# Regulation Revenue Adjustment Overview

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# Regulation Revenue Adjustment

- Description
  - ***Intended to properly compensate Power Suppliers for balancing energy if they are also providing Regulation Service in the Real Time Market.***
  - ***RRA can be…***
    - **A payment**

    **or**

    - **A charge**

# Balancing Energy Basis

- A generator's RTD basis (MW) is used in the calculation of its Balancing Energy settlement.
  - *Non-Regulating Generators*
    - Minimum ( RTD Gen Adjusted Energy MW*, RTD Basepoint MW + 3% Upper Operating Limit)
  - *Regulating Generators*
    - Minimum ( RTD Gen Adjusted Energy MW, RTD Avg AGC Basepoint MW)

**** RTD Gen Adjusted Energy MW is the output of a Generator as measured by PTS adjusted so the hourly integrated PTS values equal the hourly Revenue Quality meter value***

# Regulation Revenue Adjustment

- ***Settlement Eligibility***

**Power Suppliers will be eligible for the Regulation Revenue Adjustment if:**

- **The generator was scheduled for Regulation Service by RTD**
  - Reg Avail (MW) > 0

**and**

- **The generator was regulating either up or down from its RTD basepoint**
  - RTD Avg AGC Basepoint (MW) < > RTD Basepoint (MW)

# Regulation Revenue Adjustment

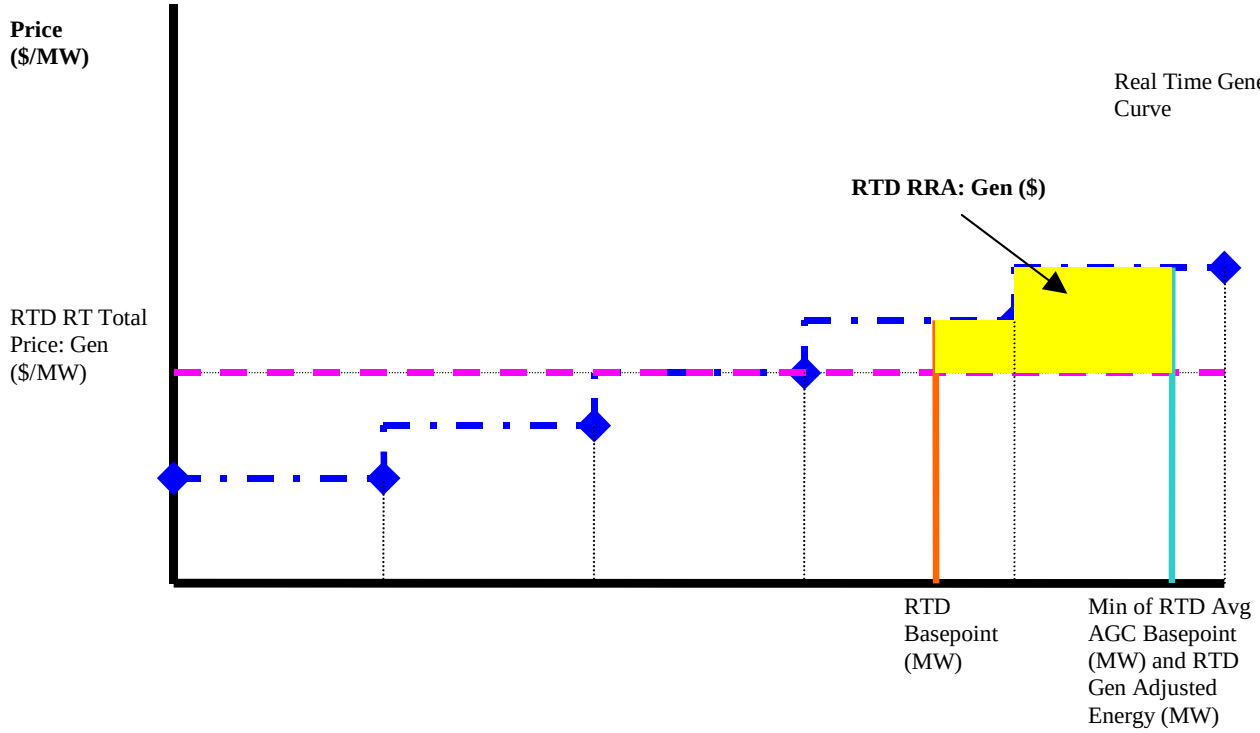
- **Settlement Type 1:**
  - ***RTD Avg AGC Basepoint (MW) > RTD Basepoint (MW)***

