Demand Response Settlements

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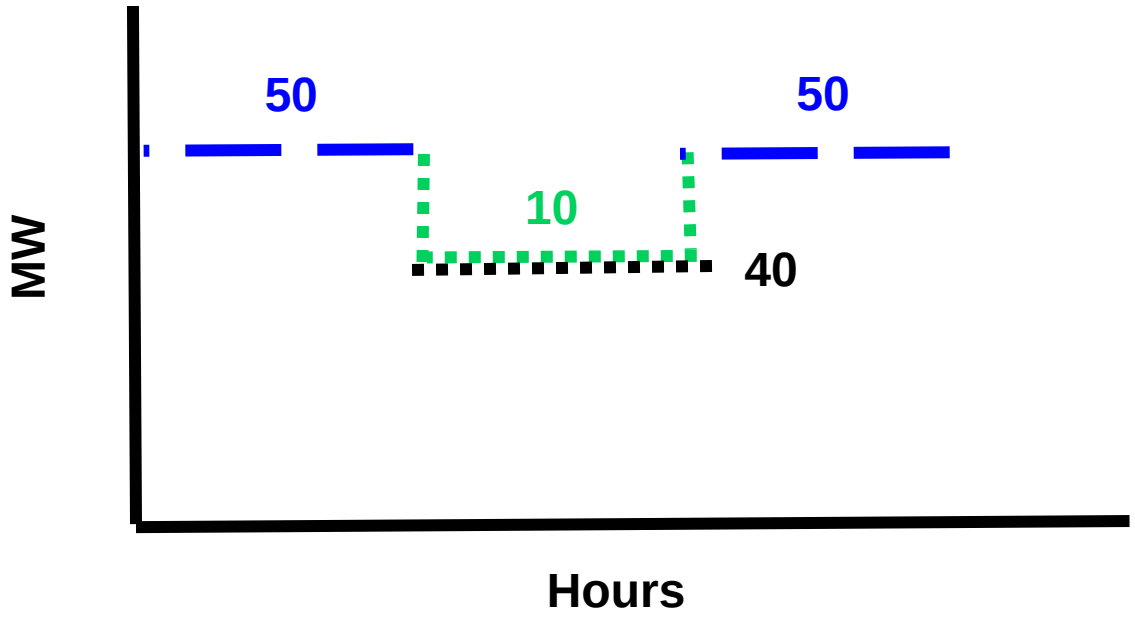
Accounting & Billing Workshop

December 9 - 13, 2024
Remote Learning

What is Demand Response?



Typical Output vs. Curtailable Load

(consumption MW) *(reduction MW)*

Categories of Demand Response Programs

1. Reliability-Based Programs
   - ***Purpose:*** *provide load reductions in response to NYISO Operations' instructions for a discrete period of time to supplement generation when Operating Reserves are forecast to be short or when there is an actual Operating Reserve Deficiency or other system emergency*
   - *Event driven*
   - *NYISO determines activation*
     - Emergency Demand Response Program (EDRP)
     - ICAP-Special Case Resources (SCR)

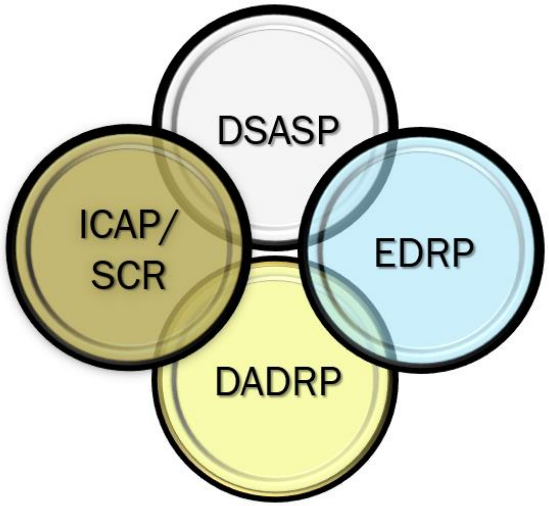
Categories of Demand Response Programs

2. Economic-Based Programs

- ***Purpose:*** *load reduction, competing with generation, is scheduled by NYISO based upon economic offers*
- *Market driven / Not event driven*
- *Resource determines when to participate (through supply offers)*
  - Day-Ahead Demand Response Program (DADRP)
  - Demand-Side Ancillary Service Program (DSASP)

Demand Response Settlements

- **Reliability-based Program Settlement Name:**
  - Emergency Demand Response (EDRP)
  - Special Case Resource (SCR)
    - SCR BCG
- **Economic-based Program Settlement Name:**
  - Day Ahead Demand Response Program (DADRP) – *see appendix
  - Demand Side Ancillary Services Program (DSASP)
    - Reserves
      - DAM Reserve
      - Balancing Reserve
      - Supplemental
    - Regulation
- **OATT Rate Schedule 1**
  - Applies to SCR, EDRP, and DADRP



Demand Response Settlements

- **Objectives Per Settlement Name:**
  - Provide Settlement Description
  - Identify Settlement Eligibility
  - Name Settlement Determinants
  - Name Settlement Intermediates
  - Explain Settlement Algorithm
  - Step Through Settlement Scenario
  - Perform Settlement Example
  - Note Settlement Reference Material

Emergency Demand Response

- **Emergency Demand Response (EDRP) Settlement Description**
  - Intended to pay Emergency Demand Response Providers a Reduction Settlement for responding to the deployment of the Emergency Demand Response Program.

Emergency Demand Response

- **Settlement Eligibility**
  - Demand Response Providers will receive an EDRP Reduction Payment if:
    - EDRP is deployed
    - Provider participates in EDRP
      - Causes a verified demand reduction

Note:
Payment is established for eligibility period (as described in MST 22 Attachment G)

****Payment Eligibility Period is Minimum of 4 Hours*****

Emergency Demand Response

- **Settlement Determinants**
  - Interval Start Hour (Eastern)

Emergency Demand Response

- **Settlement Intermediates**
  - Hr EDRP Reduction (MWh)

- **Settlement Results**
  - Hr EDRP StImnt ($)

EDRP – StImnt Algorithm

Program Deployment Duration Hrs.	Applicable Hours	Interim Calc	Hr EDRP StImnt ($)
≤ 2 Hrs. (Starts at top of Hr.)	1st 2 Hrs	**Step 1)** Hr EDRP Reduction (MWh) * Max {$500/MWh, RTD Zonal LBMP}	**(Step 1) + (Step 2)**
	Next 2 Hrs	**Step 2)** Hr EDRP Reduction (MWh) * RTD Zonal LBMP	
≤ 2 Hrs. (Starts after top of Hr.)	1st 3 Hrs	**Step 1)** Hr EDRP Reduction (MWh) * Max {$500/MWh, RTD Zonal LBMP}	**(Step 1) + (Step 2)**
	Remaining Hrs	**Step 2)** Hr EDRP Reduction (MWh) * RTD Zonal LBMP	
> 2 and ≤ 3	1st 3 Hrs	**Step 1)** Hr EDRP Reduction (MWh) * Max {$500/MWh, RTD Zonal LBMP}	**(Step 1) + (Step 2)**
	Remaining Hrs	**Step 2)** Hr EDRP Reduction (MWh) * RTD Zonal LBMP	
> 3	All Hrs	N/A	**Hr EDRP Reduction (MW) * Max {$500/MWh, RTD Zonal LBMP}**

Emergency Demand Response

- **Summary**
  - Intended to pay Emergency Demand Response Providers a Reduction Settlement for responding to the deployment of the Emergency Demand Response Program.

