FERC Order 745 Compliance Filing Overview

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DRAFT – FOR DISCUSSION PURPOSES ONLY

Topics

- Review compliance obligations
- Review the NYISO's proposed response to each compliance obligation
- Next Steps

Compliance Obligations

- **Eight distinct compliance obligations covering all aspects of NYISO's 2011 compliance filing**
  - ***Four obligations related to the Net Benefits Test***
  - ***Three obligations related to measurement and verification***
  - ***NYISO's proposed cost allocation methodology***

Obligation 1- Exclusion of Low Load Hours

Provide sufficient evidence to support exclusion of low-load (off peak) hours from supply curve used for NBT. (paras. 37-39)

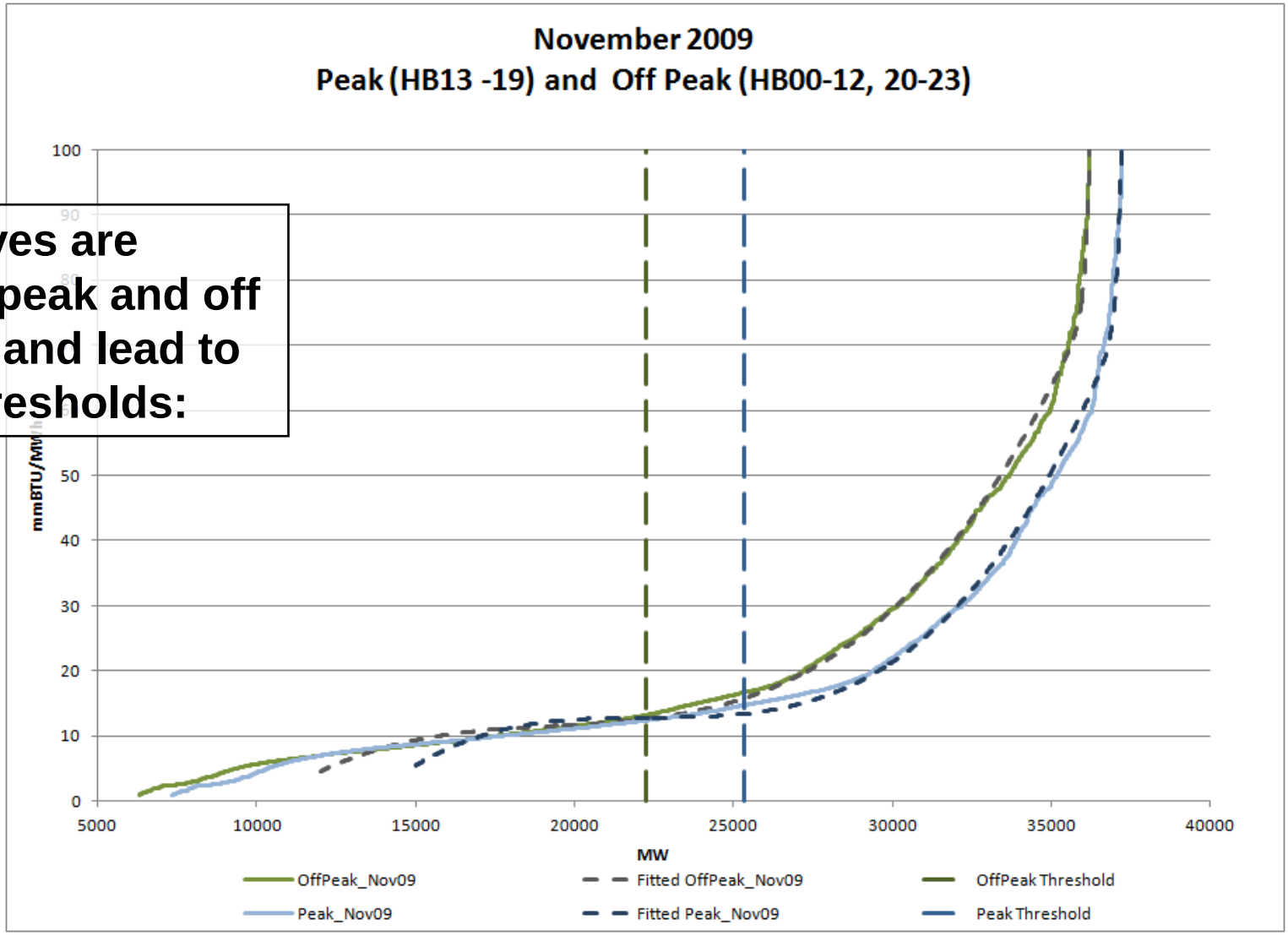
- *Demonstrate how exclusion of these hours impacts NBT results*
- *Demonstrate that NBT outcomes, as proposed, are reasonable*

Demonstrate how exclusion of these hours impacts NBT results:

