

Load Serving Entity Customer Residual Settlements

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What are Residuals?

- NYISO is a non-profit organization and must remain revenue neutral - income from charges should equal payments for credits
- Residuals result from over collection or financial imbalances
- Residual Adjustments allocate cash imbalances to withdrawal side customers (includes LSEs and Transaction Customers)

How are residuals allocated?

- **Based on load ratio share of the following:**
 - NYISO-wide

****Load ratio share allocations for residuals exclude CTS-NE MWHrs from the calculation****

Load Ratio Share for Residuals

LOAD RATIO SHARE (LRS): An LSE's portion of load compared to the Designated Total Load*

$$\text{Load Ratio Share (LRS)} = \frac{\text{RT Actual MWs}}{\text{NYISO Wide Total Load}}$$

LSE and Transmission Customer Residual 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

LSE Residual Settlements

Settlement Name	Settlement Description	Load Ratio Share
DAM Energy Residuals	Designed to allocate any cash imbalance (charges or payments) in NYISO's DAM Energy settlements, to the Market Participants purchasing Energy as LSEs	NYISO Wide
DAM Loss Residuals	Designed to allocate any cash imbalance (charges or payments) in NYISO's DAM Loss settlements, to the Market Participants purchasing Energy as LSEs	NYISO Wide
Balancing Market Energy Residuals	Designed to allocate any cash imbalance (charges or payments) in NYISO's Balancing Market Energy settlements, to the Market Participants purchasing Energy as LSEs	NYISO Wide
Balancing Market Loss Residuals	Designed to allocate any cash imbalance (charges or payments) in NYISO's Balancing Market Loss settlements, to the Market Participants purchasing Energy as LSEs	NYISO Wide
Balancing Market Congestion Residuals	Designed to allocate any cash imbalance (charges or payments) in NYISO's Balancing Market Congestion settlements, to the Market Participants purchasing Energy as LSEs	NYISO Wide

LSE Residual Settlements

■ Settlement Name:

- **DAM Energy Residuals**
- DAM Loss Residuals
- Balancing Market Energy Residuals
- Balancing Market Loss Residuals
- Balancing Market Congestion Residuals

LSE Residual Settlements

- **LSE DAM Energy Residual Description**
 - Designed to allocate any cash imbalance (charges or payments) in NYISO's DAM Energy settlements, to the Market Participants purchasing Energy as LSEs

LSE DAM Energy Residual

■ Settlement Eligibility

- LSEs will receive a charge or payment for DAM Energy Residuals (\$) if:
 - LSE purchased energy to meet their load requirements from the NYISO Energy markets
 - Including Import and Internal Bilateral Transaction energy, purchased from 3rd parties.

LSE DAM Energy Residual

■ Settlement Determinants

- Hr RT LSE Load (MWh)
- Hr Total NYISO RT LSE Load (MWh)
- Hr Total NYISO RT Export Trans (MWh)
- Hr Total NYISO RT WT Trans (MWh)

- Hr Total NYISO DAM Energy Cr to PS (\$)
- Hr Total NYISO DAM Energy Ch to LSE (\$)
- Hr Total NYISO DAM LBMP Energy Ch: TC (\$)

LSE DAM Energy Residual

■ Settlement Intermediates

- Hr RT LSE Ld Ratio Sh: LSE, Exp, WT
- Hr Total NYISO DAM Resid Energy (\$)

■ Settlement Results

- Hr DAM Resid Energy Stlmnt: LSE (\$)

LSE DAM Energy Residual

■ Settlement Algorithm

Hr DAM Resid Energy Stlmnt: LSE (\$) =

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT * Hr Total NYISO DAM Resid Energy (\$) * (-1)

Where:

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT =

Hr RT LSE Load (MWh) / {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO DAM Resid Energy (\$) =

Hr Total NYISO DAM Energy Cr to PS (\$) + {Hr Total NYISO DAM Energy Ch to LSE (\$) + Hr Total DAM LBMP Energy Ch: TC (\$)}

LSE DAM Energy Residual

■ Settlement Scenario

- 'LSE A' purchased energy, meeting load requirements
 - 40.3555 MWh in HB 20 from NYISO Energy Market
- The total NYISO RT LSE Load is 18,000.9709 MWh
- The total NYISO RT Export MWh is 1,517.9988 MWh
- The total NYISO RT Wheel Through MWh is 0 MWh
- The total NYISO Energy Credit to PS is \$292,104.53
- The total NYISO Energy Charge to LSEs is \$ - 274,960.73
- The total NYISO LBMP Energy Charge to TCs is \$ - 5,864.46