Emergency Demand Response

- **Settlement Reference Material**
  - MST Section 22
    - Attachment G
  - Accounting and Billing Manual Section 4.5
  - Advisory Billing File
    - Demand Response
      - EDRP Demand Response Reduction MWHr
      - EDRP Demand Response Credit $
    - Hourly Bill Code 2020 & 2021
    - Daily Bill Code 2025 & 2026

Demand Response Settlements

- **Reliability-based Program Settlement Name:**
  - Emergency Demand Response (EDRP)
  - Special Case Resource (SCR)
    - SCR BCG
- **Economic-based Program Settlement Name:**
  - Day Ahead Demand Response Program (DADRP)
  - Demand Side Ancillary Services Program (DSASP)
    - Reserves
    - Regulation
- **OATT Rate Schedule 1**
  - Applies to SCR, EDRP, and DADRP

Special Case Resources

- **Special Case Resources (SCR) Settlement Description**
  - Intended to pay Demand Response Providers a Reduction Settlement for responding to the deployment of the Special Case Resource Program.

Special Case Resources

- **Settlement Eligibility**
  - Demand Response Providers will receive an SCR Reduction Payment if:
    - SCR is deployed
    - Provider participates in SCR
      - Causes a verified demand reduction

Special Case Resources

- **Settlement Determinants**
  - Interval Start Hour (Eastern)

Special Case Resources

- **Settlement Intermediates**
  - Hr SCR Reduction (MWh)

- **Settlement Results**
  - Hr SCR StImnt ($)

Special Case Resources

- ## Settlement Algorithm

Hr SCR Stlmnt ($) =
Hr SCR Reduction (MWh) * RTD Zonal LBMP

Where:
Payment is established for eligibility period (as described in MST 5 Section 5.12.11)

****Payment Eligibility Period is Minimum of 4 Hours*****

Special Case Resources

- **Summary**
  - Intended to pay Demand Response Providers a Reduction Settlement for responding to the deployment of the Special Case Resource Program.

Special Case Resources BCG

- **Special Case Resources (SCR) Bid Cost Guarantee (BCG) Settlement Description**
  - Intended to recover a Demand Response Providers Minimum Payment Nomination not recovered through Real Time LBMP Revenues.

Special Case Resources BCG

- **Settlement Eligibility**
  - Demand Response Providers will receive an SCR Bid Cost Guarantee Payment if:
    - SCR is committed by NYISO for a RT Event
      - *NYISO will set to 0 the Minimum Payment Nomination for SCR capacity that was scheduled in DAM through DADRP and DSASP*
        - » *For Energy, Regulation, Reserves*
    - Determination for receipt of SCR BCG Payment is based on entire Dispatch Day

Special Case Resources BCG

- **Settlement Determinants**
  - Interval Start Hour (Eastern)
  - Minimum Payment Nomination

Special Case Resources BCG

- **Settlement Intermediates**
  - Hr SCR Reduction (MWh)
  - Hr RT Zonal LBMP ($/MWh)

- **Settlement Results**
  - Day SCR Bid Cost Guarantee ($)

Special Case Resources BCG

- Settlement Algorithm

Day SCR Bid Cost Guarantee ($) =
∑ Max {((Min Pymnt Nomination ($) – RT Zonal LBMP ($/MWh)) * Hr SCR Reduction MWh), 0}

For all event hours in a day

Special Case Resources BCG

- **Summary**
  - Intended to recover a Demand Response Providers Minimum Payment Nomination not recovered through Real Time LBMP Revenues.

Special Case Resources

Settlement Reference Material

- MST 05
  - Section 5.12.11
- Accounting and Billing Manual Section 4.5
- Advisory Billing File
  - Demand Response
    - SCR Demand Response Reduction MWHr
    - SCR Demand Response Credit $
    - SCR Bid Cost Guarantee $
  - Hourly Bill Code 2022 & 2023
  - Daily Bill Code 2027 & 2028, 2029

DR Provider Settlements

- **Reliability-based Program Settlement Name:**
  - Emergency Demand Response (EDRP)
  - Special Case Resource (SCR)
    - SCR BCG
- **Economic-based Program Settlement Name:**
  - Day Ahead Demand Response Program (DADRP)
  - Demand Side Ancillary Services Program (DSASP)
    - Reserves
    - Regulation
- **OATT Rate Schedule 1**
  - Applies to SCR, EDRP, and DADRP

Demand Side Ancillary Services Program Settlements

- **DAM Reserve Availability Description**
  - Intended to compensate DSASP Suppliers who offer their resource's capacity as Reserve Service to the NYISO in the DAM.

DAM Reserve Availability

- **Settlement Eligibility**
  - DSASP Suppliers will receive a payment for DAM Reserve Availability if:
    - Hr DAM Sched Res Avail (MWh) > 0
      - 10 Minute Spinning Reserves
      - 10 Minute Non-Synchronous Reserves
      - 30 Minute Spinning & Non-Synchronous Reserves

DAM Reserve Availability

- **Settlement Determinants**
  - Hr DAM ‘Reserve Type’ Price ($/MW)
  - Hr DAM Sched ‘Reserve Type’ Avail (MWh)

DAM Reserve Availability

- **Settlement Intermediates**
  - N/A

- **Settlement Results**
  - Hr DAM ‘Reserve Type’ Avail StImnt ($)

DAM Reserve Availability

- Settlement Algorithm

Hr DAM ‘Reserve Type’ Avail Stlmnt ($) =
Hr DAM Sched ‘Reserve Type’ Avail (MWh) * Hr DAM ‘Reserve Type’ Price ($/MW)

Demand Side Ancillary Services Program Settlements

- **Balancing Reserve Availability Description**
  - Intended to compensate DSASP Suppliers who offer their resource's capacity as Reserve Service to the NYISO in the RT Market.

Balancing Reserve Availability

- **Settlement Eligibility**
  - DSASP Suppliers will receive a payment for Balancing Reserve Availability if:
    - Hr DAM Sched 'Reserve Type' Avail (MWh) > 0

    Or

    - RTD BalMkt Sched 'Reserve Type' Avail (MWh) > 0
      - 10 Minute Spinning Reserves
      - 10 Minute Non-Synchronous Reserves
      - 30 Minute Spinning & Non-Synchronous Reserves

Balancing Reserve Availability

- **Settlement Determinants**
  - RTD Interval Seconds
  - Hr DAM Sched ‘Reserve Type’ Avail (MWh)
  - RTD RT Sched ‘Reserve Type’ Avail (MW)
  - RTD RT ‘Reserve Type’ Price ($/MW)

Balancing Reserve Availability

- **Settlement Intermediates**
  - RTD BalMkt Sched ‘Reserve Type’ Avail (MW)

- **Settlement Results**
  - RTD BalMkt ‘Reserve Type’ Avail Stlmnt ($)

Balancing Reserve Availability

- Settlement Algorithm

RTD BalMkt ‘Reserve Type’ **Avail Stlmnt ($) =**
RTD BalMkt Sched ‘Reserve Type’ Avail (MW) * RTD RT ‘Reserve Type’ Price ($/MW) * RTD Interval Seconds/3600

Where:
RTD BalMkt Sched ‘Reserve Type’ Avail (MW) =
RTD RT Sched ‘Reserve Type’ Avail (MW) – Hr DAM Sched ‘Reserve Type’ Avail (MWh)

Reserve Availability

- **Summary**
  - DAM Reserve
    - Compensating DSASP Suppliers offering capacity as Reserve Service to NYISO in DAM
      - Based on…
        - » Reserve Product Type
        - » Reserve Product Location
  - Balancing Reserve
    - Compensating DSASP Suppliers offering capacity as Reserve Service to NYISO in RT Market
      - Based on…
        - » Reserve Product Type
        - » Reserve Product Location

Reserve Availability

- **Settlement Reference Material**
  - MST Section 15.4 – Schedules
  - Accounting and Billing Manual Section 5.3

