Manual 05

NYISO Day-Ahead Demand Response Program Manual

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Revision History

Version	Date	Revisions
1.0	05/24/2001	Initial Release
2.0	03/13/2002	Section 2.1 ➢ Delay opening the program to DRPs until late 2002. Section 2.16 ➢ LSE/DRPs must participate in NYISO sponsored DADRP program evaluations, removal of Bid Slot Award Methodology. Section 3,0 ➢ New Registration website links. Section 4.0 ➢ Updated Bidding Instructions - $50/MWhr Bid Floor. Section 5.0 ➢ New CBL Calculations Section 6.6 ➢ Verifications, Errors and Fraud. Section 9.0 ➢ Updated Cost Allocation percentages of time when specific interfaces were constrained. Attachments A and B ➢ Updated registration forms to reflect the changes above, and a requirement to enter in Attachment B the bus or substation name where DSR will be modelled.
3.0	07/25/2003	Following changes have been made: ➢ Allow DRPs to offer DADRP to the customers of other LSEs. ➢ Exclusion of Local Generation from DADRP. ➢ Elimination of the 110 % penalty. Deviations from Day Ahead schedules are now settled at the higher of day ahead or real time LBMP. ➢ Registration requirements changed to accommodate DRPs. ➢ Introduced credit requirements for DADRP participants. ➢ Revised cost allocation factors based on 2002 historical congestion.
4.0	MM/DD/YYYY	Comprehensive updates on account of: ➢ Replacing redundant language with tariff and manual references.

		➢ FERC Order No. 745 related changes. ➢ Incorporating TB 237 into the DADRP Manual.

1. Definitions and Acronyms

1.1. Tariff Definitions

The following defined terms used in this manual can be found in the NYISO Market Administration and Control Area Services Tariff (Services Tariff) Section 2, available from the NYISO Web site at

http://www.nyiso.com/public/markets_operations/documents/tariffs/index.jsp

Defined terms used in this Manual are as follows:

Definitions – B

Bid
Bid Price
Bid Production Cost
Bidder

Definitions – C

Curtailment Initiation Cost
Customer

Definitions – D

Day-Ahead
Day-Ahead LBMP
Demand Reduction
Demand Reduction Incentive Payment
Demand Reduction Provider
Demand Side Resources (“DSR”)

Definitions – E

Emergency Demand Response Program (“EDRP”)

Definitions – I

Installed Capacity (“ICAP”)

Definitions – L

Load Serving Entity ("LSE")
Load Zone
Local Generator
Locational Based Marginal Pricing (“LBMP”)

Definitions – M

Monthly Net Benefit Offer Floor

Definitions – N

New York Control Area ("NYCA")

Definitions – R

Real-Time LBMP

Definitions – S

Special Case Resource ("SCR")

Supplier

1.2. Additional Terms Relevant to the Day-Ahead Demand Response Program

Economic Customer Baseline Load ("ECBL") – Average hourly energy consumption as calculated in accordance with Section 24.2 of the NYISO's Open Access Transmission Tariff (OATT) used to determine the level of load curtailment provided.

Meter Service Provider ("MSP") - An entity that provides meter services, consisting of the installation, maintenance, testing and removal of meters and related equipment.

Meter Data Service Provider ("MDSP") – An entity providing meter data services, consisting of meter reading, meter data translation and customer association, validation, editing and estimation.

2. Day-Ahead Demand Response Program - Introduction

The NYISO's Day-Ahead Demand Response Program ("DADRP") allows NYCA Loads to offer their demand reduction in the Day-Ahead Market to supply Energy. This enables flexible Loads to effectively increase the amount of supply in the market and moderate Energy prices. This DADRP Manual focuses on describing the mechanisms that enable the participation, measurement, payments and cost allocation in this program.

The NYISO Day-Ahead Demand Response Manual consists of 7 Sections:

- Section 1: Definitions and Acronyms
- Section 2: Day-Ahead Demand Response Program - Introduction
- Section 3: DADRP Registration Procedures
- Section 4: DADRP Bidding
- Section 5: Reporting and Verifying Economic Customer Baseline Load and Meter Data
- Section 6: Payments
- Section 7: DADRP Cost Allocation

2.1. References

The references to other documents that provide background or additional detail directly related to the NYISO Day-Ahead Demand Response Program Manual are:

- New York ISO Tariffs
- NYISO Accounting & Billing Manual
- NYISO Market Participant User's Guide

3. DADRP Registration Procedures

A Demand Reduction Provider ("DRP") is a NYISO customer that has completed the DADRP Provider Registration Packet and has been approved by NYISO Member Relations to particiapte in the NYISO-administered markets. The DRP enrolls and registers the DADRP resources and is the NYISO point-of-contact for these resouces. Additionally, the DRP is responsible for the performance of, and all market obligations related to that DADRP Resource. This includes scheduling the resources in the Day-Ahead Energy Market, coordinating with the resources to ensure that they perform the scheduled amount of demand reduction and settling with NYISO any financial transactions related to these demand reductions.