Reference Month	Study Month	All Days HB 13-19 Heat Rate Threshold (MW)	All Days All Hours Heat Rate Threshold (MW)	All Days HB 13-19 Heat Rate Threshold (mmBTU/MWh)	All Days All Hours Heat Rate Threshold (mmBTU/MWh)	All Days HB 13-19 $$ Threshold (for Study Month)	All Days All Hours $$ Threshold (for Study Month)
Aug-09	Aug-10	27,570	24,620	14.195	12.697	$68.56	$61.33
Sep-09	Sep-10	25,780	24,020	13.593	12.782	$62.80	$59.05
Oct-09	Oct-10	23,910	22,350	12.566	11.942	$53.91	$51.23
Nov-09	Nov-10	25,340	22,990	13.421	12.598	$56.77	$53.29
Dec-09	Dec-10	25,830	23,050	10.696	9.777	$72.73	$66.48
Jan-10	Jan-11	25,430	23,020	10.086	9.227	$81.80	$74.83
Feb-10	Feb-11	24,900	22,340	10.113	9.253	$63.21	$57.83
Mar-10	Mar-11	23,930	21,820	10.918	10.299	$51.31	$48.40
Apr-10	Apr-11	22,550	20,700	11.891	11.265	$53.15	$50.36
May-10	May-11	23,480	21,430	12.881	11.929	$58.99	$54.64
Jun-10	Jun-11	26,850	24,610	12.770	11.594	$61.04	$55.42
Jul-10	Jul-11	24,350	23,130	14.156	12.167	$75.17	$64.61
Aug-10	Aug-11	25,880	24,260	14.288	12.633	$66.01	$58.36

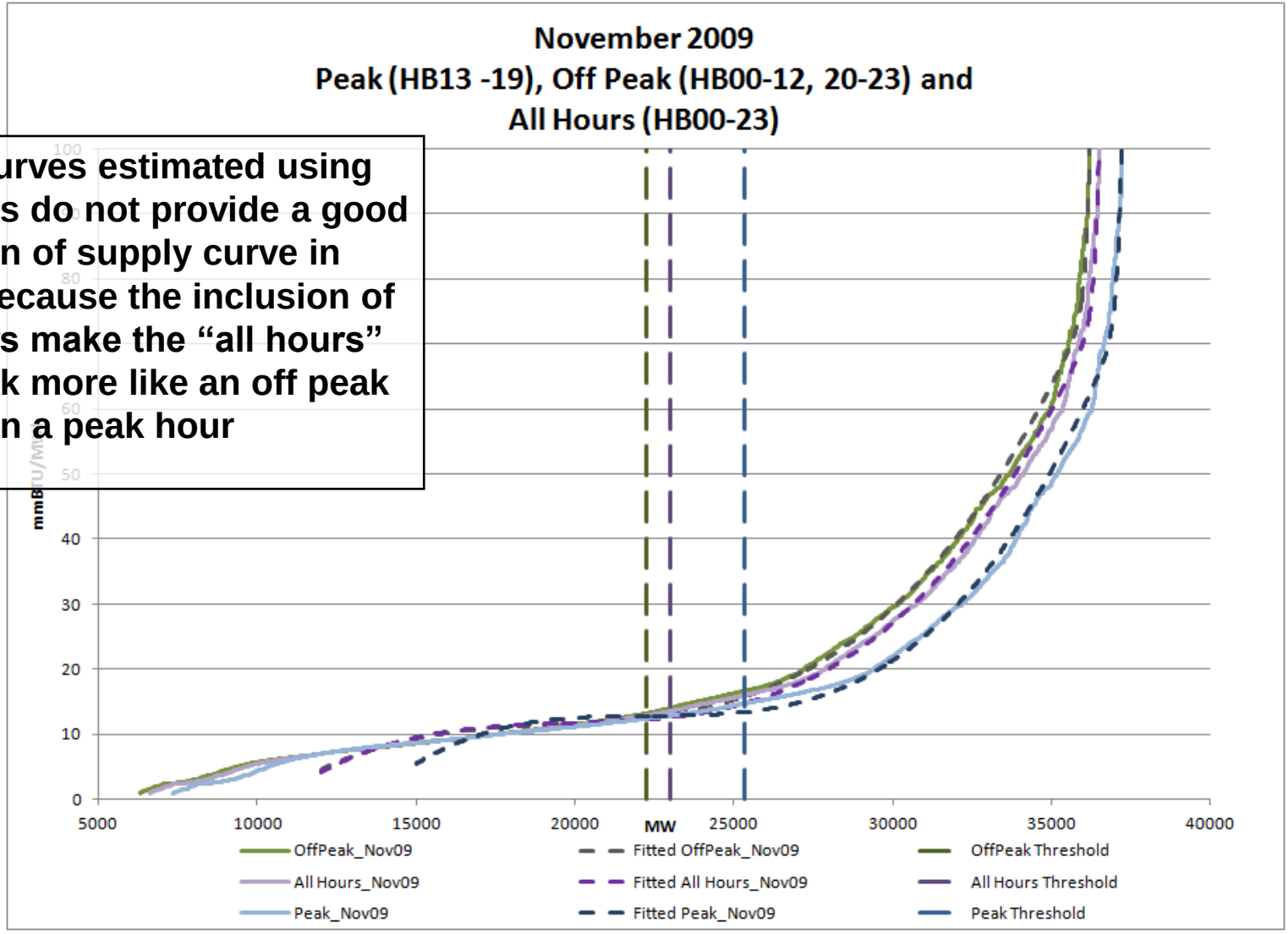
Obligation 1 (Continued)