DAM Reserve Availability

- **Settlement Reference Material**
  - Advisory Billing File
    - Power Supplier
      - Reserve Availability $
      - Reserve MCP $
      - Reserve MWHr
    - Hourly Bill Code 223 - 246
    - Daily Bill Code 310
      - Operating Reserve Payment $
  - DSS Corporate Report
    - Settlement Details- Power Supplier – DAM 'Reserve Type' Availability

Balancing Reserve Availability

- **Settlement Reference Material**
  - Advisory Billing File
    - Power Supplier
      - Reserve Availability $
      - Reserve MCP $
      - Reserve MWHr
    - Hourly Bill Code 223 - 246
    - Daily Bill Code 310
      - Operating Reserve Payment $
  - DSS Corporate Report
    - Settlement Details- Power Supplier – Balancing Market 'Reserve Type' Availability

Supplemental DSASP Reserve Payments

- Day-Ahead Bid Production Cost Guarantee (DAM BPCG)
- Real-Time Bid Production Cost Guarantee (RT BPCG)
- Day-Ahead Marginal Assurance Payment (DAMAP)

Day-Ahead Market BPCG

- **Day-Ahead Bid Production Cost Guarantee (DAM BPCG) Description**
  - Intended to guarantee DSASP Suppliers that a resource will not incur a net loss, if committed in DAM.
    - Based on Net Ancillary Service Revenues
    - Net Loss Determined at the Daily Level

Day-Ahead Market BPCG

- **Settlement Eligibility**
  - DSASP resources are eligible for DAM BPCG Settlement ($) if:
    - DSASP resource's DAM total costs exceed its DAM Ancillary Services Settlements

Day-Ahead Market BPCG

- **Settlement Determinants**
  - Hr DAM Spin Avail Stlmnt ($)
  - Hr DAM Sched Spin Avail (MWh)
  - Hr DAM AS Bid: Spin Price ($/MWh)
  - Hr DAM 30Spin Res Cr ($)
  - Hr DAM Sched Spin 30Min Avail (MWh)
  - Hr DAM AS Bid: Spin 30Min Avail Price ($/MWh)

- **Settlement Intermediates**
  - Hr DAM NASR OpRes Margin ($)
  - Hr DAM Net AS Rev ($)

Day-Ahead Market BPCG

- **Settlement Results**
  - Day DAM BPCG StImnt ($)

Day-Ahead Market BPCG

Settlement Algorithm

**Day DAM BPCG Stlmnt ($) =** Max {Day DAM Total Net Cost ($), 0}

Where:

Day DAM Total Net Cost ($) = ∑ Hr DAM Total Net Cost ($), for all hours in a day

Hr DAM Total Net Cost ($) = (-1) * Hr DAM Net AS Rev ($)

Hr DAM Net AS Rev ($) = Hr DAM NASR OpRes Margin ($)

Hr DAM NASR OpRes Margin ($) =

{Hr DAM Spin Avail Stlmnt ($) - [Hr DAM Sched Spin Avail (MWh) * Hr DAM AS Bid: Spin Price ($/MWh)]} + {Hr DAM 30Spin Res Cr ($) - [Hr DAM Sched Spin 30Min Avail (MWh) *Hr DAM AS Bid: Spin 30Min Price ($/MWh)]}

Day-Ahead BPCG

- **Settlement Reference Material**
  - MST Attachment C Section 18
  - Accounting and Billing Manual Section 4

Day-Ahead BPCG

- **Settlement Reference Material**
  - Advisory Billing File
    - Power Supplier
      - Day Ahead BPCG $
    - Hourly Bill Code 205
    - Hourly Bill Code 206
    - Daily Bill Code 302
  - DSS Corporate Report
    - Settlement Details- Power Supplier-Day Ahead Market BPCG

Real-Time BPCG

- **Real-Time Bid Production Cost Guarantee (RT BPCG) Description**
  - Intended to guarantee DSASP Suppliers that a resource will not incur a net loss, if committed above that committed in DAM.
    - Based on Ancillary Service Revenues
    - Net Loss Determined at the Daily Level

Real-Time BPCG

- **Settlement Eligibility**
  - DSASP resources are eligible for RT BPCG Settlement ($) if:
    - DSASP resource's RT total costs exceed its RT Ancillary Services Settlements

Real-Time BPCG

- **Settlement Determinants**
  - RTD RT Sched 10Synch Avail (MW)
  - Hr DAM Sched 10Synch Avail (MW)
  - RTD RT Sched Spin 30Min Avail (MW)
  - Hr DAM Sched Spin 30Min Avail (MW)
  - RTD RT 10Spin Price ($/MWh)
  - RTD RT 30Min Price ($/MWh)
- **Settlement Intermediates**
  - RTD BalMkt 10Synch Avail Stlmnt ($)
  - RTD BalMkt 30Spin Avail Stlmnt ($)
  - RTD RT Net AS Revenue ($)
  - RTD RT Total Net Cost ($)
  - Hr RT Total Net Cost ($)

Real-Time BPCG

- **Settlement Results**
  - Day RT BPCG StImnt ($)

Real-Time BPCG

Settlement Algorithm

**Day RT BPCG Stlmnt ($) =** Max {Day RT Total Net Cost ($), 0}

Where:
Day RT Total Net Cost ($) = ∑ RTD RT Total Net Cost ($), for all RTD intervals in a day

RTD RT Total Net Cost ($) = (-1) * RTD RT Net AS Rev ($)

RTD RT Net AS Rev ($) = RTD BalMkt 10Synch Avail Stlmnt ($) + RTD BalMkt 30Spin Avail Stlmnt ($)

RTD BalMkt 10Synch Avail Stlmnt ($) =
{RTD RT Sched 10Synch Avail (MW) - Hr DAM Sched 10Synch Avail (MW)} * RTD RT 10Min Price ($/MWh) * RTD Interval seconds / 3600

RTD BalMkt 30Spin Avail Stlmnt ($) =
{RTD RT Sched 30Spin Avail (MW) - Hr DAM Sched 30Spin Avail (MW)} * RTD RT 30Min Price ($/MWh) * RTD Interval seconds / 3600

Real-Time BPCG

- **Settlement Reference Material**
  - MST Attachment C Section 18.4
  - Accounting and Billing Manual Section 4
    - Appendix E

Real-Time BPCG

- **Settlement Reference Material**
  - Advisory Billing File
    - Power Supplier
      - RT BPCG $
    - Hourly Bill Code 210
    - Hourly Bill Code 211
    - Daily Bill Code 305
  - DSS Corporate Report
    - Settlement Details- Power Supplier- RT BPCG

Day-Ahead Margin Assurance

- **Day-Ahead Margin Assurance Payment (DAMAP) Description**
  - A payment for DSASP Suppliers that are required to purchase Ancillary Services in the NYISO Balancing Market; as a result of being dispatched below their DAM Schedule, by NYISO.

