



Wholesale Market Alignment with NY REV Update

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NY REV Background

- **The NYISO and its stakeholders prioritized the *Wholesale Market Alignment with the NY PSC REV Proceeding* project in 2016**
 - *This project will develop concepts for aligning the NYISO's markets with the REV initiatives.*
 - *The NYISO anticipates participating in REV development activities, advancing of wholesale market design concepts, and supporting for applicable pilot projects.*
 - *Pilot projects will involve collaboration with DSPs and other external organizations to demonstrate the potential future structure of market participation for distributed energy resources and prepare for the integration of new resources into the NYISO market.*
- **This presentation provides some background on the NY REV proceeding and NYISO's involvement to date**

NY REV Background

- **April 25, 2014 – NYS PSC issued an Order Instituting Proceeding for the REV (Case 14-M-0101)**
- **REV focuses on:**
 - *Enhancing customer knowledge and developing tools to support effective management of the total energy bill;*
 - *Market animation and leveraging customer contributions;*
 - *System wide efficiency;*
 - *Fuel and resource diversity;*
 - *System reliability and resiliency; and*
 - *Reduction of carbon emissions.*

NY REV Background

- **January 8, 2015 – Administrative Law Judge Bielawski issued a ruling that ultimately created the Market Design and Platform Technology (MDPT) working group**
 - *Rocky Mountain Institute (RMI), New York State Smart Grid Consortium (NYSSGC), the NYISO and 28 other organizations participated in the working group*
- **Based on MDPT discussions, the DPS, RMI and NYSSGC drafted a report that was released July 15, 2015. Final Report issued August 17, 2015.**

NY REV Background

- **February 26, 2015 – NYS PSC issues *Order Adopting Regulatory Policy Framework and Implementation Plan***
 - ***This order described a comprehensive vision including (but not limited to):***
 - Developing guidance for demonstration and non-wires alternative projects;
 - Establishing a Benefit-Cost Analysis Framework;
 - Defining the Distribution Service Platform via a Distributed Platform Implementation Plan;
 - Developing Energy Efficiency via Utility Efficiency Transition Implementation Plans;
 - Establishing a Straw Proposal for Utility Ratemaking Issues (Separate Track 2 Order);
 - Creating Utility Demand Response Tariffs (Case 14-E-0423);
 - Examining alternatives to net metering (Cases 14-E-0151/15-E-0751);
 - Developing Community Choice Aggregation Rules (Case 14-M-0224);
 - Review of ESCO practices (Case 12-M-0476);
 - Facilitating Large Scale Renewables (Case 15-E-0302); and
 - Improving Interconnection Processes;

NY REV Background

- **May 1, 2015 – Utilities file opportunities for Non-Wires Alternatives with NYS PSC**
- **June 1, 2015 - NYS PSC institutes a large-scale renewable (LSR) proceeding**
 - ***Case 15-E-0302 - In the Matter of the Implementation of a Large-Scale Renewable Program***
- **July 1, 2015 – Utilities file REV Demonstration projects with NYS PSC**
- **December 23, 2015 – NYS PSC establishes case 15-E-0751 *Value of DERs***

NY REV Background

- **January 21, 2016 – NYS PSC issues order establishing Benefit Cost Analysis Framework and a separate order expanding LSR proceeding**
- **April 20, 2016 – NYS PSC issues order adopting DSIP guidance**
 - *The NYISO is working with the Joint Utilities on developing the DSIPs*
- **May 19, 2016 – NYS PSC issues order adopting a Ratemaking and Utility Revenue Model Policy Framework**

Developing the DSIPs

- **Joint Utilities have established a stakeholder process to help shape the DSIP filings that are due July 1, 2016 and November 1, 2016**
 - *The Joint Utilities are: Central Hudson Gas & Electric, Consolidated Edison, National Grid, New York State Electric & Gas, Orange & Rockland, Rochester Gas & Electric*
- **The stakeholder groups include Distribution Planning, Grid Operations and Market Operations**
 - *The NYISO is participating in all stakeholder groups*
 - *These groups meet regularly*