Supply curves are different in peak and off peak hours and lead to different thresholds:

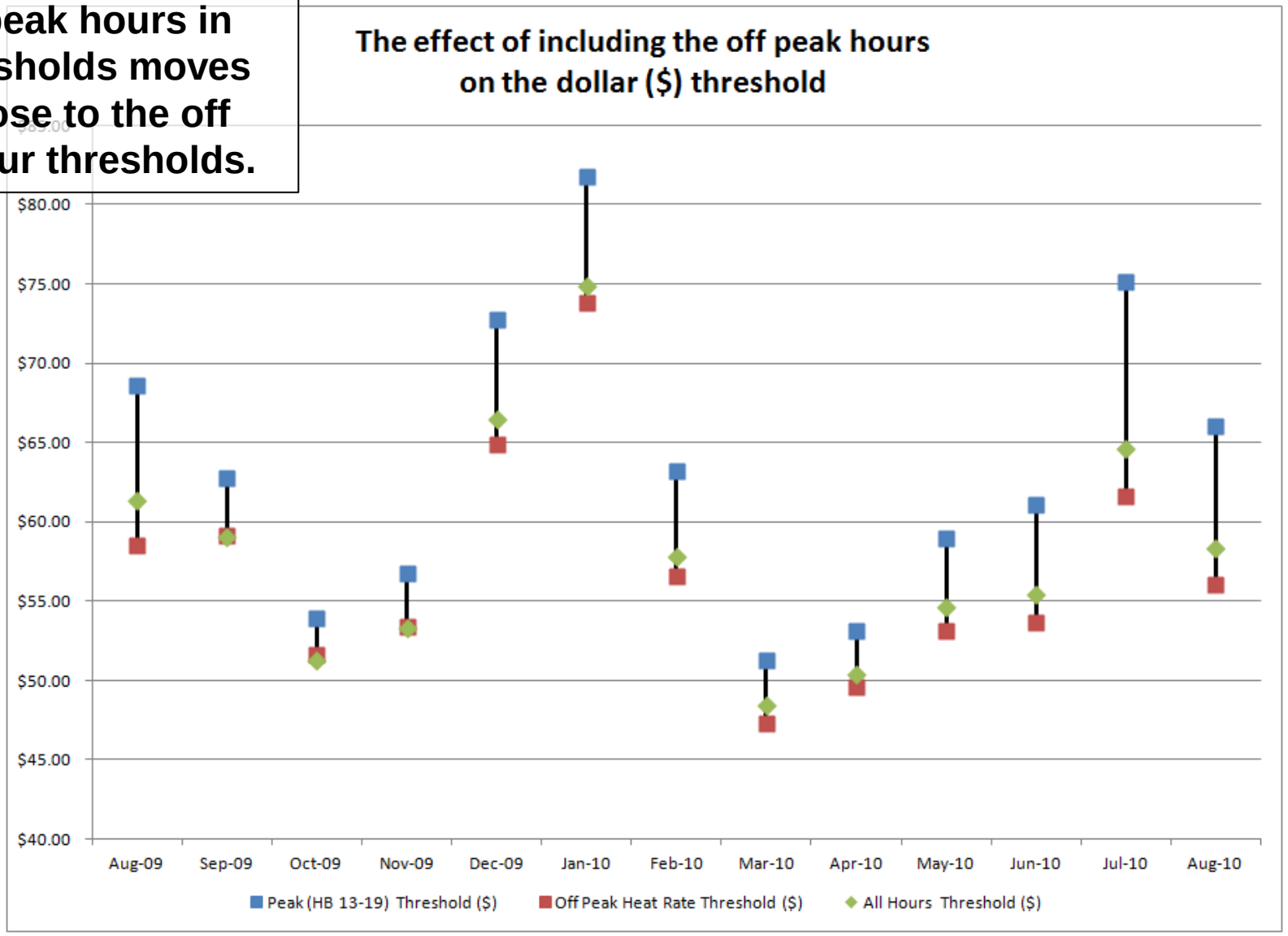


Obligation 1 (Continued)

The supply curves estimated using off peak hours do not provide a good representation of supply curve in peak hours because the inclusion of off peak hours make the "all hours" threshold look more like an off peak threshold than a peak hour threshold.



The effect of including the off peak hours in the thresholds moves them close to the off peak hour thresholds.