Day-Ahead Margin Assurance

- **Settlement Determinants**
  - Hr DAM Sched Spin Avail (MW)
  - RTD RT Sched Spin Avail (MW)
  - Hr DAM Sched 10NSync Avail (MW)
  - RTD RT Sched 10NSync Avail (MW)
  - Hr DAM Sched 30Min Avail (MW)
  - RTD RT Sched 30Min Avail (MW)
  - RTD RT Spin Price ($/MWh)
  - RTD RT 10NSync Price ($/MWh)
  - RTD RT 30Min Price ($/MWh)
  - Hr DAM AS Bid: Spin Price ($/MWh)
  - Hr DAM AS Bid: 10NSync Price ($/MWh)
  - Hr DAM AS Bid: 30Min Price ($/MWh)
  - RTD Reserve Performance Index
  - RTD Interval Seconds

Day-Ahead Margin Assurance

- **Settlement Intermediates**
  - RTD DAM MargAsrc: Spin Res ($)
  - RTD DAM MargAsrc: 10NSync Res($)
  - RTD DAM MargAsrc: 30Min Res ($)
  - RTD DAM MargAsrc: Total ($)

- **Settlement Results**
  - Hr DAM MargAsrc Stlmnt ($)

Day-Ahead Margin Assurance

- ## Settlement Algorithm

Hr DAM MargAsrc Stlmnt ($) =
Max (0, ∑ RTD DAM MargAsrc: Total ($), for all RTD Intervals in given hour)

Where:
RTD DAM MargAsrc: Total ($) =
{RTD DAM MargAsrc: SpinRes ($) + RTD DAM MargAsrc: 10NSync Res ($)
+ RTD DAM MargAsrc: 30Min Res ($)} * RTD Interval seconds / 3600

Day-Ahead Margin Assurance

- ## Settlement Algorithm

Where:

Scenario 1

RTD DAM MargAsrc: Spin Res ($/hr) =
{Hr DAM Sched Spin Avail (MW) – RTD RT Sched Spin Avail (MW)} * {RTD RT Spin Price ($/MWh) – Hr DAM AS Bid: Spin Price ($/MWh)} * RTD Reserve Performance Index ***if*** RTD RT Sched Spin Avail (MW) < Hr DAM Sched Spin Avail (MW)

Scenario 2

RTD DAM MargAsrc: Spin Res ($/hr) =
{Hr DAM Sched Spin Avail (MW) – RTD RT Sched Spin Avail (MW)} *
RTD RT Spin Price ($/MWh) * RTD Reserve Performance Index ***if***
RTD RT Sched Spin Avail (MW) ≥ Hr DAM Sched Spin Avail (MW)

Day-Ahead Margin Assurance

- ## Settlement Algorithm

Where:

Scenario 1

RTD DAM MargAsrc: 10NSync Res ($/hr) =
{Hr DAM Sched 10NSync Avail (MW) – RTD RT Sched 10NSync Avail (MW)} * {RTD RT 10NSync Price($/MWh) – Hr DAM AS Bid: 10NSync Price ($/MWh)} * RTD Reserve Performance Index ***if*** RTD RT Sched 10NSync Avail (MW) < Hr DAM Sched 10NSync Avail (MW)

Scenario 2

RTD DAM MargAsrc: 10NSync Res ($/hr) =
{Hr DAM Sched 10NSync Avail (MW) – RTD RT Sched 10NSync Avail (MW)} * RTD RT 10NSync Price ($/MWh) * RTD Reserve Performance Index ***if*** RTD RT Sched 10NSync Avail (MW) ≥ Hr DAM Sched 10NSync Avail (MW)

Day-Ahead Margin Assurance

- ## Settlement Algorithm

Where:

Scenario 1

RTD DAM MargAsrc: 30Min Res ($/hr) =
{Hr DAM Sched 30Min Avail (MW) – RTD RT Sched 30Min Avail (MW)} * {RTD RT 30Min Price($/MWh) – Hr Calc DAM AS Bid: 30Min Price ($/MWh)} * RTD Reserve Performance Index ***if*** RTD RT Sched 30Min Avail (MW) < Hr DAM Sched 30Min Avail (MW)

Scenario 2

RTD DAM MargAsrc: 30Min Res ($/hr) =
{Hr DAM Sched 30Min Avail (MW) – RTD RT Sched 30Min Avail (MW)} *
RTD RT 30Min Price ($/MWh) * RTD Reserve Performance Index ***if***
RTD RT Sched 30Min Avail (MW) ≥ Hr DAM Sched 30Min Avail (MW)

Day-Ahead Margin Assurance

- **Settlement Reference Material**
  - MST Attachment J
  - Accounting and Billing Manual Section 4

Day-Ahead Margin Assurance

- **Settlement Reference Material**
  - Advisory Billing File
    - Power Supplier
      - DAM Contract Balancing $
    - Hourly Bill Code 238
    - Hourly Bill Code 239
    - Daily Bill Code 313
  - DSS Corporate Report
    - Settlement Details- Power Supplier-Day Ahead Margin Assurance

Demand Side Ancillary Services Program Settlements

- **DAM Regulation Capacity Description**
  - Intended to compensate DSASP Suppliers who offer their resource's capacity as Regulation Service to the NYISO in the DAM.

DAM Regulation Capacity

- **Settlement Eligibility**
  - DSASP Suppliers will receive a payment for DAM Regulation Capacity if:
    - DSASP supplier is interruptible load
    - Hr DAM Sched Reg Avail (MWh) > 0

DAM Regulation Capacity

- **Settlement Determinants**
  - Hr DAM Regulation Capacity Price ($/MW)
  - Hr DAM Sched Regulation Capacity (MWh)

DAM Regulation Capacity

- **Settlement Intermediates**
  - N/A

- **Settlement Results**
  - Hr DAM Regulation Capacity Stlmnt ($)

DAM Regulation Capacity

- Settlement Algorithm

Hr DAM Regulation Capacity Settlement Stlmnt ($) =
Hr DAM Sched Reg Capacity (MWh) * Hr DAM Regulation Capacity Price ($/MW)

Demand Side Ancillary Services Program Settlements

- **Balancing Regulation Capacity Description**
  - Intended to compensate DSASP Suppliers who offer their resource's capacity as Regulation Capacity to the NYISO in the RT Market.

Balancing Regulation Capacity

- **Settlement Eligibility**
  - DSASP Suppliers will receive a settlement for Balancing Regulation Capacity if:
    - Hr DAM Sched Regulation Capacity (MWh) > 0

    Or

    - RTD BalMkt Sched Regulation Capacity Avail (MWh) > 0

Balancing Regulation Capacity

- **Settlement Determinants**
  - RTD Interval Seconds
  - Hr DAM Sched Regulation Capacity (MWh)
  - RTD RT Sched Regulation Capacity (MW)
  - RTD RT Regulation Capacity Price ($/MW)

Balancing Regulation Capacity

- **Settlement Intermediates**
  - RTD BalMkt Sched Regulation Capacity (MW)

- **Settlement Results**
  - RTD BalMkt Regulation Capacity Stlmnt ($)

Balancing Regulation Capacity

- Settlement Algorithm

RTD BalMkt Regulation Capacity Stlmnt ($) =
RTD BalMkt Sched Regulation Capacity (MW) * RTD RT Regulation Capacity Price ($/MW) * RTDInterval Seconds/3600

Where:
RTD BalMkt Sched Regulation Capacity (MW) =
RTD RT Sched Regulation Capacity (MW) – Hr DAM Sched Regulation Capacity (MWh)

Regulation Capacity

- **Summary**
  - DAM Regulation Capacity
    - Compensating DSASP Suppliers offering capacity as Regulation Service to NYISO in DAM
  - Balancing Regulation Capacity
    - Compensating DSASP Suppliers offering capacity as Regulation Service to NYISO in RT Market

Regulation Capacity

- **Settlement Reference Material**
  - MST Section 15.3 – Rate Schedule 3
  - Accounting and Billing Manual Section 5.2

DAM Regulation Capacity

- **Settlement Reference Material**
  - Advisory Billing File
    - Power Supplier
    - Hourly Bill Code 217
      - Hrly DAM Reg Capacity
    - Hourly Bill Code 218
      - Hrly DAM Reg MCP $
    - Daily Bill Code 308
      - Regulation Payment $
  - DSS Corporate Report
    - Settlement Details - Power Supplier – DAM Regulation Capacity

Balancing Regulation Capacity

- **Settlement Reference Material**
  - Advisory Billing File
    - Power Supplier
    - Hourly Bill Code 250
      - Hrly Bal Mkt Reg Capacity MWHr
    - Hourly Bill Code 251
      - Hrly Bal Mkt Avail $
    - Daily Bill Code 308
      - Regulation Payment $
  - DSS Corporate Report
    - Settlement Details - Power Supplier – RT Regulation Service

Demand Side Ancillary Services Program Settlements

- **Regulation Movement Description**
  - Intended to compensate DSASP Suppliers with real-time Regulation Capacity schedules a real-time payment for Regulation Movement that is provided to the NYISO for each applicable real-time interval.