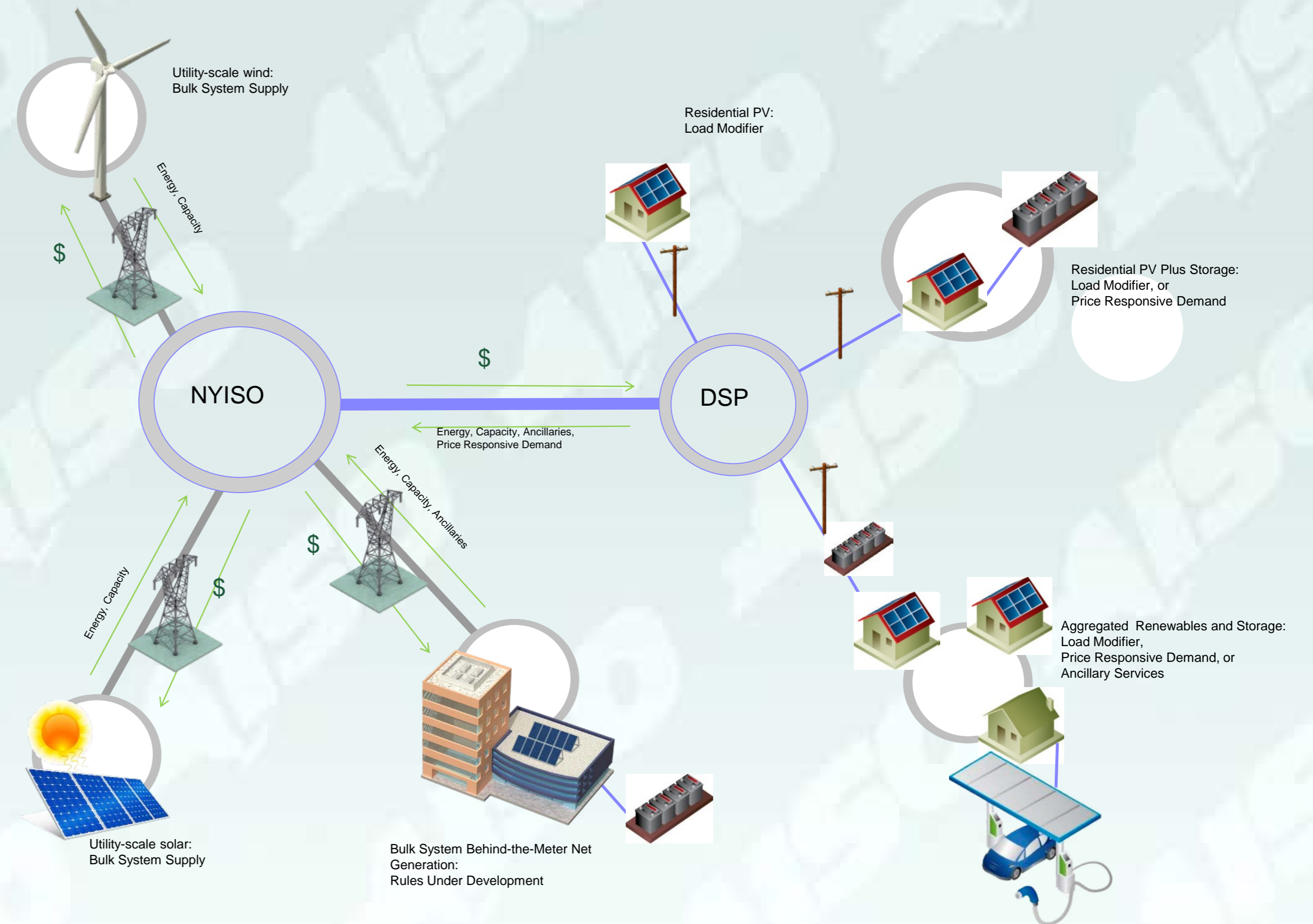
Distribution Planning Engagement Group

- **This group is focused on the following topics:**
 - *Improved Interconnection Process*
 - *Hosting Capacity Methodology*
 - *Non-Wires Alternative Suitability*
 - *Demand Forecasting*
 - *DER Forecasting*
 - *Probabilistic Planning*
 - *Load Flow Analysis*

Grid Operations Engagement Group

- **This group is focused on the following topics:**

- **System (Grid) Data**
- **Monitoring & Control**
- **Cyber Security**
- **NYISO/DSP Roles, Responsibilities, and Interactions**