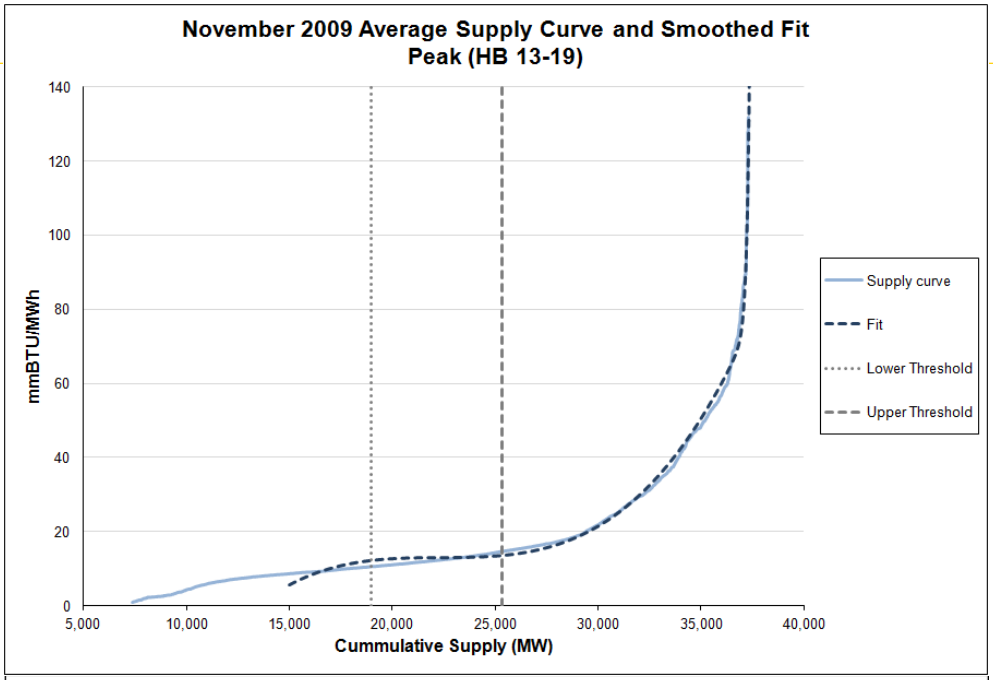
Obligation 1 (Continued)

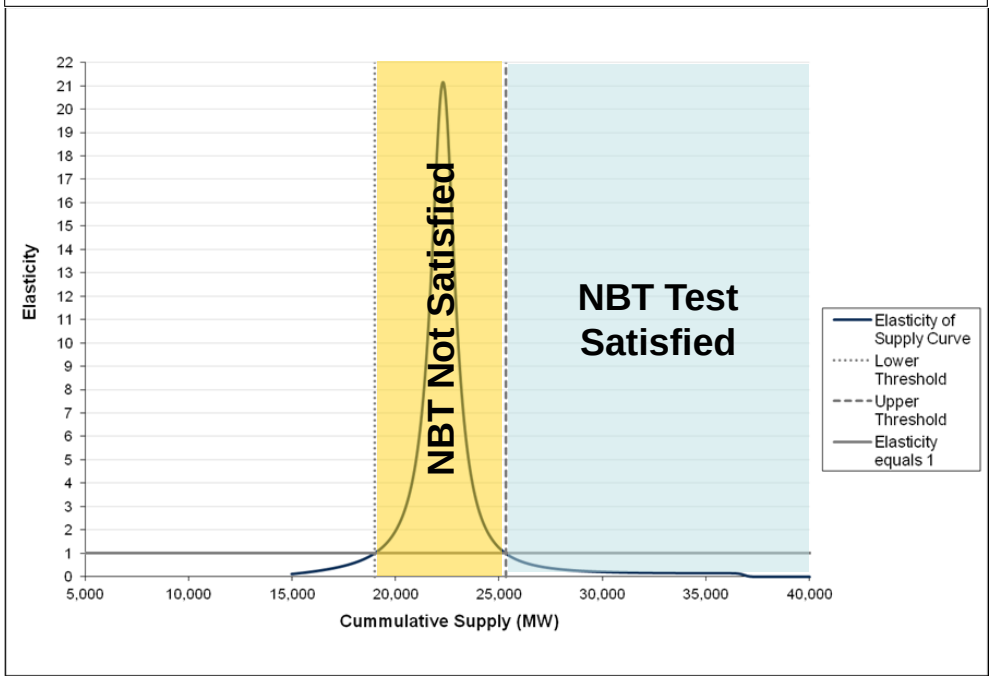
- **It is important to provide an accurate representation of the supply curve in the high load hours:**
  - ***FERC's rationale for paying LMP for demand response is to address market failures that are not present in low load hours where the retail rate exceeds the wholesale price***
  - ***The NYISO's experience has shown that "demand response" in low price/low load hours is likely to be phantom demand response so it is more important to accurately represent the supply curve in the hours in which real demand reductions might occur***

Obligation 2:

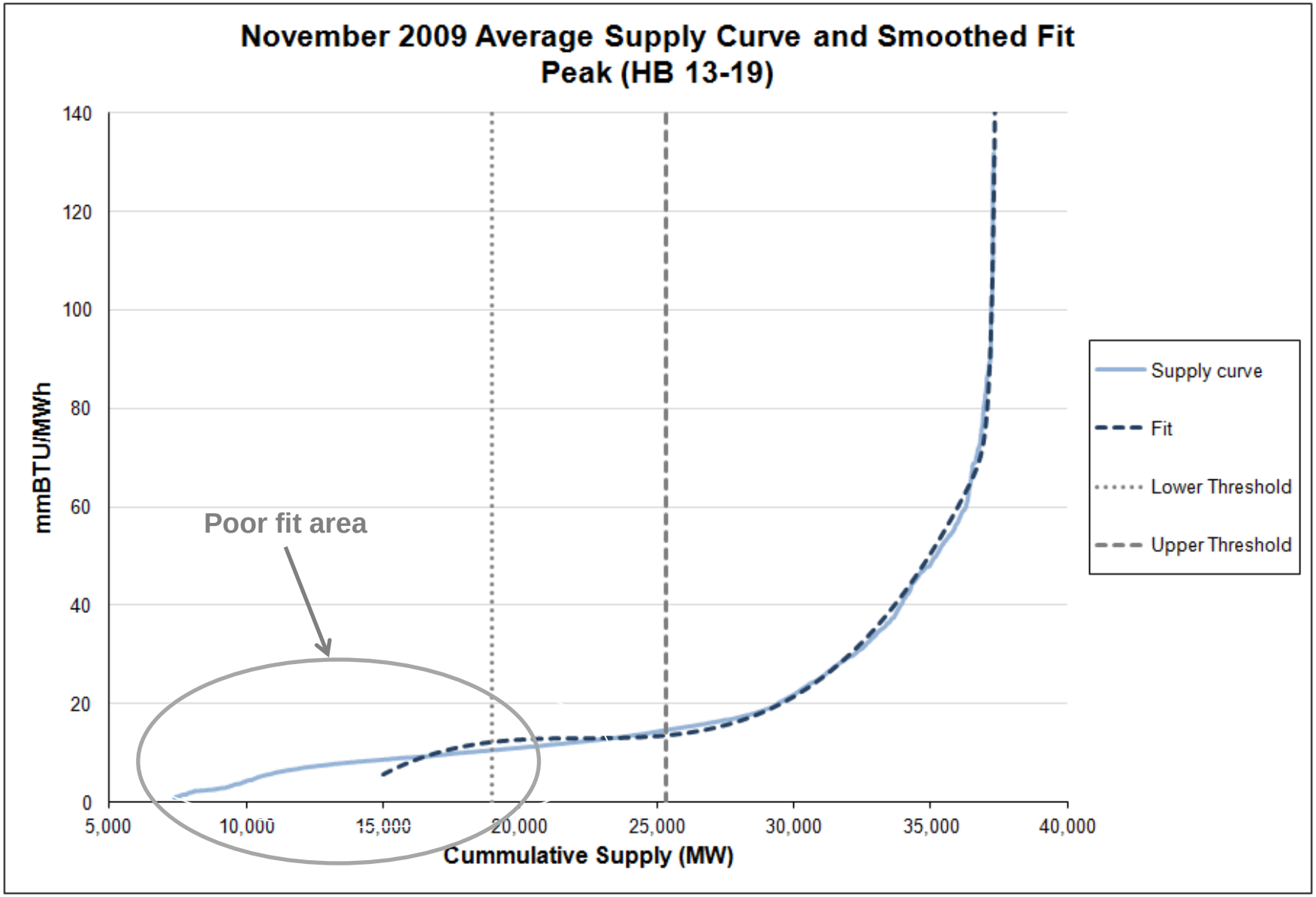
Provide sufficient evidence supporting the selection of the highest point on the representative supply curve as threshold point for NBT (para. 40)

- **The functional form the NYISO proposed to use to estimate the fitted supply curve has the property that there will always be two points with unitary elasticity**
  - ***In the range above the higher point, the fitted supply curve is inelastic and the net benefit test would be satisfied***
  - ***In the range between the two points the fitted supply curve is elastic and the net benefits test would not be satisfied***
  - ***In the range below the lower point the fitted supply curve is inelastic and the net benefits test would be satisfied***
- **Functional form used:**
  - ***Heat Rate = A + B*MW + C*MW2 + D*MW3 + exp(E*MW+F)***
  - ***Constants A, B, C, D, E, and F are parameters that are estimated for each month***





Using the lower threshold as the offer floor will guarantee that the Net Benefits Test is not satisfied in a substantial number of hours.