Regulation Movement

- **Settlement Eligibility**
  - DSASP Suppliers will receive a settlement for Regulation Movement if:
    - RTD BalMkt Sched Regulation Capacity Avail (MWh) > 0
    - Suppliers Movement (MW) > or < 0

Regulation Movement

- **Settlement Determinants**
  - RTD RT Movement (MW)
  - RTD RT Perf Index: Non-Time Weight
  - RTD RT Reg Movement Market Price ($/MW)

Regulation Movement

- **Settlement Intermediates**
  - N/A

- **Settlement Results**
  - RTD RT Regulation Movement Stlmnt ($)

Regulation Movement

- Settlement Algorithm

RTD RT Regulation Movement Stlmnt ($) =
RTD RT Sched Regulation Movement (MW) * RTD RT Regulation Movement Price ($/MW) * RTD RT Perf Index: Non-Time Weight

Regulation Movement

- **Summary**
  - Real Time Regulation Movement
    - Compensating Demand Side Providers for responding to six second base points, as directed by NYISO
      - Factors in RT Supplier Performance

RT Regulation Movement

- **Settlement Reference Material**
  - Advisory Billing File
    - Power Supplier
    - Hourly Bill Code 265
      - Hrly Reg Movement MWHr
    - Hourly Bill Code 266
      - Hrly RT Reg Movement $
    - Daily Bill Code 329
      - Regulation Movement $
  - DSS Corporate Report
    - Settlement Details - Power Supplier – RT Regulation Service

Regulation Performance Charge

- **Real Time Regulation Performance Charge Description**
  - Intended to charge Regulation Response Service Resources who are not responding or are responding poorly to NYISO's six second dispatch, correcting for Area Control Error (ACE)

Regulation Performance Charge

- **Settlement Eligibility**
  - Demand Side Regulation Response Service Resources are eligible to be assessed the RT Regulation Performance Charge if:
    - RTD Perf Index: Non-Time Weight < 1

Regulation Performance Charge

- **Settlement Determinants**
  - RTD Perf Index: Non Time Weight
  - RTD RT Reg Capacity Price ($/MWh)
  - RTD RT Sched Reg Capacity (MW)
  - Hr DAM Sched Reg Capacity (MW)
  - Hr DAM Reg Capacity Price ($/MWh)
  - RTD Interval Seconds

Regulation Performance Charge

- **Settlement Intermediates**
  - RTD RT Increm Sched Reg Capacity (MW)

- **Settlement Results**
  - RTD RT Reg Performance Charge ($)

Regulation Performance Charge

- ## Settlement Algorithm

RTD RT Reg Performance Charge ($) =
[{(1-RTD Perf Index: Non-Time Weight) * RTD RT Increm Sched Reg Capacity (MW) * -1.1 * RTD RT Reg Capacity Price ($/MWh)} + {(1-RTD Perf Index: Non-Time Weight) * (RTD RT Sched Reg Capacity (MW) – RTD RT Increm Sched Reg Capacity (MW)) * -1.1 * Max(Hr DAM Reg Capacity Price ($/MWh), RTD RT Reg Capacity Price ($/MWh)}] * RTD Interval Seconds/3600

Where:
RTD RT Increm Sched Reg Capacity =
RTD RT Sched Reg Capacity (MW) – Hr DAM Sched Reg Capacity (MW)
If
RTD RT Sched Reg Capacity (MW) > Hr DAM Sched Reg Capacity (MW)

Or

RTD RT Increm Sched Reg Capacity = 0
If
RTD RT Sched Reg Capacity (MW) < Hr DAM Sched Reg Capacity (MW)

Regulation Performance Charge

- **Settlement Scenario**
  - 'DRP A' has a 45 MWh DAM Regulation Capacity Schedule for HB 0
  - 'DRP A' was subsequently issued a RT Regulation Capacity Schedule of 60 MWs for HB 0
  - Their Performance Index is determined to be 0.933
  - Regulation Capacity Prices for HB 0 are:
    - DAM = $8/MWh
    - RT = $5/MWh
  - The RTD Interval Seconds are 300 each interval across the hour

Regulation Performance Charge

- Settlement Example

RTD RT Reg Performance Charge ($) = -$2.67
[{(1- 0.933) * 15 * -1.1 * $5} + {(1- 0.933) * (60 – 15) * -1.1 * Max($8, $5)}] * 300/3600

[{0.067 * 15 * -1.1 * $5} + {0.067 * 45 * -1.1 * $8}] * 300/3600

-5.5275 + -26.532 * 300/3600

Where:
RTD RT Increm Sched Reg Capacity = 15
60 - 45

Regulation Performance Charge

- **Summary**
  - Regulation Performance Charge
    - Charge assessed to Demand Side Providers in the event they respond poorly or not at all to their six second dispatch
      - Factors in a 10% adder

Regulation Performance Charge

- **Settlement Reference Material**
  - Advisory Billing File
    - Power Supplier
    - Hourly Bill Code 267
      - Hrly Reg Performance Charge $
    - Daily Bill Code 330
      - Regulation Performance Charge $
  - DSS Corporate Report
    - Settlement Details - Power Supplier – RT Regulation Service *(RT Regulation Movement Tab)*

DSASP Regulation – Other Payments

- **Demand Side Resources that provide Regulation Service may be eligible to receive:**
  - Day-Ahead Bid Production Cost Guarantee payment
    - Refer to Section 18.10 of the MST for calculation
  - Real-Time Bid Production Cost Guarantee payment
    - Refer to Section 18.11 of the MST for calculation
  - Day Ahead Market Assurance payment (DAMAP)
    - Refer to App H of Accounting and Billing Manual

Demand Response Settlements

- **Reliability-based Program Settlement Name:**
  - Emergency Demand Response (EDRP)
  - Special Case Resource (SCR)
    - SCR BCG
- **Economic-based Program Settlement Name:**
  - Day Ahead Demand Response Program (DADRP)
  - Demand Side Ancillary Services Program (DSASP)
    - Reserves
    - Regulation
- **OATT & MST Rate Schedule 1**
  - Applies to SCR, EDRP, and DADRP

Demand Response Rate Schedule 1

- **Settlement Description**
  - OATT & MST Rate Schedule 1:

    Intended to recover a portion of NYISO's operating costs and NYISO assessed FERC fees from Demand Response Providers

Scheduling, System Control, and Dispatch (S,SC & D)

+

FERC Fees

Demand Response Rate Schedule 1

- **Settlement Eligibility**
  - Demand Response Providers will receive a charge for OATT & MST Rate Schedule 1 if they participate in:
    - Reliability Based Programs
      - Special Case Resource (SCR)
      - Emergency Demand Response Program (EDRP)
    - Economic Based Programs
      - Day Ahead Demand Response Program (DADRP)

Demand Response
Rate Schedule 1 – S,SC, & D

- **Settlement Determinants**
  - Total Demand Response Load Reduction (MWh)

Demand Response
Rate Schedule 1 – S, SC, & D

- **Settlement Intermediates**
  - Hr OATT Rate Sched 1 Rate: Inj ($/MWh)

- **Settlement Results**
  - Hr OATT Rate Sched 1 Inj Stlmnt: Non-Phys ($)

Demand Response
Rate Schedule 1 – S, SC, & D

- Settlement Algorithm – S, SC, & D

Hr MST/OATT Sched 1 Inj Stlmnt: Non-Phys ($) =
Hr MST/OATT Sched 1 Rate: Inj ($/MWh) * Total Demand Response Load Reduction (MWh) *(-1)

Where:
Hr MST/OATT Sched 1 Rate: Inj ($/MWh) =
.28 * {(NYISO Cost of Ops)/Forecasted MWh Volume}

