

# Order 745: Demand Response Compensation in Organized Wholesale Energy Markets (Docket RM10-17-000)

**Donna Pratt**

**NYISO**

*Manager, Demand Response Products*

**Price-Responsive Load Working Group**

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# Background

- ◆ **On March 15, 2011 FERC issued its final order regarding DR compensation in wholesale energy markets**
- ◆ **Two compliance filings required:**
  - *July 22, 2011 :*
    - Monthly net benefits test and price threshold
    - Measurement & Verification changes, as necessary
    - Cost Allocation
  - *September 21, 2012:*
    - Study report on feasibility of dynamic net benefits test

# Compliance Requirements

## ◆ Compliance Filing: July 22, 2011

- *Paragraph 45: DR resources will be compensated at full LMP when used to balance supply and demand, and when the LMP is above a threshold point as determined by the Net Benefits Test.*
- *Paragraphs 78 & 79: The Net Benefits Test will be calculated monthly to determine the threshold point where the benefits of deploying DR resources outweigh the costs.*
- *ISOs/RTOs evaluate whether improvements or alternatives in the area of Measurement and Verification (M&V) are necessary to comply with this order.*
- *Paragraph 102: Allocate costs associated with demand response compensation proportionally to all entities that purchase from the relevant energy market in the area(s) where demand response reduces the market price for energy at the time when the demand resource is committed or dispatched.*

## ◆ Compliance Filing: September 21, 2012

- *Paragraph 84: ISOs/RTOs undertake a study to determine the feasibility of integrating a dynamic version of the Net Benefits Test on a real-time basis.*

# Energy Payment for Wholesale Demand Response

- ◆ **DR shall be compensated full LMP when two conditions are met:**
  - *DR has the capability to balance supply and demand; and*
  - *Payment of LMP to DR is cost effective as determined by net benefits test.*
- ◆ **Costs are to be allocated to load where DR reduces LMP**

# Energy Payment: Balancing Supply and Demand

- ◆ **DR scheduled in NYISO's Day-Ahead Demand Response Program fulfills these criteria**
- ◆ **DR will be scheduled based on its offer price in the DAM**
  - *Existing DADRP provision*
- ◆ **DR that responds consistent with its schedule will be paid LMP**
  - *Existing DADRP provision*

# Energy Payment: Cost Effectiveness

- ◆ **Define a threshold point where the net benefit exceeds the cost to load (§ 79)**
- ◆ **Net benefit is the point where the change in LMP for load is greater than the LMP after DR is dispatched (footnote 162, § 79)**
  - ***(Delta LMP x MWh consumed) > (LMPNEW x DR)***
    - **Where LMPNEW is the market clearing prices after DR is dispatched and Delta LMP is the price before DR is dispatched minus LMPNEW).**
- ◆ **Analysis should be updated monthly, by the 15<sup>th</sup> day of the preceding month in advance of the effective date, to allow demand response providers and other market participants to plan, while still reflecting current supply conditions (§ 79 - end)**

# Monthly Net Benefits Test

- ◆ **Method described in the Order:**
  - *Select a representative supply curve for the study month (footnote 161)*
    - **Study month** is the month for which the net benefits and monthly threshold are being computed
    - **Reference month** is the corresponding month of the prior year.
  - *Adjust for resource availability (§ 79)*
  - *Adjust for changes in fuel prices (§ 79)*
  - *Smooth the curve using numerical methods (footnote 161)*
  - *Find the price/quantity pair above which a one MW reduction in quantity that is paid LMP would result in a larger percentage decrease in price than the corresponding percentage decrease in quantity (footnote 161).*

# Price Threshold

- ◆ **Calculated monthly and posted by the 15<sup>th</sup> of the month prior to the month for which it is effective**
- ◆ **NYISO Proposal: Monthly price threshold will become the DADRP Offer Floor and utilize existing offer validation rules**
  - *As currently implemented for DADRP, offers below the DADRP Offer Floor (monthly price threshold) will not validate in MIS*



# Cost Allocation

## ♦ Current DADRP cost allocation method:

- *Each Zone (or set of Zones) are allocated the cost of the DADRP based upon its load ratio share on a daily basis using real-time metered daily load data and the static probability:*
  - (i) that no constraints existed;
  - (ii) that this Zone(s) was upstream of a constraint and curtailment occurred upstream; and
  - (iii) that this Zone(s) was downstream of a constraint and curtailment occurred downstream.
- *For the purposes of DADRP cost allocation, four composite zones are used:*
  - West of Central-East (Zones A,B,C,D,E,);
  - East Upstate Excluding NYC and LI (Zones F,G,H,I);
  - New York City (Zone J); and
  - Long Island (Zone K).

# Cost Allocation - 2

- ◆ **NYISO proposes to keep the same cost allocation method for DADRP**
- ◆ **NYISO will evaluate whether adjustments are needed to account for any changes to:**
  - *Interfaces used to define composite zones*
  - *Percentage of time constraints exist at the specific interfaces*

# Measurement and Verification

- ◆ **NYISO is required to describe its Measurement and Verification (M&V) protocols and either:**
  - *Explain how existing protocols will ensure validity of reported reductions; or*
  - *Propose M&V protocol changes.*
- ◆ **NYISO will evaluate current DADRP baseline to determine whether changes are necessary**
  - *M&V method needs to consider increased frequency of scheduling in energy market to ensure accuracy of the baseline*
    - **Increased frequency of scheduling under current method for DADRP could result in exclusion of representative days which could compromise accuracy of calculating the response provided**

# Summary of Impacts NYISO's Demand Response Programs

- ◆ **DADRP will be brought into compliance with Order 745**
  - *Offer Floor will be revised monthly using the Price Threshold resulting from the Net Benefits Test*
  - *Current cost allocation methodology is being reviewed for possible updates to interfaces and coefficients*
  - *DADRP baseline is being reviewed to prepare compliance filing explanation or propose changes to ensure validity of reductions*
- ◆ **Order 745 will affect design of demand response in RT market scheduled for later this year**

# Next Steps

- ◆ **Order 745 has market impacts beyond demand response**
  - *NYISO will be moving discussions on Order 745 to MIWG*
- ◆ **MIWG meeting dates and proposed agenda items**
  - *June 6: Initial presentation on NYISO's Compliance Filing*
  - *June 30: Update on Order 745 Compliance Filing*
  - *July 15: Presentation of Order 745 Compliance Filing*

The New York Independent System Operator (NYISO) is a not-for-profit corporation that began operations in 1999. The NYISO operates New York's bulk electricity grid, administers the state's wholesale electricity markets, and conducts reliability and resource planning for the state's bulk electricity system.



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