Registration for the DADRP is completed in two separate steps. Applicants must initially register to qualify as a DADRP Provider for which they need to complete and submit the signed, single-sided original DADRP Provider Registration Packet along with the Communication and Data Management Plan. Once approved as a DADRP Provider, the Applicant must register the Demand Side Resource(s) for the DADRP by completing and submitting the signed, single-sided original DADRP Resource Registration Packet.

Both of these documents can be obtained on the NYISO website under http://www.nyiso.com/public/markets_operations/market_data/demand_response/index.jsp

3.1. Local Generators

For each Demand Side Resource with a Local Generator, the DRP is required to provide the following Local Generator information for participation in the DADRP via the DADRP Resource Registration Packet.

- **Generator Type**
  - Internal Combustion Engine
  - Combustion Turbines
  - Steam Engines and Cogeneration units (including Combined Heat and Power units)
  - Others – must specify supply source if not provided in the list above
- **Generator Fuel Type (Primary Fuel used)**

- Coal
- Diesel
- Natural Gas
- Oil
- Gasoline
- Kerosene
- Propane
- Wood
- Landfill Gases and Waste Products
- Other, must specify fuel type

- **Generator Specifications**
  - Manufacturer name
  - Model number
  - Generator Nameplate Capacity, kW nominal name plate
  - Generator Engine Horsepower, if applicable
  - Year generator was built, as stated on nameplate
    - If generator was retrofitted for emission control equipment, specify year of retrofit
  - Generator Location (the physical address of the Local Generator)
- **Local Generator Regulatory Compliance Requirements**

Local Generators operated by Demand Side Resources to facilitate Demand Reduction in the DADRP must possess a valid permit from the New York State Department of Environmental Conservation ("NYSDEC") authorizing the Local Generator to operate during non-emergency conditions.[1]

The DRP must submit NYSDEC permits to the NYISO upon request. By enrolling a Demand Side Resource in the DADRP (and continuing the Resource's enrollment in subsequent months), the Market Participant represents that the Local Generator complies with all applicable permits, including any emissions, run-time limits, or other constraints on the plant operation that be imposed by federal, state, or local laws and regulatory requirements, required to reduce Load from the New York State Transmission System and/or distribution system at the direction of the NYISO.

3.2. Historical Operating Data

DRP shall be required to provide historical operating data for each Demand Side Resource upon acceptance for participation in the DADRP. These requirements may be met by:

[1] The Local Generator must have a valid NYSDEC Title V Federal Air Permit or NYSDEC Air State Facility Permit or NYSDEC Minor Facility Registration.

For loads with existing interval meters:

1) Provide the most recent complete billing period of hourly interval data.

For totalized loads with existing interval meters:

2) For totalized loads, provide hourly interval data for one complete billing period of hourly interval data for all participating loads at the premise; or

For newly installed load interval meters:

3) For newly installed interval meters, provide the prior three month's summary of monthly MWh consumption and demand values, if available.

3.3. Credit Requirements for DADRP

For participation in the DADRP, the DRP will need to adhere to the credit requirements specified in Section 26.4.2.7 of the Attachment K of the Services Tariff.

3.4. Small Customer Aggregation

Demand Side Resources that do not meet the metering requirements specified in Section 5.1 of this Manual but meet the requirements specified below can participate in the DADRP in Small Customer Aggregations. Small Customer Aggregations can participate in the DADRP subject to the following requirements:

1. DADRP Small Customer Aggregations must be at least 2.0 MW, and each Aggregation's capability will be certified during the NYISO's approval of the Aggregation's measurement and verification methodology. The NYISO will assign an initial (a priori deemed) estimate of the response per site in order to derive the sample size via the DRP's sampling plan or other measurement methodology. The aggregation can be comprised of two or more different sampling methods, provided that the aggregation is approved by the NYISO. Small Customer Aggregations can propose to meet the 2 MW minimum size combining DADRP Resources enrolled by different Market Participants (DRPs or LSEs) provided that the Market Participants agree to combine all participants in a single Small Customer Aggregation.
2. Market Participants (the aggregator) are responsible for payments to and penalties levied against the members of the aggregation. The NYISO will require that each member of the aggregation execute an agreement to participate in the aggregation and indicating that it accepts the NYISO DADRP program rules and authorizes the LSE/DRP to act as its representative for the purposes of participation
3. Proposals for measuring aggregation performance can involve one of several methods:
    a. The deployment of approved whole-premise kW metering devices on a sample of participants.
    b. The deployment of approved end-use device or process kW metering devices on a sample of participants that elect to limit DADRP program participation to specified end-use devices or processes.

c. Provision for supplying verifiable behavioral actions, equipment operating logs, or other data that is deemed to be sufficiently indicative of the load level the customer otherwise would have consumed, but for the DADRP program event participation

d. Other measurement systems that indicate the load level the customer otherwise would have consumed, but for the DADRP program event participation

4. Promulgate provisions that govern applications. A process and procedures will be developed to govern how Small Customer Aggregation applications are made, processed and approved, and to set limits to aggregation projects by Load zone, provider, program, or any other category. The number of aggregations allowed needs to accommodate all of the utilities plus a reasonable number of DRPs and LSEs. Each proposal for Small Customer Aggregation will be reviewed by the NYISO staff and the Price Responsive Load Working Group, and must be approved by a majority of the Chairs and Vice-Chairs of the Management Committee and Business Issues Committee and the Chairman of the Price Responsive Load Working Group.

5. The Market Participant is responsible for all costs associated with developing and administering the alternative performance methodology. Applications for approval of alternative methodologies must include an explicit description of the methodology and how it would be tracked and administered, accompanied by the specific administration processes required. The NYISO, in approving an application, will specify the costs associated with administration that the applicant must bear. The aggregation applicant must agree to be responsible for all such costs, including costs incurred by the NYISO for developing and administrating the alternative methodology. The NYISO may, at its discretion, require that some or all of such cost be reimbursed by the applicant upon approval of the methodology, or deduct all costs from payments for curtailments by participants, or a combination of the two methods of cost recovery.

6. One method per end-use premise. End-use electricity customers may subscribe load at a given premise to the DADRP only under a single performance methodology, either the standard method or an approved alternative methodology.

Failure to comply with aggregation procedures. The NYISO may, at any time, terminate its agreement with a Market Participant if it determines that the Market Participant is not fulfilling its obligation under the aggregation agreement. Customers belonging to such aggregation may henceforth participate by signing up under any approved means of participation.

3.5. Participation in other NYISO Demand Response Programs

Demand Side Resources in the NYISO market may participate in one reliability-based program and one economic-based program simultaneously. A DADRP resource may therefore additionally chose to participate in one out of the two reliability-based programs that the NYISO offers – the SCR program or the EDRP.

4. DADRP Bidding

4.1. LSE Bids

When bidding as a DRP the LSE must place two separate bids into the MIS System. The first bid is its normal load bid that it would submit regardless of whether or not the LSE is a DRP. In addition to its normal load bid the same LSE must also submit a Demand Reduction Bid for the amount that the LSE is willing to curtail. Detailed instructions on submitting LSE load bids can be found in Section 7 of the NYISO's Market Participant User's Guide.

4.2. DRP Bids

A DRP is not required to submit a load bid into the MIS – this is the responsibility of the LSE who serves the Demand Side Resource. The DRP must submit a Demand Reduction Bid for the amount of load curtailment desired to be scheduled in the DAM. The Demand Reduction Bid must be at least 1 MW from Demand Side Resources that are represented by a point identified (PTID) and is assigned to a Load Zone and one LSE.

The following Table lists the Bid parameters that would be available to a DADRP resource.

DADRP Bid Parameters
Minimum Shutdown Time (hrs)
Shutdown Cost ($)
Maximum Demand Reduction (MW)
Minimum Demand Reduction (MW)
Minimum Demand Reduction Cost ($)

Detailed instructions for submitting DADRP Bids into the NYISO's Energy Market are in Section 7 of the NYISO's Market Participant User's Guide.