Demand Response
Rate Schedule 1 – FERC Fees

- **Settlement Determinants**
  - Hr DRP Avg Actual Reduction (MWh)
  - Hr DRP Metered Reduction (MWh)
  - Hr Proj FERC Fee NYISO Total ($)
  - Hr True-up FERC Fee NYISO Total ($)

Demand Response
Rate Schedule 1 – FERC Fees

- **Settlement Intermediates**
  - Hr DRP Sched 1 Inject (MWh)
  - Hr OATT Sched 1 FERC Fees Rate: Inj ($/MWh)

- **Settlement Results**
  - Hr OATT Sched 1 FERC Fees Inj StImnt: DRB ($)

Demand Response
Rate Schedule 1 – FERC Fees

- **Settlement Algorithm - *FERC Fees***

Hr OATT Sched 1 FERC Fees Inj Stlmnt: DRB ($) =

Hr OATT Sched 1 FERC Fees Rate: Inj ($/MWh) Hr DRP Sched 1 Inject (MWh) * (-1)*

Where:

Hr OATT Sched 1 FERC Fees Rate: Inj ($/MWh) =
actual billed fees – annual estimated fees + true up interest accrual

- Broken down to a monthly level and then an hourly level rate
- Demand Response Providers assessed 28% of the 94% Physical Allocation

Hr DRP Sched 1 Inject (MWh) = Total injected Demand Response MWh

Demand Response Rate Schedule 1

- Settlement Reference Material
  - OATT Rate Schedule 1

Demand Response Settlements

- **Reliability-based Program Settlement Name:**
  - Emergency Demand Response (EDRP)
  - Special Case Resource (SCR)
    - SCR BCG
- **Economic-based Program Settlement Name:**
  - Day Ahead Demand Response Program (DADRP)
  - Demand Side Ancillary Services Program (DSASP)
    - Reserves
    - Regulation
- **OATT Rate Schedule 1**
  - Applies to SCR, EDRP, and DADRP

Day-Ahead Demand Response Appendix

Economic DRP Settlements

- **Settlement Name:**
  - DADRP Incentive
  - DADRP Reduction
  - DADRP Load Balance
  - DADRP Penalty
    - Demand Response Providers
    - Load Serving Entities
  - DADRP Bid Cost Guarantee

DADRP Incentive

- **Incentive Description**
  - Designed to offer an incentive to Market Participants with curtailable loads to participate in the NYISO DADRP.

DADRP Incentive

- **Settlement Eligibility**
  - Demand Response Providers will be credited for DADRP Incentive if:
    - DADRP is scheduled in NYISO DAM and…
      - Hr DADRP Actual Reduction (MWh) > 0

DADRP Incentive

- **Settlement Determinants**
  - Hr DAM Energy Price: DADRP ($/MWh)
  - Hr DAM Loss Price: DADRP ($/MWh)
  - Hr DAM Cong Price: DADRP ($/MWh)
  - Hr DADRP Sched Reduction (MWh)
  - Hr DADRP Actual Reduction (MWh)

DADRP Incentive

- **Settlement Intermediates**
  - Hr DAM Total Price: DADRP ($/MWh)

- **Settlement Results**
  - Hr DADRP Incentive ($)

DADRP Incentive

- Settlement Algorithm

Hr DADRP Incentive ($) =
Hr DADRP Actual Reduction (MWh)* Hr DAM Total Price: DADRP ($/MWh)

Where:
Hr DAM Total Price: DADRP ($/MWh) =
Hr DAM Energy Price: DADRP ($/MWh) + Hr DAM Loss Price: DADRP ($/MWh) - Hr DAM Cong Price: DADRP ($/MWh)

DADRP Incentive

- **Summary**
  - Designed to offer an incentive to Market Participants with curtailable loads to participate in the NYISO DADRP.

DADRP Incentive

- **Settlement Reference Material**
  - MST Section 4
  - Accounting and Billing Manual Section 4.2
    - Appendix B
  - Advisory Billing File
    - Demand Response Incentive $
    - Hourly Bill Code 2006
    - Daily Bill Code 2011
  - DSS Corporate Report
    - Demand Response Program Customer – Incentive

Economic DRP Settlements

- **Settlement Name:**
  - DADRP Incentive
  - **DADRP Reduction**
  - DADRP Load Balance
  - DADRP Penalty
    - Demand Response Providers
    - Load Serving Entities
  - DADRP Bid Cost Guarantee

DADRP Reduction

- **Reduction Description**
  - Payment to LSEs designed to offset the amount of DAM load purchase costs when a curtailable load is scheduled to reduce consumption.

DADRP Reduction

- **Settlement Eligibility**
  - LSEs will be credited for DADRP Reduction if:
    - DADRP is scheduled to provide load reduction in DAM
      - Hr DADRP Sched Reduction (MWh) > 0

DADRP Reduction

- **Settlement Determinants**
  - Hr DAM Energy Price: DADRP ($/MWh)
  - Hr DAM Loss Price: DADRP ($/MWh)
  - Hr DAM Cong Price: DADRP ($/MWh)
  - Hr DADRP Sched Reduction (MWh)

DADRP Reduction

- **Settlement Intermediates**
  - Hr DAM Total Price: DADRP ($/MWh)

- **Settlement Results**
  - Hr DADRP Reduction ($)

DADRP Reduction

- Settlement Algorithm

Hr DADRP Reduction ($) =
Hr DADRP Sched Reduction (MWh)* Hr DAM Total Price: DADRP ($/MWh)

Where:
Hr DAM Total Price: DADRP ($/MWh) =
Hr DAM Energy Price: DADRP ($/MWh) + Hr DAM Loss Price: DADRP ($/MWh) - Hr DAM Cong Price: DADRP ($/MWh)

DADRP Reduction

- **Summary**
  - Payment to LSEs designed to offset the amount of DAM load purchase costs when a curtailable load is scheduled to reduce consumption.

DADRP Reduction

- **Settlement Reference Material**
  - MST Section 4
  - Accounting and Billing Manual Section 4.2
    - Appendix B
  - Advisory Billing File
    - Demand Response Reduction $
    - Hourly Bill Code 2006
    - Daily Bill Code 2012
  - DSS Corporate Report
    - Demand Response Program Customer – Reduction

Economic DRP Settlements

- **Settlement Name:**
  - DADRP Incentive
  - DADRP Reduction
  - DADRP Load Balance
  - DADRP Penalty
    - Demand Response Providers
    - Load Serving Entities
  - DADRP Bid Cost Guarantee

DADRP Load Balance

- **Load Balance Description**
  - Charge to LSEs designed to offset the amount of Balancing Market load sold back, due to the actual Demand Reduction in the RT Market.

DADRP Load Balance

- **Settlement Eligibility**
  - Load Serving Entities will be charged for DADRP Load Balance if:
    - DADRP is scheduled to provide load reduction in DAM
      - Hr DADRP Actual Reduction (MWh) > 0

DADRP Load Balance

- **Settlement Determinants**
  - Hr RT Zonal Energy Price: DADRP ($/MWh)
  - Hr RT Zonal Loss Price: DADRP ($/MWh)
  - Hr RT Zonal Cong Price: DADRP ($/MWh)
  - Hr DADRP Sched Reduction (MWh)
  - Hr DADRP Actual Reduction (MWh)

DADRP Load Balance

- **Settlement Intermediates**
  - Hr RT Zonal Total Price: DADRP ($/MWh)

- **Settlement Results**
  - Hr DADRP Load Balance ($)

DADRP Load Balance

- Settlement Algorithm

Hr DADRP Load Balance ($) =
Hr DADRP Actual Reduction (MWh)* Hr RT Zonal Total Price: DADRP ($/MWh) * -1

Where:
Hr RT Zonal Total Price: DADRP ($/MWh) =
Hr RT Zonal Energy Price: DADRP ($/MWh) + Hr RT Zonal Loss Price: DADRP ($/MWh) - Hr RT Zonal Cong Price: DADRP ($/MWh)

DADRP Load Balance

- **Summary**
  - Charge to LSEs designed to offset the amount of Balancing Market load sold back, due to the actual Demand Reduction in the RT Market.