LSE DAM Energy Residual

■ Settlement Example

$$\text{Hr DAM Resid Energy Stlmnt: LSE (\$)} = \$ - 23.33$$

$$\$ 11,279.34 * .002068 * (-1)$$

Where:

$$\text{Hr RT LSE Ld Ratio Sh: LSE, Exp, WT} = 0.002068$$

$$40.3555 / \{18,000.9709 + 1,517.9988 + 0\}$$

$$\text{Hr Total NYISO DAM Resid Energy (\$)} = \$11,279.34$$

$$\$292,104.53 + \{ (\$-274,960.73) + (\$ -5,864.46) \}$$

LSE is CHARGED \$23.33

LSE DAM Energy Residual

■ Summary

- A charge or credit to LSEs, to allocate any cash imbalance in NYISO's DAM Energy settlements
 - Based on RT Load Ratio Share
 - Calculated on Hourly Level

LSE Residual Settlements

■ Settlement Name:

- DAM Energy Residuals
- **DAM Loss Residuals**
- Balancing Market Energy Residuals
- Balancing Market Loss Residuals
- Balancing Market Congestion Residuals

LSE Residual Settlements

- **LSE DAM Loss Residual Description**
 - Designed to allocate any cash imbalance (charges or payments) in NYISO's DAM Loss settlements, to the Market Participants purchasing Energy as LSEs

LSE DAM Loss Residual

■ Settlement Eligibility

- LSEs will receive a charge or payment for DAM Loss Residuals (\$) if:
 - LSE purchased energy to meet their load requirements from the NYISO Energy markets
 - Including Import and Internal Bilateral Transaction energy, purchased from 3rd parties

LSE DAM Loss Residual

■ Settlement Determinants

- Hr RT LSE Load (MWh)
- Hr Total NYISO RT LSE Load (MWh)
- Hr Total NYISO RT Export Trans (MWh)
- Hr Total NYISO RT WT Trans (MWh)

- Hr Total NYISO DAM Loss Cr to PS (\$)
- Hr Total NYISO DAM Loss Ch to LSE (\$)
- Hr Total NYISO DAM LBMP Loss Ch: TC (\$)
- Hr Total NYISO DAM TUC Loss Ch: TC (\$)

LSE DAM Loss Residual

■ Settlement Intermediates

- Hr RT LSE Ld Ratio Sh: LSE, Exp, WT
- Hr Total NYISO DAM Resid Loss (\$)

■ Settlement Results

- Hr DAM Resid Loss Stlmnt: LSE (\$)

LSE DAM Loss Residual

■ Settlement Algorithm

Hr DAM Resid Loss Stlmnt: LSE (\$) =

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT * Hr Total NYISO DAM Resid Loss (\$) * (-1)

Where:

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT =

Hr RT LSE Load (MWh) / {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO DAM Resid Loss (\$) =

Hr Total NYISO DAM Loss Cr to PS (\$) + {Hr Total NYISO DAM Loss Ch to LSE (\$) + Hr Total DAM LBMP Loss Ch: TC (\$) + Hr Total NYISO DAM TUC Loss Ch: TC (\$)}

LSE DAM Loss Residual

■ Settlement Scenario

- 'LSE A' purchased energy, meeting load requirements
 - 40.3555 MWh in HB 20 from NYISO Energy Market
- The total NYISO RT LSE Load is 18,000.9709 MWh
- The total NYISO RT Export MWh is 1,517.9988 MWh
- The total NYISO RT Wheel Through MWh is 0 MWh
- The total NYISO DAM Loss Credit to PS is \$7,877.90
- The total NYISO DAM Loss Charge to LSEs is \$ -14,459.36
- The total NYISO DAM LBMP Loss Charge to TCs is \$ -2,782.15
- The total NYISO DAM TUC Loss Charges to TCs is \$ -10,504.11

LSE DAM Loss Residual

■ Settlement Example

Hr DAM Resid Loss Stlmnt: LSE (\$) = $0.002068 * \$ -19,867.72 * (-1) = \41.08

Where:

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT = 0.002068
 $40.3555 / \{18,000.9709 + 1517.9988 + 0\}$

Hr Total NYISO DAM Resid Loss (\$) = $\$ -19,867.72$
 $\$7,877.90 + (\$-14,459.36 + \$2,782.15 + \$ -10,504.11)$