    ***(Regulating Up)***

  - ***RRA Payment if…***
    - **Energy Bid Cost of Gen > Gen LBMP**
  - ***RRA Charge if…***
    - **Energy Bid Cost of Gen < Gen LBMP**

# Regulating Up Diagram

If RTD Avg AGC Basepoint (MW) is greater than RTD Basepoint (MW) and RTD RT Total Price: Gen ($/MW) is less than the energy bid, the RTD RRA: Gen ($) will be a payment to the generator, illustrated as follows:



# Regulating Up Bid

- The bid used in the calculation will be the lesser of the energy bid submitted by the generator or the Reference Bid plus $100.

# Regulation Revenue Adjustment

- **Settlement Algorithm – Type 1 (Regulating Up)**

RTD RRA: Gen ($) =

[{Bid Cost from RTD Basepoint MW to Min(RTD Gen Adj Energy (MW), RTD Avg AGC Basepoint (MW))}

- {Gen RTD RT Total Price: Gen ($) * ((Min(RTD Gen Adj Energy (MW), RTD Avg AGC Basepoint (MW)) - RTD Basepoint (MW))}] * RTD Interval Length/ 3600

# Regulation Revenue Adjustment

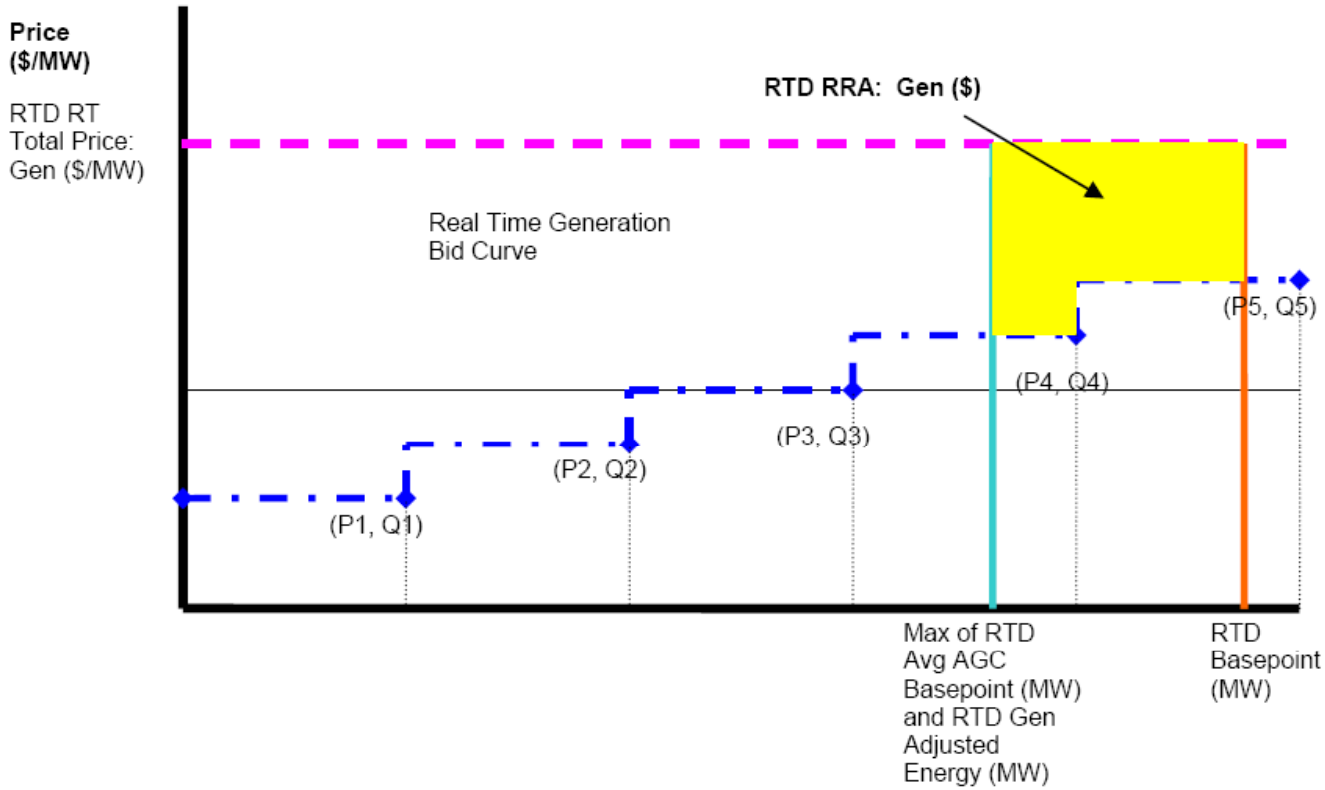
- **Settlement Type 2:**
  - ***RTD Avg AGC Basepoint (MW) < RTD Basepoint (MW)***