DADRP Load Balance

- **Settlement Reference Material**
  - MST Section 4
  - Accounting and Billing Manual Section 4.2
    - Appendix J
  - Advisory Billing File
    - Demand Response Load Balancing $
    - Hourly Bill Code 2008
    - Daily Bill Code 2014
  - DSS Corporate Report
    - Demand Response Program Customer – Load Balance

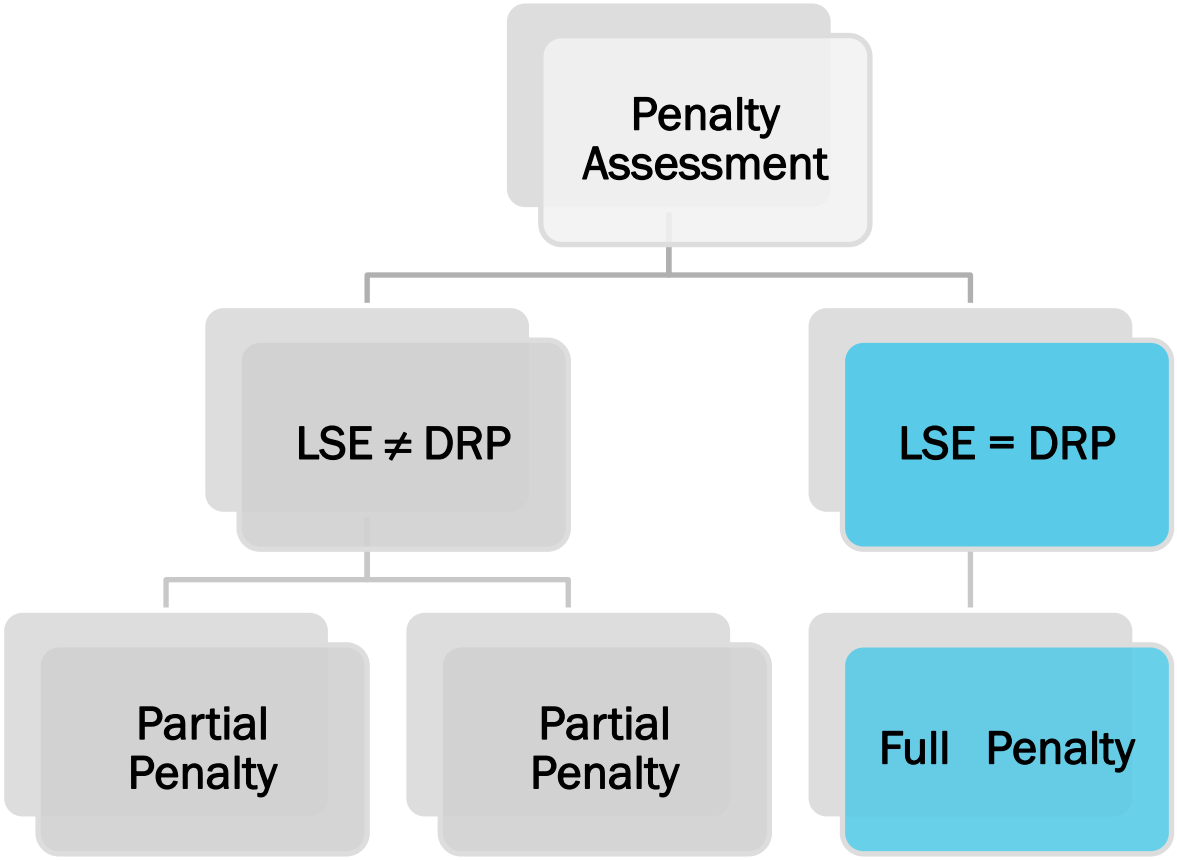
Economic DRP Settlements

- **Settlement Name:**
  - DADRP Incentive
  - DADRP Reduction
  - DADRP Load Balance
  - **DADRP Penalty**
    - **Demand Response Providers**
    - **Load Serving Entities**
  - DADRP Bid Cost Guarantee

DADRP Penalty

- **Penalty Description**
  - DRP and LSE are Same Org
    - Charge to Demand Response Provider
      - when NYISO schedules curtailable load in DAM; however, scheduled load reduction does not physically occur.
  - DRP and LSE are Different Org
    - Charge to Demand Response Provider
    - Charge to Load Serving Entities
      - when NYISO schedules curtailable load in DAM; however, scheduled load reduction does not physically occur.

DADRP Penalty



DADRP Penalty

- **Settlement Eligibility – LSE = DRP**
  - Demand Response Providers will be charged for a DADRP Penalty if:
    - DADRP is scheduled to provide load reduction in DAM
      - Hr DADRP Sched Reduction (MWh) > 0
    - DADRP does not fully reduce RT Load
      - Hr DADRP Actual Reduction (MWh) < Hr DADRP Sched Reduction (MWh)

DADRP Penalty

- **Settlement Determinants**
  - DRP Org ID
  - LSE ID
  - LSE Org ID
  - Hr DAM Energy Price: DADRP ($/MWh)
  - Hr DAM Loss Price: DADRP ($/MWh)
  - Hr DAM Cong Price: DADRP ($/MWh)
  - Hr DADRP Sched Reduction (MWh)
  - Hr DADRP Actual Reduction (MWh)

DADRP Penalty

- **Settlement Determinants**
  - Hr RT Energy Price: DADRP ($/MWh)
  - Hr RT Loss Price: DADRP ($/MWh)
  - Hr RT Cong Price: DADRP ($/MWh)

DADRP Penalty

- **Settlement Intermediates**
  - Hr DAM Total Price: DADRP ($/MWh)
  - Hr RT Total Price: DADRP ($/MWh)

- **Settlement Results**
  - Hr DADRP Penalty: DRP ($)
  - Hr DADRP Penalty: LSE ($)

DADRP Penalty

- Settlement Algorithm – LSE = DRP

Hr DADRP Penalty: DRP ($) =
{Hr DADRP Actual Reduction (MWh)- Hr DADRP Sched reduction (MWh)} * Max{Hr DAM Total Price: DADRP ($/MWh), Hr RT Total Price: DADRP ($/MWh)}
if
LSE Org ID = DRP Org ID

Where:
Hr DAM Total Price: DADRP ($/MWh) =
Hr DAM Energy Price: DADRP ($/MWh) + Hr DAM Loss Price: DADRP ($/MWh) – Hr DAM Cong Price: DADRP ($/MWh)

Hr RT Total Price: DADRP ($/MWh) =
Hr RT Energy Price: DADRP ($/MWh) + Hr RT Loss Price: DADRP ($/MWh) - Hr RT Cong Price: DADRP ($/MWh)

DADRP Penalty

- **Settlement Eligibility – LSE ≠ DRP**
  - Load Serving Entity will be charged for a DADRP Penalty if:
    - DADRP is scheduled to provide load reduction in DAM
      - Hr DADRP Sched Reduction (MWh) > 0
    - DADRP does not fully reduce RT Load
      - Hr DADRP Actual Reduction (MWh) < Hr DADRP Sched Reduction (MWh)

DADRP Penalty

- Settlement Algorithm – LSE ≠ DRP

Hr DADRP Penalty: LSE ($) =
{Hr DADRP Actual Reduction (MWh) - Hr DADRP Sched reduction (MWh)} * Hr DAM Total Price: DADRP ($/MWh)

