurance**
  - Required from all Resources that clear in the FCA

# How can a Retail Customer get involved?

- **Directly**

- Qualify to offer a project to ISO-NE in the Transition Period and/or a Forward Capacity Auction.
- Project can not also be offered by a Utility, ESCO, etc. (No Double Payment)

- **Indirectly**

- Participate in a utility Energy Efficiency Program
- Enroll in ISO New England's Demand Response Program through your local utility, competitive energy supplier or Demand Response Provider
- Offer a project through an Energy Services Company (ESCO), Competitive Energy Supplier, etc.