    ***(Regulating Down)***

  - ***RRA Payment if…***
    - **Energy Bid Cost of Gen < Gen LBMP**
  - ***RRA Charge if…***
    - **Energy Bid Cost of Gen > Gen LBMP**

# Regulating Down Diagram

If RTD Avg AGC Basepoint (MW) is less than RTD Basepoint (MW) and the RTD RT Total Price: Gen ($/MW) is greater than the bid, the RTD RRA: Gen ($) will be a payment to the generator, illustrated as follows:



# Regulating Down Bid

- The bid used in the calculation will be the higher of the energy bid submitted by the generator or the Reference Bid minus $100.

# Regulation Revenue Adjustment

- **Settlement Algorithm – Type 2 (Regulating Down)**

RTD RRA: Gen ($) =

[{Bid Cost from Max(RTD Gen Adj Energy (MW), RTD Avg AGC Basepoint (MW)) to RTD Basepoint (MW)}

- {Gen RTD RT Total Price: Gen ($) * (RTD Basepoint (MW) – Max(RTD Gen Adj Energy (MW), RTD Avg AGC Basepoint (MW))}] * RTD Interval Length/ 3600 * -1

# Regulation Revenue Adjustment

- **Settlement Scenario Type 2**
  - ***'Generator A' provided RT Energy and Regulation Availability***
    - **RTD Gen Adj Energy = 82 MW**
    - **RTD Avg AGC Basepoint = 85 MW**
    - **RTD Basepoint = 98 MW**
  - ***RT LBMP $ = $112***
  - ***Interval Length = 300***
  - ***Bid Cost = $1300***
    - **0-40 MW = $50**
    - **41-80 MW = $75**
    - **81-120 MW = $100**

# Regulation Revenue Adjustment

- **Settlement Algorithm – Type 2**
- RTD RRA : Gen ($) =

  (Bid Cost Saved – LBMP Revenue Not Received) * Time weighting * -1

  =[{Bid Cost from Max(82, 85) to 98} - {$112 * (98 - Max(82, 85)}] * 300/3600*-1

  =[{13 * $100} – {$112 * (98-85)}] * 300/3600 *-1

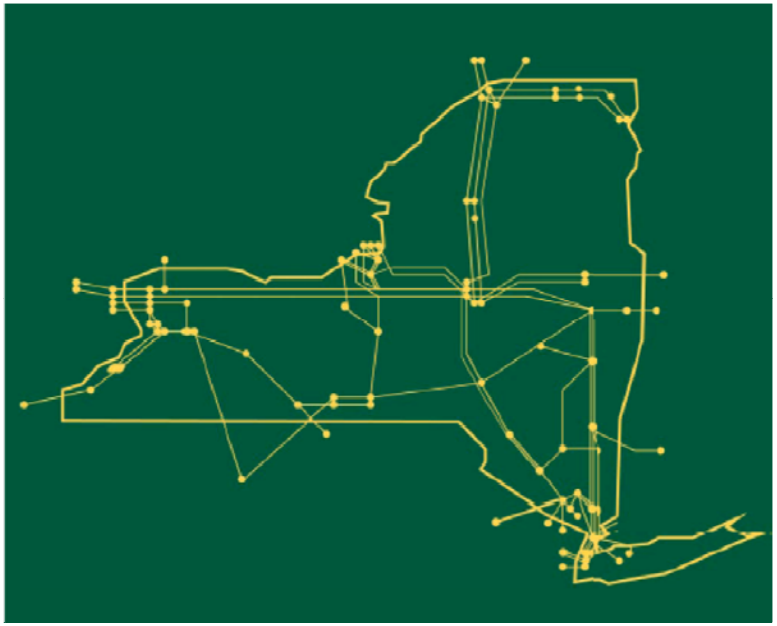
  =[{$1300} – {$1456}] * 300/3600 * -1

  =[ -$156] * 300/3600 *-1 = $13 (RRA paid to gen.)

# Conclusion

## 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.



*www.nyiso.com*