Where:
Hr DAM Total Price: DADRP ($/MWh) =
Hr DAM Energy Price: DADRP ($/MWh) + Hr DAM Loss Price: DADRP ($/MWh) – Hr DAM Cong Price: DADRP ($/MWh)

DADRP Penalty

- **Settlement Eligibility – LSE ≠ DRP**
  - Demand Response Providers will be charged for a DADRP Penalty if:
    - DADRP is scheduled to provide load reduction in DAM
      - Hr DADRP Sched Reduction (MWh) > 0
    - DADRP does not fully reduce RT Load
      - Hr DADRP Actual Reduction (MWh) < Hr DADRP Sched Reduction (MWh)

DADRP Penalty

- Settlement Algorithm – LSE ≠ DRP

Hr DADRP Penalty: DRP ($) =
[{Hr DADRP Actual Reduction (MWh)- Hr DADRP Sched reduction (MWh)} * Max{Hr DAM Total Price: DADRP ($/MWh), Hr RT Total Price: DADRP ($/MWh)}] - [{Hr DADRP Actual Reduction (MWh) - Hr DADRP Sched reduction (MWh)} * Hr DAM Total Price: DADRP ($/MWh)]

Where:
Hr DAM Total Price: DADRP ($/MWh) =
Hr DAM Energy Price: DADRP ($/MWh) + Hr DAM Loss Price: DADRP ($/MWh) – Hr DAM Cong Price: DADRP ($/MWh)

Hr RT Total Price: DADRP ($/MWh) =
Hr RT Energy Price: DADRP ($/MWh) + Hr RT Loss Price: DADRP ($/MWh) - Hr RT Cong Price: DADRP ($/MWh)

DADRP Penalty Example 1

HR DADRP Penalty

Off Setting $ paid in DAM for Incentive

LSE = DRP

LSE Charge – Covers the higher of the DAM and RT Costs

[(15-20) * Max(DAM LBMP $10, RT LBMP $12)]

-5 * RT LBMP $12

-$60

LSE ≠ DRP

LSE Charge – Covers the DAM Costs

-5 * DAM LBMP $10

-$50

DRP Charge – Covers cost Delta between DAM & RT Market

(-5 * Max($10, $12) – (-5 * DAM LBMP $10)

(-$60) – (-$50)

-$10

DADRP Penalty Example 2

HR DADRP Penalty

Off Setting $ paid in DAM for Incentive

LSE = DRP

LSE Charge – Covers the higher of the DAM and RT Costs

[(15-20) * Max(DAM LBMP $10, RT LBMP $6)]

-5 * DAM LBMP $10

-$50

LSE ≠ DRP

LSE Charge – Covers the DAM Costs

-5 * DAM LBMP $10

-$50

DRP Charge – Covers cost Delta between DAM & RT Market

(-5 * Max($10, $6) – (-5 * DAM LBMP $10)

(-$50) – (-$50)

$0

DADRP Penalty

- **Summary**
  - DRP and LSE Same Org
    - Charge to Demand Response Provider
      - when NYISO schedules curtailable load in DAM; however, scheduled load reduction does not physically occur.
  - DRP and LSE Different Org
    - Charge to Demand Response Provider
    - Charge to Load Serving Entities
      - when NYISO schedules curtailable load in DAM; however, scheduled load reduction does not physically occur.

DADRP Penalty

- **Settlement Reference Material**
  - MST Section 4
  - DA Demand Reduction Program Manual
    - Section 4.2
  - Advisory Billing File
    - Demand Response DADRP Penalty $
    - Hourly Bill Code 2007
    - Daily Bill Code 2013
  - DSS Corporate Report
    - Demand Response Program Customer – Penalty for Demand Response Provider

Economic DRP Settlements

- **Settlement Name:**
  - DADRP Incentive
  - DADRP Reduction
  - DADRP Load Balance
  - DADRP Penalty
    - Demand Response Providers
    - Load Serving Entities
  - DADRP Bid Cost Guarantee

DADRP BCG

- **Bid Cost Guarantee Description**
  - Payment to Demand Response Provider when NYISO schedules curtailable load in DAM and revenue earned does not out-weigh bid costs.

DADRP BCG

- **Settlement Eligibility**
  - Demand Response Providers will be credited for DADRP Bid Cost Guarantee if:
    - DADRP is scheduled to provide load reduction in DAM
      - Hr DADRP Sched Reduction (MWh) > 0
    - DRP reduces its RT Load
      - Hr DADRP Actual Reduction (MWh) > 0
    - DRP's Bid Costs exceed their revenue for the Day
    - DADRP must have a flexible bid

DADRP BCG

- **Settlement Determinants**
  - Hr DADRP Bid: Min Reduction Cost ($)
  - Hr DADRP Bid: Min Reduction (MWh)
  - Hr DADRP Bid: Price # ($/MWh)
    - Bid Prices 1-6
  - Hr DADRP Bid: Reduction # ($/MWh)
    - Reduction MWs 1-6
  - Hr DADRP Bid: Reduct Init Cost ($)
  - Hr DADRP Sched Reduct: Prior Hr (MWh)

DADRP BCG

- **Settlement Determinants**
  - Hr DAM Energy Price: DADRP ($/MWh)
  - Hr DAM Loss Price: DADRP ($/MWh)
  - Hr DAM Cong Price: DADRP ($/MWh)
  - Hr DADRP Sched Reduction (MWh)
  - Hr DADRP Actual Reduction (MWh)

DADRP BCG

- **Settlement Intermediates**
  - Hr DAM Total Price: DADRP ($/MWh)
  - Hr DADRP Alloc Min Reduct Cost ($)
  - Hr DADRP Alloc Reduct init Cost ($)
  - HR DADRP Incrmntl Reduct Cost ($)
  - Hr Total DADRP Cost ($)
  - Hr Total DADRP Revenue ($)

- **Settlement Results**
  - Day DADRP BCG StImnt ($)

DADRP BCG

- Settlement Algorithm

Day DADRP BCG Stlmnt ($) =
Max{∑ Hr Total DADRP Net Cost ($) for all hours in a day, 0}

Where:
Hr Total DADRP Net Cost ($) =
Hr Total DADRP Cost ($) – Hr Total DADRP Revenue ($)

Hr Total DADRP Cost ($) =
Hr DADRP Alloc Min Reduct Cost ($) + Hr DADRP Alloc Reduct Init Cost ($) + Hr DADRP Incrmntl Reduct Cost ($)

Hr Total DADRP Revenue ($) =
Hr DADRP Actual Reduction (MWh) * Hr DAM Total Price: DADRP ($/MW)

DADRP BCG

- **Summary**
  - Payment to Demand Response Provider when NYISO schedules curtailable load in DAM and revenue earned does not out-weigh bid costs.

DADRP BCG

- **Settlement Reference Material**
  - MST Section 4
    - Attachment C
  - DA Demand Reduction Program Manual
    - Section 7
  - Advisory Billing File
    - Load Reduction Bid Guarantee $
    - Hourly Bill Code 2009
    - Daily Bill Code 2015
  - DSS Corporate Report
    - Demand Response Program Customer – Bid Cost Guarantee

DADRP Wrap Up Exercise

DADRP Scenario

- Revenue earned does not exceed bid costs
- Off-Sets DAM Load Purchase Costs
- Scheduled Load Reduction does not physically occur
- Covers a portion of NYISO Costs of Operations
- Encourages Curtailable Load Participation
- Off-Sets RT Load Sold Back to NYISO

DADRP Settlement

- DADRP Bid Cost Guarantee
- DADRP Reduction
- DADRP Penalty
- DADRP Rate Schedule 1
- DADRP Incentive
- DADRP Load Balance

Economic DRP Settlements

- **Settlement Name:**
  - DADRP Incentive
  - DADRP Reduction
  - DADRP Load Balance
  - DADRP Penalty
    - Demand Response Providers
    - Load Serving Entities
  - DADRP Bid Cost Guarantee