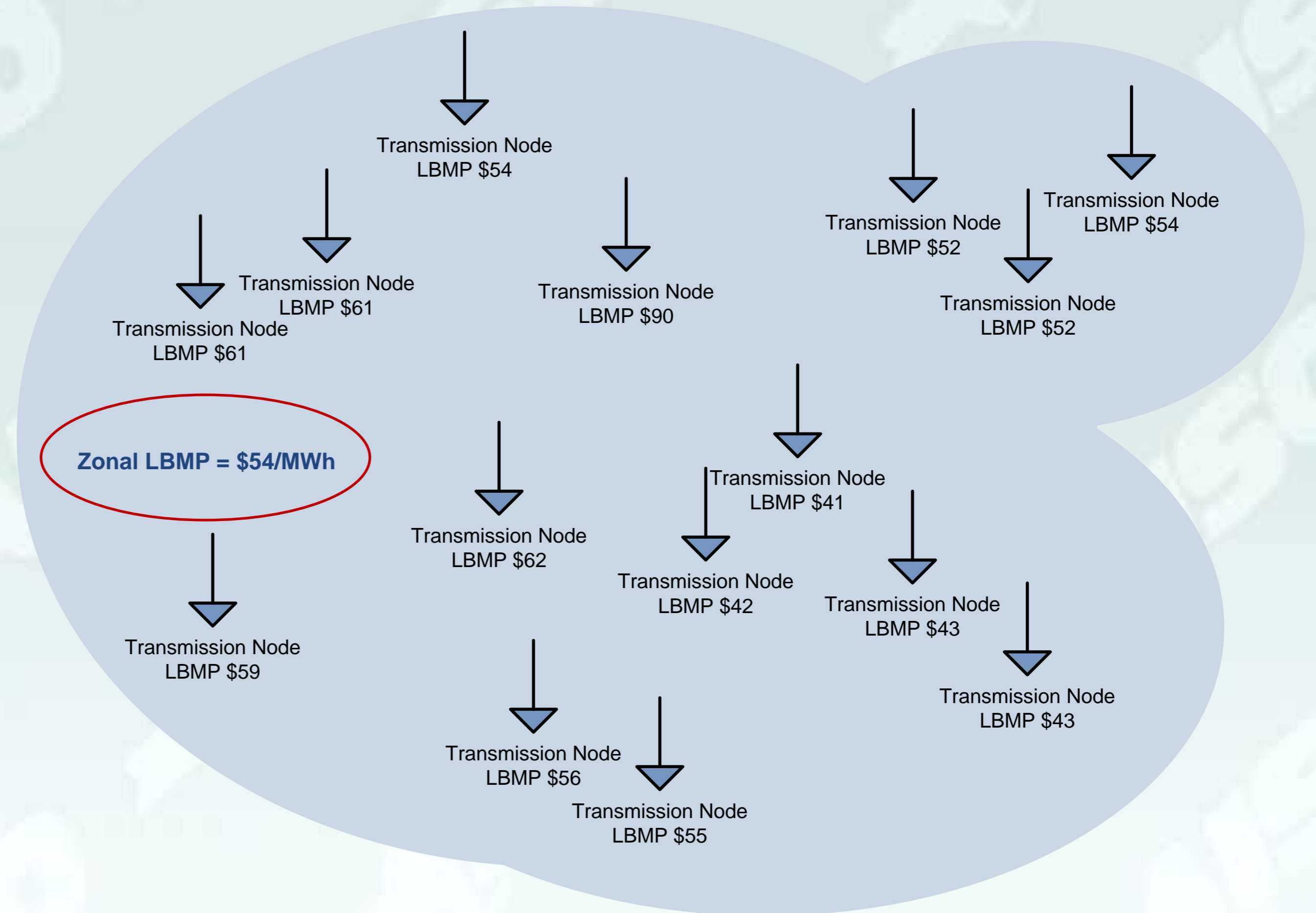


Market Operations Engagement Group

- **This group is focused on the following topics:**
 - ***Granular Pricing***
 - The NYISO is working with the Joint Utilities to expose a select set of load bus pricing
 - ***Customer Data***
 - ***DER Sourcing Approaches***
 - ***Electric Vehicle Supply Equipment (EVSE)***