LSE is CREDITED \$41.08

LSE DAM Loss Residual

■ Summary

- A charge or credit to LSEs, to allocate any cash imbalance in NYISO's DAM Loss settlements
 - Based on RT Load Ratio Share
 - Calculated on Hourly Level

LSE DAM Energy and Loss Residual Settlements

Settlement Reference Material:

- **Tariff Reference**
 - MST
 - Rate Schedule 1, Section 15.1
 - OATT
 - Rate Schedule 1, Sections 6.1-6.1.15
- **Accounting and Billing Manual**
 - Section 8
- **Advisory Billing File**
 - Ancillary Services
 - Residual Adjustment \$
 - Hourly Bill Code 611
 - Daily Bill Code 813
- **DSS Corporate Report**
 - Settlement Details- Load Serving Entity - Residuals

LSE Residual Settlements

■ Settlement Name:

- DAM Energy Residuals
- DAM Loss Residuals
- **Balancing Market Energy Residuals**
- Balancing Market Loss Residuals
- Balancing Market Congestion Residuals

LSE Residual Settlements

- **LSE Balancing Market Energy Residual Description**
 - Designed to allocate any cash imbalance (charges or payments) in NYISO's Balancing Market Energy settlements, to the Market Participants purchasing Energy as LSEs

LSE Balancing Market Energy Residual

- **Settlement Eligibility**
 - LSEs will receive a charge or payment for Balancing Market Energy Residuals (\$) if:
 - LSE purchased energy to meet their load requirements from the NYISO Energy markets
 - Including Import and Internal Bilateral Transaction energy, purchased from 3rd parties.
 - Hr Total NYISO Bal Resid Energy (\$) < or > 0

LSE Balancing Market Energy Residual

■ Settlement Determinants

- Hr RT LSE Load (MWh)
- Hr Total NYISO RT LSE Load (MWh)
- Hr Total NYISO RT Export Trans (MWh)
- Hr Total NYISO RT WT Trans (MWh)

- Hr Total NYISO Bal Energy Cr to PS (\$)
- Hr Total NYISO Bal Energy Ch to LSE (\$)
- Hr Total NYISO Bal LBMP Energy Ch: TC (\$)

LSE Balancing Market Energy Residual

■ Settlement Intermediates

- Hr RT LSE Ld Ratio Sh: LSE, Exp, WT
- Hr Total NYISO Bal Resid Energy (\$)

■ Settlement Results

- Hr Bal Resid Energy Stlmnt: LSE (\$)

LSE Balancing Market Energy Residual

■ Settlement Algorithm

Hr Bal Resid Energy Stlmnt: LSE (\$) =

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT * Hr Total NYISO Bal Resid Energy (\$) * (-1)

Where:

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT =

Hr RT LSE Load (MWh) / {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Bal Resid Energy (\$) =

Hr Total NYISO Bal Energy Cr to PS (\$) + {Hr Total NYISO Bal Energy Ch to LSE (\$) + Hr Total Bal LBMP Energy Ch: TC (\$)}

LSE Balancing Market Energy Residual

■ Settlement Scenario

- 'LSE A' purchased energy, meeting load requirements
 - 40.3555 MWh in HB 3 from NYISO Energy Market
- The total NYISO RT LSE Load is 18,000.9709 MWh
- The total NYISO RT Export MWh is 1,517.9988 MWh
- The total NYISO RT Wheel Through MWh is 0 MWh
- The total NYISO Bal Energy Credit to PS is \$20,209.23
- The total NYISO Bal Energy Charge to LSEs is \$ - 25,374.37
- The total NYISO Bal LBMP Energy Charge to TCs is \$3,442.17

LSE Balancing Market Energy Residual

■ Settlement Example

Hr Bal Resid Energy Stlmnt: LSE (\$) = \$ 3.56
 $\$ -1,722.97 * .002068 * (-1)$

Where:

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT = .002068
 $40.3555 / \{18,000.9709 + 1,517.9988 + 0\}$

Hr Total NYISO Bal Resid Energy (\$) = \$ -1,722.97
 $\$20,209.23 + \{ (\$- 25,374.37) + \$3,442.17 \}$

LSE is CREDITED \$3.56

LSE Balancing Market Energy Residual

■ Summary

- A charge or credit to LSEs, to allocate any cash imbalance in NYISO's Balancing Market Energy settlements
 - Based on RT Load Ratio Share
 - Calculated on Hourly Level