Obligation 2 (Continued)

- **The fitted supply curve does not provide a very good representation of the actual supply curve in the lower part of the supply curve:**
  - ***In order to develop an estimation methodology that could be applied to all months on an ongoing basis, the NYISO had to find a functional form that would work reasonably well in most months.***
  - ***The NYISO was focused on developing a fitted supply curve that would be reasonably accurate in the relevant high load hour range. The NYISO did not attempt to select an estimation methodology based on how well it fit the supply curve at very low load and price levels at which actual demand reductions are unlikely to occur.***
    - **The smoothed supply curves were not estimated over very low load ranges. Instead, "the lower end of the supply offers used to estimate the smoothed curve will be set equal to lowest real-time integrated hourly NYISO load (as in the reference year)." This methodology enables the smoothed supply curve to provide a better fit at the upper part of the curve but can result in the fit not being as good in the lower portions of the smoothed supply curve, where the smoothed supply curve is much steeper than the actual supply curve.**

Obligation 3: Remove language adjusting NBT

Remove language regarding adjustment of NBT after 15th day of preceding month (paras. 41-42)

4.2.1.9 Day-Ahead Bids from Demand Reduction Providers to Supply Energy from Demand Reductions

… The ISO shall perform the Net Benefits Test and post on its web site the Monthly Net Benefit Offer Floor for each month by the 15th of the preceding month in accordance with ISO Procedures. The Net Benefits Test shall establish the threshold price below which the dispatch of Energy from Demand Side Resources is not cost-effective. The Net Benefits Test shall consist of the following steps: (1) the ISO shall compile hourly supply curves for the Reference Month; (2) the ISO shall develop the average supply curve for the Study Month by updating the Reference Month supply curves for retirements and new entrants, and adjusting offers for changes in fuel prices; (3) the ISO shall apply an appropriate mathematical formula to smooth the average supply curve; and (4) the ISO shall evaluate the smoothed average supply curve to determine the Monthly Net Benefit Floor for the Study Month. The ISO shall apply the Monthly Net Benefit Offer Floor, as so calculated, to Bids submitted by Demand Response Providers for all hours in the Study Month. ~~Following the posting of the Monthly Net Benefit Offer Floor, the ISO shall monitor the gas prices utilized in the Net Benefits Test and recalculate the Monthly Net Benefit Offer Floor in the event that such prices vary by more than $0.75/mm BTU, as measured on the last gas trading day that is no less than 4 business days prior to the first day of the Study Month. The ISO shall post any recalculated Monthly Net Benefit Offer Floor to its website in accordance with ISO Procedures.~~

Obligation 4: Justify Keeping Offer Floor

Justify proposal to keep, but modify existing offer floor for DADRP (paras. 42-46)

- **The offer floor was developed to reduce the opportunistic offers and reduce free-ridership**
  - ***FERC's 2003 order accepting the offer floor for DADRP: "reasonable to limit payment, as an incentive for reducing demand, when supply is ample, relative to demand."***
  - ***The NYISO proposed, and FERC accepted, an increase to the offer floor price in 2004***
    - **NYISO explained that it would further prevent the free-ridership issue that the original offer floor did not fully eliminate and improve net social welfare without unduly restricting a DADRP resource's ability to get accepted in market**
  - ***The DADRP offer floor value has remained static since 2004***
- **NYISO proposed to apply the monthly NBT as the offer floor price, consistent with the intent of the offer floor to allow demand response to reduce price when it is beneficial to the market**

Obligation 4: Justify Keeping Offer Floor (cont.)

- **FERC has accepted the offer floor in other ISOs**
  - ***ISO New England's offer floor in the March 26, 2012 compliance filing***
- **Removal of the offer floor would:**
  - ***Increase costs to consumers***
    - **Order 745 recognized that dispatching DR when prices are below NBT will increase the costs**
  - ***Require the need for additional rules to be developed for DADRP when DR is scheduled below the NBT***
    - **The NYISO does not have existing compensation rules for demand response scheduled below the offer floor**
    - **Order 745 only specifies that DR be compensated at LBMP when it is dispatched at or above NBT**
      - DADRP has paid LBMP to demand response since its inception in 2001

Obligation 5: In-Day Adjustment Cap

Provide justification for in-day adjustment cap for ECBL (para. 68)

- **The in-day adjustment cap has been in place in the energy CBL calculation used by all demand response programs since 2002**
  - ***Implemented to reflect higher loads associated with periods when demand response would be deployed***
- **For Order 745, NYISO proposed a new baseline calculation methodology specifically to address the increased frequency of scheduling expected in the energy market under the NBT.**
  - ***No change was proposed to the in-day adjustment***
- **The design of the proposed ECBL requires the in-day adjustment to be applied to all DADRP resources**
  - ***The 2011 analysis of baseline variations for DADRP with the in-day adjustment applied resulted in less error***
  - ***ECBL showed the lowest Mean Absolute Error***
  - ***Stakeholder comments were discussed, but no empirical evidence of negative impact was provided***

Obligation 5: In-Day Adjustment Cap (cont.)

