DG/CHP In New England's Transitional and Forward Capacity Market (Starting Dec. 1, 2006)

Presentation To NECHPI
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Introduction to Demand Resources Participation in New England's Forward Capacity Market

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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

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

Long-Term Forward Capacity Market 6/1/10 onward

- Capacity Payment Values to be based upon annual auctions conducted 2-3 yrs in advance. 1st auction in Feb 08 for 6/10-5/11. New auction winners can get 5 yrs at auction price. Assume >$4.05 and <$15.00/kW/Mo.
- Existing EE/DG/LM/DR resources can get 1 yr at auction price set three years earlier.
- There are no energy payments from this market. Those come from host energy displacement. New deal terms may be needed.

Value Flux (1)

- Capacity revenue from wholesale market for on-site facility operation is innovative. (On-going payments and not just up-front grants may require different business approach.)
- Transitional Payments of $3.05-$4.05/kW/Mo from the ISO-NE currently appeal to utilities and State Regulators who are reaching out for them. Other market participants appear asleep.
- FCM auction results from $4 to $15/kW/Mo could settle out from $6 to $10 kW/Mo (in 2008 for 2010). Defaulting the market to the utilities and State Regulators now loses it then.

Value Flux (2)

- Third Party DR Providers have been doing capturing and sharing Capacity Revenue but only for Emergency Generators. EG is drying up in face of Env. Regs.
- EndUsers, DG&CHP_Builders/Developers and Operators are just beginning to figure-out/focus on this opportunity.
- The final rules on program design, measurement and verification are being negotiated between now and February 2007.

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)

Mind Set Needs to Unfreeze For Transition

- DG/CHP project economics need to consider new revenue and cost options.
- ISO-NE's transitional market for capacity began to operate Dec. 1st, will continue thru May 31, 2010.
- Eligible for $3.05/kW/Mo until 5/31/08; $3.75/kW/Mo until 5/31/09; $4.10/kW/Mo until 5/31/10.

New Language Needed

- ISO-NE and Stakeholders Negotiated a New Paradigm to deal with Capacity needs - FERC approved on June 16, 2006
- Demand Resources for wholesale market include Demand Response & Other Demand Resources (ODR)
- ODR includes: EE/DG/LM - new after 6/16/06

New Language Needed (2)

- ODR Performance Hours
  (Jn,Jl,Ag M-F) Hrs ending 1400 thru 1700
  [applies also to Sp,Oc,Nv,Ap&My]
  (Dc,Jn M-F) Hrs ending 1800 thru 1900
  [applies also to Fb&Mr]
- Demand Reduction Value of DG = Average Hourly Load Output during above

New Language Needed (3)

- Critical Peak Hours = hrs of projected load next day when load is expected to exceed 95% of 50/50 System Peak Load Forecast and hrs when ISO activates Action Steps 6 or Higher of OP 4 in the load zone.

M-35 Definitions (Nov 06)

- **Distributed Generation**
  - Distributed Generation is a type of Other Demand Resource as further described in Section 8.3.7.2 of Market Rule 1 and shall mean a generation resource directly connected to end-use customer load and located behind the end-use customer's billing meter, which reduces the amount of energy and capacity that would otherwise have been drawn from the electricity network in the New England Control Area, provided that the capacity of the generation resource registered with the ISO does not exceed 5 MW, or does not exceed the most recent annual non-coincident peak demand of the individual end-use metered customer to which the generation resource is directly connected, whichever is greater. [Market Rule 1]

Demand Reduction Value

– A seasonal and monthly value calculated for an Other Demand Resource pursuant to Section III.8.8.5.2 of Market Rule 1.

– Seasons - Performance in J,J,A applies to Ap,My, S,O& N and in D&Jan applies to F&Mr

– Monthly DRV for DG based upon (1) avg hrly output during ODR Perf Hrs in month or (2) (1) averaged with avg perf across Critical Peak Hours if any in month.

Results Get Verified

- Verified results using Measurement and Verification Protocols get sent to ISO-NE
- Payment results.

Further Information

- See Frequently Asked Questions at the following
- https://www.iso-neprograms.com/login/
- The E Cubed Company, LLC is available to assist you evaluate market entry and operations.

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