4.3. Monthly Net Benefit Offer Floor

The NYISO shall perform the Net Benefits Test for each month in accordance with Section 4.2 of the Services Tariff and post the Monthly Net Benefit Offer Floor by the 15th of the preceding month on its web site under

http://www.nyiso.com/public/markets_operations/market_data/demand_response/index.jsp

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. A detailed stepwise description of the Net Benefits Test can be found on the NYISO website under

http://www.nyiso.com/public/markets_operations/market_data/demand_response/index.jsp

A Demand Reduction Bid for an individual hour must have a bid price that is at or above the NYISO determined Monthly Net Benefit Offer Floor for every block of load bid for curtailment in accordance with Section 4.2.1 of the Services Tariff. The load- weighted average bid price for bids that include curtailment production cost guarantees or minimum run times must be equal to or greater than the Monthly Net Benefit Offer Floor. Bids submitted below the Monthly Net Benefit Offer Floor will be rejected from the MIS.

4.4. SCUC & Setting LBMP

Day-Ahead Market's SCUC will consider whether accepting Demand Reduction Bids will reduce the total bid production cost in accordance with section 4.2.3 of the Services Tariff. Demand Reduction Bids accepted by the SCUC can set Day-Ahead LBMP just as a comparably bid Generator in accordance with section 17.1.3 of the Services Tariff.

5. Reporting and Verifying Economic Customer Baseline Load and Meter Data

5.1. Metering Requirements

DRPs are responsible to provide the appropriate metering infrastructure for the Demand Side Resource it has enrolled to participate in the DADRP.

For Demand Side Resources, a Net Load Meter is required for participation in the DADRP. For Demand Side Resources that have a Local Generator, both a Net Load Meter and Local Generator Meter are required for participation in the DADRP.

- Net Load Meter: A New York Public Service Commission ("NYSPSC")-approved revenue-grade hourly interval meter that measures the net Load of the Demand Side Resource. This net Load meter data must be used by the NYSPSC-approved Meter Data Service Provider for the purposes of calculating the Economic Customer Baseline Load ("ECBL") and for submitting data to the NYISO for settlement purposes.
- Local Generator Meter: An hourly interval meter that measures the total output of the Local Generator of the Demand Side Resource within a 2% accuracy threshold. This metering data will be required for all Demand Side Resources that are enrolled in the DADRP and have a Local Generator, regardless of whether the resource plans at the time of enrollment to operate its Local Generator to provide Demand Reduction in the DADRP. The NYISO will use this Local Generator meter data solely for monitoring purposes. The metering accuracy shall be in accordance with requirements of the "as-left meter test criteria," described in the New York Department of Public Service 16 NYCRR Part 92 Operating Manual
- The DRP is required to maintain meter installation documentation and must submit that information to the NYISO upon request. Detailed information on the documentation required may be found in Section 24.4 of the Attachment R of the NYISO OATT; DRPs should be able to provide, at a minimum:
    - Interval Metering installation date
    - Interval Metering installation individual and company
        - Name, license number, and company information
    - Meter Equipment Type
        - Make and Model of Interval Meter
        - Interval Metering accuracy
        - For CTs or PTs: Type Designation and Ratio.

5.2. Economic Customer Baseline Load

The DRP is required to use the Economic Customer Baseline Load ("ECBL") to establish a Customer Baseline in accordance with Section 24.2 of the OATT against which actual

metered usage is compared in order to measure demand reduction. The NYISO shall employ two different calculation methodologies of the ECBL for scheduled Demand Reductions, depending on whether the Demand Reduction is scheduled on a weekday or a weekend.

5.3. Performance

Performance for interruptible loads is measured as the difference between the ECBL and the actual metered usage by hour during the period when demand reduction is scheduled. For those DADRP resources that do not have a Local Generator, the DRP is required to submit only –the ECBL to the NYISO,

A resource with a Local Generator is required to report an additional CBL for Local Generator through its DRP. A resource with a Local Generator shall therefore report:

- ECBL calculated at the facility's net meter for Energy Payments, as discussed above.
  - Performance for a Demand Side Resource with a Local Generator is measured as the difference between the ECBL calculated at the facility's net meter and metered usage at the same meter.
- CBL for Local Generator – Incremental Output – used solely for monitoring purposes
  - Not required for Demand Side Resources without Local Generators
  - This is used to determine the baseline for the incremental output of the Local Generator.
  - The incremental output of the Local Generator is the difference between the Local Generator's metered output and the CBL of that Local Generator.
  - The data is used by the NYISO solely for monitoring purposes, not used for billing purposes.
  - The meter data used to determine the Local Generator CBL must come from the Local Generator output meter only.
  - The CBL for the Local Generator is calculated using the following procedure:
    - Sum the Local Generator output (in MWh) for each day over a 10 weekday period, and excluding days where the Demand Side Resource curtailed Load in response to a NYISO direction in the EDRP/SCR Program or DADRP
    - Select the 5 days out of the 10 days selected above with the lowest values of daily Local Generator output
    - Calculate the CBL for each hour as the average of the five hourly MWh's corresponding with the scheduled hours