- **Other ISO baseline methodologies retain a "cap"**
  - ***ISO-NE's adjustment is capped by the maximum load of the resource (or zero for downward adjustments)***
  - ***PJM's adjustment is additive, which limits any adjustment to that additive level.***
- **In-day adjustment cap reduces market exposure to unlimited adjustments and overstated reductions**
- **The current SCR Baseline Study is looking at multiple CBLs, with and without in-day adjustment caps**
  - ***Analysis design provided to Stakeholders in May 2013***
  - ***Study will not be complete in time for the August compliance filing***
  - ***Any changes proposed to CBL methodology, including in-day adjustment cap will be discussed with Stakeholders***

Obligation 6: Alternative CBLs

Justify why alternative CBL methodologies are reasonable to preclude (para. 69)

- NYISO intends to show that it does not preclude and has presented alternative CBL methodologies to its Market Participants
- The NYISO's baselines are designed for the product/service of the demand response program
- NYISO has proposed alternative baseline methodologies in the past and provided stakeholders with opportunities to propose alternatives
  - *In 2000, 2009 and 2010 (later was change to SCR baseline)*
  - *Stakeholders have had opportunities to present alternative baseline methods*
- ECBL was one of four baselines analyzed in 2011 as candidates for a replacement for the DADRP CBL
  - *When NYISO proposed ECBL, no baseline alternatives were proposed by stakeholders*

Obligation 6: Alternative CBLs (cont.)

- **Alternative baselines are being evaluated as part of the KEMA SCR Baseline study underway**
  - ***Analysis design presented to joint ICAPWG and PRLWG on May 22***
  - ***Recommendations expected at the end of 2013***
- **To evaluate alternatives proposed by stakeholders, NYISO will need to establish processes and tools**
  - ***New proposals should adhere to NAESB WEQ-015 criteria***
  - ***NYISO evaluation would ensure the baseline propose is: Comprehensible, Accurate, Flexible and Reproducible***
  - ***Development of tools to automate the evaluation of alternatives to ensure fair, non-discriminatory, and "best-fit" processes***
  - ***Processes would be developed through the NYISO's stakeholder process and incorporated into documentation***

Obligation 7: ISO Procedures

Replace "ISO Procedures" with the actual data reporting requirements. (paras. 70-71)

- **Reviewed requirements currently in place and proposed for Order 745**
- **Researched data reporting requirements needed internally to the NYISO**
- **Researched other ISO/RTO filings/procedures for data reporting requirements**
- **Drafted a consolidated list of new data reporting requirements**
- **New Appendix R Data Reporting Requirements**

Appendix R Data Reporting Requirements

- **Hourly Interval Metering Reporting Requirements**
  - ***Hourly response data for the actual hourly Demand Reduction supplied by the Demand Response Provider for the scheduled period in the format required for reporting to the NYISO's Settlement Data Exchange application (2011)***
  - ***Totalized hourly interval metered load data of the DADRP Resource for all hours on the days of scheduled Demand Reduction (2011)***
  - ***Hourly interval data for all Demand Side Resources that are enrolled as the DADRP resource (all hours of days where the resource/aggregate is scheduled) (2011)***
  - ***All interval load data underlying the ECBL calculations for each scheduled Demand Reduction, including any data required to establish any Weekday Proxy or Weekend Proxy values (2011)***

Appendix R Data Reporting Requirements (cont.)

- **Metering Information for each Demand Side Resource enrolled:**
  - ***As-left meter test criteria, as prescribed in the New York Department of Public Service 16 NYCRR Part 92 Operating Manual***
  - ***Documentation to validate installation of meter equipment***
  - ***Interval Metering installation date***
  - ***Interval Metering installation individual and company***
  - ***Make and Model of Interval Meter***
  - ***Interval Metering accuracy***
  - ***Interval Metering CT and PT Type Designation***
  - ***CT Ratio***
  - ***Pulse Data Recorder Installed (Y/N)***

Appendix R Data Reporting Requirements (cont.)

- **Administrative DADRP/Demand Side Resource Documentation**
  - ***Service address of each Demand Side Resource***
  - ***Load Serving Entity***
  - ***Transmission Owner***
  - ***Meter Authority***
  - ***Individual Demand Side Resource Maximum Winter and Summer Reduction MW***
  - ***Type of Resource based on NYISO-defined categories (Industrial, Light Manufacturing, Education/Other, Hospital/Institutional, Commercial Office, Commercial Other, Multi-family Residential) or based on national standards for business classification***

Appendix R Data Reporting Requirements (cont.)

- **Demand Reduction Providers or their metering authority shall comply with the Settlement reporting requirements of:**
  - ***Section 7.4.1 of the Market Services Tariff for Suppliers***
  - ***Meter Data Management Protocols***
    - **Located on the NYISO Financial Services webpage, under Billing and Settlement**
- **Demand Reduction Providers shall comply with the requirements of Attachment O to the ISO OATT, including but not limited to:**
  - ***Production Costs***
  - ***Opportunity Costs***
  - ***Operational Logs (for outage verification)***
  - ***Bidding Agreements (for Financially Responsible Party or Scheduling Service Provider Agreements)***
  - ***Other Cost and Risk Data Supporting Reference Levels or Going-Forward Costs and any other information necessary to establish a reference price or offer floor for mitigation purposes.***
  - ***Ownership and Control***
  - ***Any additional data, defined in Attachment O to the ISO OATT, which may be requested by the NYISO as deemed necessary to verify the Demand Side Resource's participation in NYISO's energy market***

Appendix R Data Reporting Requirements (cont.)