LSE Residual Settlements

■ Settlement Name:

- DAM Energy Residuals
- DAM Loss Residuals
- Balancing Market Energy Residuals
- **Balancing Market Loss Residuals**
- Balancing Market Congestion Residuals

LSE Residual Settlements

- **LSE Balancing Market Loss Residual**
Description
 - Designed to allocate any cash imbalance (charges or payments) in NYISO's Balancing Market Loss settlements, to the Market Participants purchasing Energy as LSEs

LSE Balancing Market Loss Residual

■ Settlement Eligibility

- LSEs will receive a charge or payment for Balancing Market Loss Residuals (\$) if:
 - LSE purchased energy to meet their load requirements from the NYISO Energy markets
 - Including Import and Internal Bilateral Transaction energy, purchased from 3rd parties.
- Hr Total NYISO Bal Resid Energy (\$) < or > 0

LSE Balancing Market Loss Residual

■ Settlement Determinants

- Hr RT LSE Load (MWh)
- Hr Total NYISO RT LSE Load (MWh)
- Hr Total NYISO RT Export Trans (MWh)
- Hr Total NYISO RT WT Trans (MWh)

- Hr Total NYISO Bal Loss Cr to PS (\$)
- Hr Total NYISO Bal Loss Ch to LSE (\$)
- Hr Total NYISO Bal LBMP Loss Ch: TC (\$)
- Hr Total NYISO Bal TUC Loss Ch: TC (\$)

LSE Balancing Market Loss Residual

■ Settlement Intermediates

- Hr RT LSE Ld Ratio Sh: LSE, Exp, WT
- Hr Total NYISO Bal Resid Loss (\$)

■ Settlement Results

- Hr Bal Resid Loss Stlmnt: LSE (\$)

LSE Balancing Market Loss Residual

■ Settlement Algorithm

Hr Bal Resid Loss Stlmnt: LSE (\$) =

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT * Hr Total NYISO Bal Resid Loss (\$) * (-1)

Where:

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT =

Hr RT LSE Load (MWh) / {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Bal Resid Loss (\$) =

Hr Total NYISO Bal Loss Cr to PS (\$) + {Hr Total NYISO Bal Loss Ch to LSE (\$) +

Hr Total Bal LBMP Loss Ch: TC (\$) + Hr Total NYISO Bal TUC Loss Ch: TC (\$)}

LSE Balancing Market Loss Residual

■ Settlement Scenario

- ‘LSE A’ purchased energy, meeting load requirements
 - 40.3555 MWh in HB 3 from NYISO Energy Market
- The total NYISO RT LSE Load is 18,000.9709 MWh
- The total NYISO RT Export MWh is 1,517.9988 MWh
- The total NYISO RT Wheel Through MWh is 0 MWh
- The total NYISO Bal Loss Credit to PS is \$ -943.62
- The total NYISO Bal Loss Charge to LSEs is \$607.54
- The total NYISO Bal LBMP Loss Charge to TCs is \$ -450.30
- The total NYISO Bal TUC Loss Charge to TCs is \$72.56

LSE Balancing Market Loss Residual

■ Settlement Example

$$\text{Hr Bal Resid Loss Stlmnt: LSE (\$)} = \$ 1.48$$

$$(\$ -713.82) * .002068 * (-1)$$

Where:

$$\text{Hr RT LSE Ld Ratio Sh: LSE, Exp, WT} = .002068$$

$$40.3555 / \{18,000.9709 + 1,517.9988 + 0\}$$

$$\text{Hr Total NYISO Bal Resid Loss (\$)} = \$ -713.82$$

$$(\$ -943.62) + \{\$607.54 + (\$ - 450.30) + \$72.56\}$$

LSE is CREDITED \$1.48

LSE Balancing Market Loss Residual

■ Summary

- A charge or credit to LSEs, to allocate any cash imbalance in NYISO's Balancing Market Loss settlements
 - Based on RT Load Ratio Share
 - Calculated on Hourly Level

LSE Residual Settlements

- **Objectives Per Settlement Name:**
 - DAM Energy Residuals
 - DAM Loss Residuals
 - Balancing Market Energy Residuals
 - Balancing Market Loss Residuals
 - **Balancing Market Congestion Residuals**

LSE Residual Settlements

- **LSE Balancing Market Congestion Residual Description**
 - Designed to allocate any cash imbalance (charges or payments) in NYISO's Balancing Market Congestion settlements, to the Market Participants purchasing Energy as LSEs