5.4. Data Submission

The DRP must submit to the ISO the information for each Demand Side Resource that it

has enrolled either as an individual DADRP resource or with other Demand Side Resources as part of a single, aggregated DADRP resource in accordance with Section 24.4 of the OATT. The DRP must submit this information for the purpose of enrolling, registering, making settlements, and verifying the participation of each Demand Side Resource in the ISO's Energy market. This includes information regarding each of the Demand Side Resource's interval meters, description of Local Generators and data from the Meter Authority or Meter Data Service Provider of the DRP to verify the scheduled reduction of DADRP resources.

The NYISO may also require the DRP to report additional data for each DADRP resource it enrolls in the DADRP in accordance with Section 24.4 of the OATT.

5.5. Verification, Errors and Frauds

Demand Reduction calculated using the Economic Customer Baseline Load methodology is subject to verification by the NYISO. The DRP shall report the data at the time and in the format required by the NYISO as per Section 24.4 of the OATT. Failure to report the required data may result in penalties. Further, if the NYISO determines through an audit that it has made an erroneous payment to a DRP, it shall have the right to recover the erroneous payment either by reducing other payments to that DRP or by any other lawful means.

6. Payments

Each DRP that bids a Demand Reduction into the Day-Ahead Market and is scheduled to provide Energy through Demand Reduction receives a Demand Reduction Incentive Payment in accordance with Section 4.2 of the Services Tariff.

If the actual curtailment is lower than the scheduled curtailment, DRP and the LSE will be charged for the difference in the schedule and the actual performance in accordance with Section 4.5 of the Services Tariff.

For each DRP that bids a Demand Reduction into the Day Ahead Market and is scheduled to provide Energy from the Demand Reduction, the LSE providing Energy service to the Demand Side Resource that accounts for the Demand Reduction is paid in accordance with Section 4.2 of the Services Tariff. Additionally, the LSE incurs a balancing charge in accordance with Section 4.5 of the Services Tariff. This balancing charge in effect cancels out the excess in the true-up amount that the LSE would collect on account of its actual Real-Time load being lower than the Day-Ahead Load purchased.

7. DADRP Cost Allocation

The costs incurred by the NYISO on account of paying scheduled and verified demand reductions from DRP is recovered from NYCA loads that are deemed to have benefited from the demand reductions. The cost allocation in accordance with Section 24.1 in Attachment R of the NYISO's Open Access Transmission Tariff involves the use of eight coefficients that are based on the fraction of time the following three most frequently constrained interfaces in New York Control Area face congestion:

1. The "Central-East" interface, which divides western from eastern New York State.
2. The Sprainbrook-Dunwoodie interface, which divides New York City and Long Island from the rest of New York State
3. The Consolidated Edison Company ("ConEd") - Long Island interface (including the Y49/Y50 lines), which divides New York City from Long Island

The description and current values of these eight coefficients is presented below:

Coefficient	Description	Value
a1	Fraction of time when no constraints exist	0.402
a2	Fraction of time when Central East interface alone is constraining	0.083
a3	Fraction of time when Sprainbrook-Dunwoodie interface alone is constraining	0.184
a4	Fraction of time when Con Ed-Long Island (including the Y49/Y50 lines) interfaces are constraining, but Central East and Sprainbrook-Dunwoodie interfaces are not constraining	0.085
a5	Fraction of time when Central East and Sprainbrook-Dunwoodie interfaces are constraining	0.042
a6	Fraction of time when Central East, Con Ed-Long Island interfaces (including the Y49/Y50 lines) are constraining	0.096

a7	Fraction of time when Sprainbrook-Dunwoodie, Con Ed-Long Island interfaces (including the Y49/Y50 lines) are constraining	0.053
a8	Fraction of time when Central East, Sprainbrook-Dunwoodie, Con Ed-Long Island interfaces (including the Y49/Y50 lines) are constraining	0.055