- **Additional Data which may be requested by the NYISO as deemed necessary to verify participation as a Demand Side Resource in NYISO's energy market or comply with Section 3.4 of the Market Services Tariff**
- **These requirements include, but are not limited to:**
  - ***Historical Load Documentation***
  - ***Load data history for Pre and Post Validation, Edit and Estimation (VEE) load data***
  - ***Historical Load Data (provide a minimum of up to three months hourly interval metering data, as requested, when registering new DADRP resources)***
  - ***New and Existing Metering Documentation***
  - ***Time Check – time clock within +/- two minutes of true time (NIST)***
  - ***Sum Check – the sum of the intervals when compared to the totalized load over the same period must agree within +/- 2%***
  - ***High/Low Check – minimum and maximum expected values for the facility***
  - ***Zero Value Check – identification and verification of hours with "0" values.***

Obligation 8 – Cost Allocation

- Demonstrate why cost allocation via Rate Schedule 1 Uplift satisfies Order 745 requirement that the costs of DADRP are being allocated to the entities purchasing from the relevant energy markets that benefit from the lower prices resulting from the DADRP dispatch (para. 92)
- "Protesters argue, and we agree, that purchasers of NYPA Replacement Power and Expansion Power do not purchase energy in the relevant NYISO energy market." (para. 92)

Obligation 8 – Cost Allocation (cont.)

- **Demonstrating current cost allocation is appropriate**
  - ***The linkage between NBT loads and cost allocations***
  - ***NYPA contracts benefit from the market***
  - ***Tolling order granted on July 16 to the NYISO request for rehearing from June 17***
  - ***NYISO still feels that rehearing of these issues is appropriate***
  - ***NYISO's compliance filing in this docket does not indicate its agreement with the required exclusion of certain bilateral contracts from cost allocation related to Order 745***

Obligation 8 – Cost Allocation (cont.)

- Modification to current cost allocation required by the May 16, 2013 order

- NYISO proposes to exclude load for NYPA customers in the Replacement Power/Expansion Power (now WNY Power) programs

Obligation 8 – Cost Allocation (cont.)

- **Replacement Power/Expansion Power (now WNY Power) programs**
  - ***The NYISO understands these are long term contracts***
  - ***Western New York bilateral transactions are visible to the NYISO through the Market Information System***
  - ***The NYISO can follow these contracts from supply offers made in the market to the point of consumption at the load bus***
- **NYISO proposes to cap the exclusion of load associated with these contracts on an hourly basis to the output of the hydro units associated with the WNY Power contracts**
  - ***Very specific source, where the output is easily tracked on an hour by hour basis***
  - ***The path of the transactions from the hydro units for this program follow a very specific path, which the NYISO can follow***

Obligation 8 – Cost Allocation (cont.)

- **NYISO is not aware of the criteria FERC used to decide that contracts like the NYPA-Oxy Chem contract do not benefit from the relevant markets**
- **The NYISO has found that other NYPA bilateral contracts may not be as easy to follow or the level of clarity is not available**
  - ***NYISO is not aware of contractual details***
  - ***The contracts may not be served by a discrete source***
  - ***NYISO would have difficulty following the contracts from offer through consumption***

Obligation 8 – Cost Allocation (cont.)

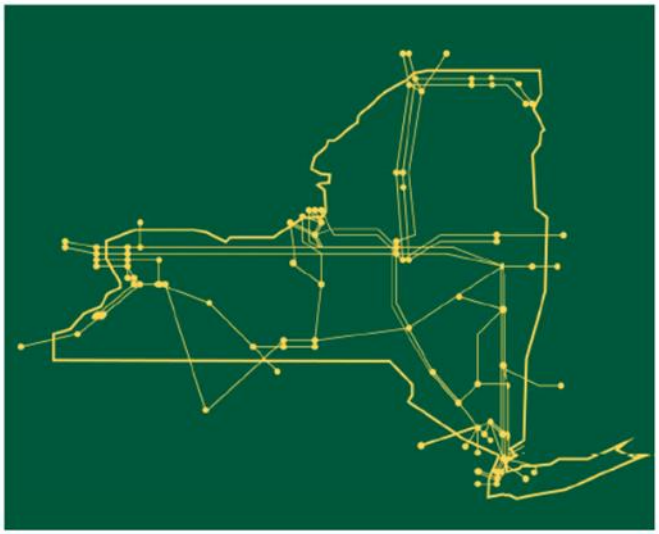
- **NYISO proposes additional revisions to cost allocation to further allocate costs to loads in the relevant market**
  - ***Costs will be allocated on an hourly load ratio share instead of daily load ratio share***
    - **Consistent with the cost allocation methodology for other demand response program costs**
  - ***Costs will be allocated to a zone when the zonal LBMP is equal to or greater than the Net Benefit Offer Threshold***

Next Steps

- ***File the compliance filing with FERC on August 14, 2013***

Questions

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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