LSE Balancing Market Congestion Residual

■ Settlement Eligibility

- LSEs will receive a charge or payment for Balancing Market Congestion Residuals (\$) if:
 - LSE purchased energy to meet their load requirements from the NYISO Energy markets
 - Including Import and Internal Bilateral Transaction energy, purchased from 3rd parties.
 - Hr Total NYISO Bal Resid Energy (\$) < or > 0

LSE Balancing Market Congestion Residual

■ Settlement Determinants

- Hr RT LSE Load (MWh)
- Hr Total NYISO RT LSE Load (MWh)
- Hr Total NYISO RT Export Trans (MWh)
- Hr Total NYISO RT WT Trans (MWh)
- Hr Total NYISO Bal Cong Cr to PS (\$)
- Hr Total NYISO Bal Cong Ch to LSE (\$)
- Hr Total NYISO Bal LBMP Cong Ch: TC (\$)
- Hr Total NYISO Bal TUC Cong Ch: TC (\$)
- Hr Ttl NYISO RT M2M Coord Ch to RTO (\$)

LSE Balancing Market Congestion Residual

■ Settlement Intermediates

- Hr RT LSE Ld Ratio Sh: LSE, Exp, WT
- Hr Total NYISO Bal Resid Cong (\$)

■ Settlement Results

- Hr Bal Resid Cong Stlmnt: LSE (\$)

LSE Balancing Market Congestion Residual

■ Settlement Algorithm

Hr Bal Resid Cong Stlmnt: LSE (\$) =

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT * Hr Total NYISO Bal Resid Cong (\$) * (-1)

Where:

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT =

Hr RT LSE Load (MWh) / {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Bal Resid Cong (\$) =

Hr Total NYISO Bal Cong Cr to PS (\$) + {Hr Total NYISO Bal Cong Ch to LSE (\$) + Hr Total Bal LBMP Cong Ch: TC (\$) + Hr Total NYISO Bal TUC Cong Ch: TC (\$) + Hr Ttl NYISO RT M2M Coord Ch to RTO (\$) }

LSE Balancing Market Congestion Residual

■ Settlement Scenario

- 'LSE A' purchased energy, meeting load requirements
 - 40.3555 MWh in HB 3 from NYISO Energy Market
- The total NYISO RT LSE Load is 18,000.9709 MWh
- The total NYISO RT Export MWh is 1,517.9988 MWh
- The total NYISO RT Wheel Through MWh is 0 MWh
- The total NYISO Bal Cong Credit to PS is \$ -14,593.62
- The total NYISO Bal Cong Charge to LSEs is \$13,560.24
- The total NYISO Bal LBMP Cong Charge to TCs is \$ -2,060.50
- The total NYISO Bal Cong TUC Charge to TCs is \$412.76
- Hr Ttl NYISO RT M2M Coord Charges to RTO is \$0

LSE Balancing Market Congestion Residual

■ Settlement Example

Hr Bal Resid Cong Stlmnt: LSE (\$) = **\$ 5.54**
 $\$-2,681.12 * .002068 * (-1)$

Where:

Hr RT LSE Ld Ratio Sh: LSE, Exp, WT = **.002068**
 $40.3555 / \{18,000.9709 + 1,517.9988 + 0\}$

Hr Total NYISO Bal Resid Cong (\$) = **\$-2,681.12**
 $\$ -14,593.62 + \{\$13,560.24 + (\$-2,060.50) + \$412.76 + \$0\}$

LSE is CREDITED **\$5.54**

LSE Balancing Market Congestion Residual

■ Summary

- A charge or credit to LSEs, to allocate any cash imbalance in NYISO's Balancing Market Congestion settlements
 - Based on RT Load Ratio Share
 - Calculated on Hourly Level

LSE Balancing Market Energy, Loss and Congestion Residual Settlement

Settlement Reference Material:

- **Tariff Reference**
 - MST
 - Rate Schedule 1, Section 15.1
 - OATT
 - Rate Schedule 1, Sections 6.1-6.1.15
- **Accounting and Billing Manual**
 - Section 8
- **Advisory Billing File**
 - Ancillary Services
 - Residual Adjustment \$
 - Hourly Bill Code 611
 - Daily Bill Code 813
- **DSS Corporate Report**
 - Settlement Details- Load Serving Entity - Residuals