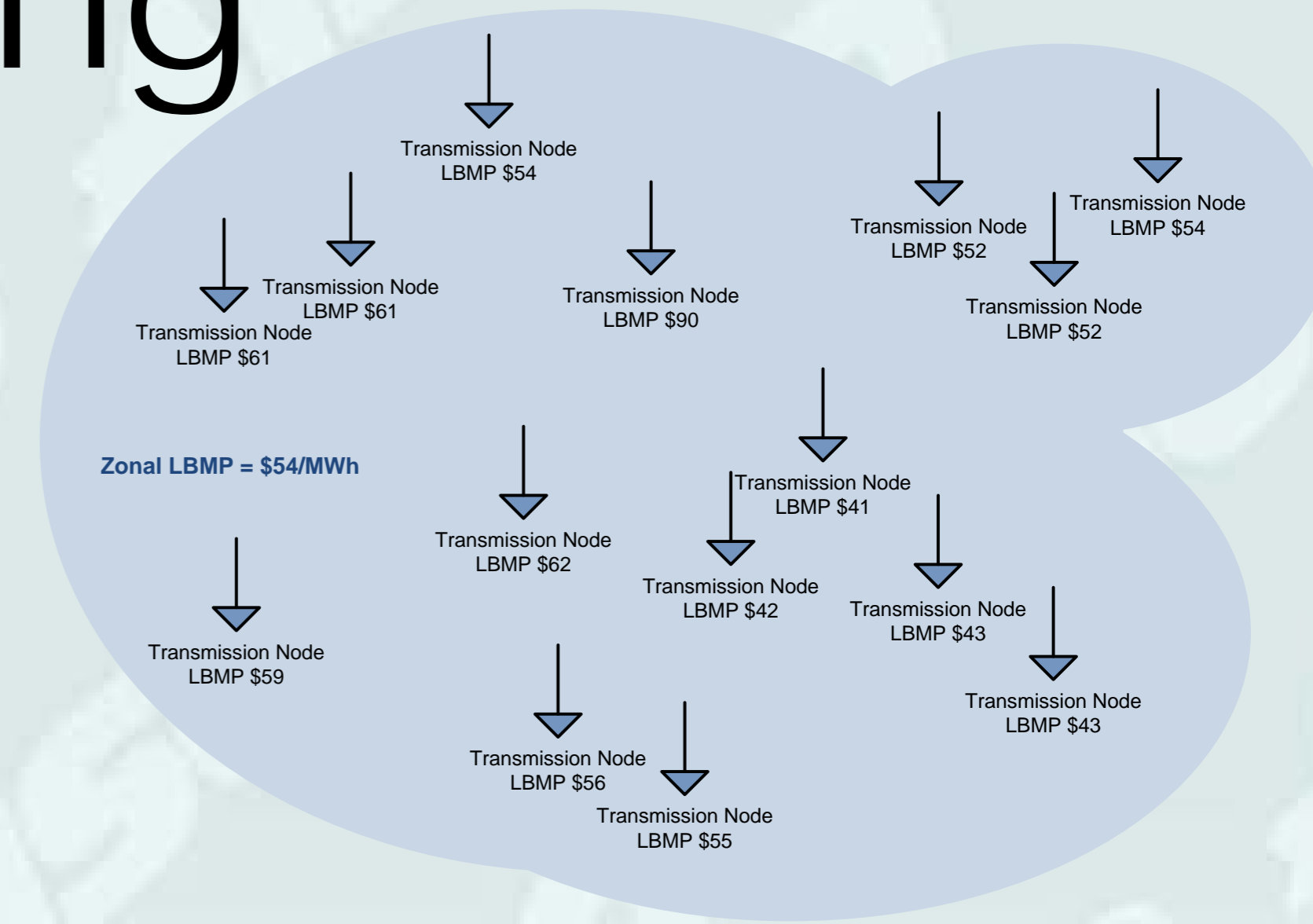
Granular Pricing

- **Developing the Zonal Load Weighted Price**
- **Transmission Load Bus LBMP (\$60) is weighted using the Bus Load (10MW) divided by the Zonal Load (1000MW)**
- **Bus to Zone Weighting Example $\$60 * (10/1000) = \0.60**
- **Repeat for all buses within the zone and sum = Zonal LBMP**



Granular Pricing

- **Providing additional transparency**
 - *There has been much interest throughout the REV discussions on having the NYISO provide additional location granularity for its LBMPs*
- **Before July 2016, the NYISO will provide a subset of load bus prices**
- **The NYISO will do this initially by creating pseudo generators within the model so that RTD, RTC, and SCUC will calculate that bus price**
- **These prices will be available within the Generator LBMP postings on the NYISO's OASIS web pages.**

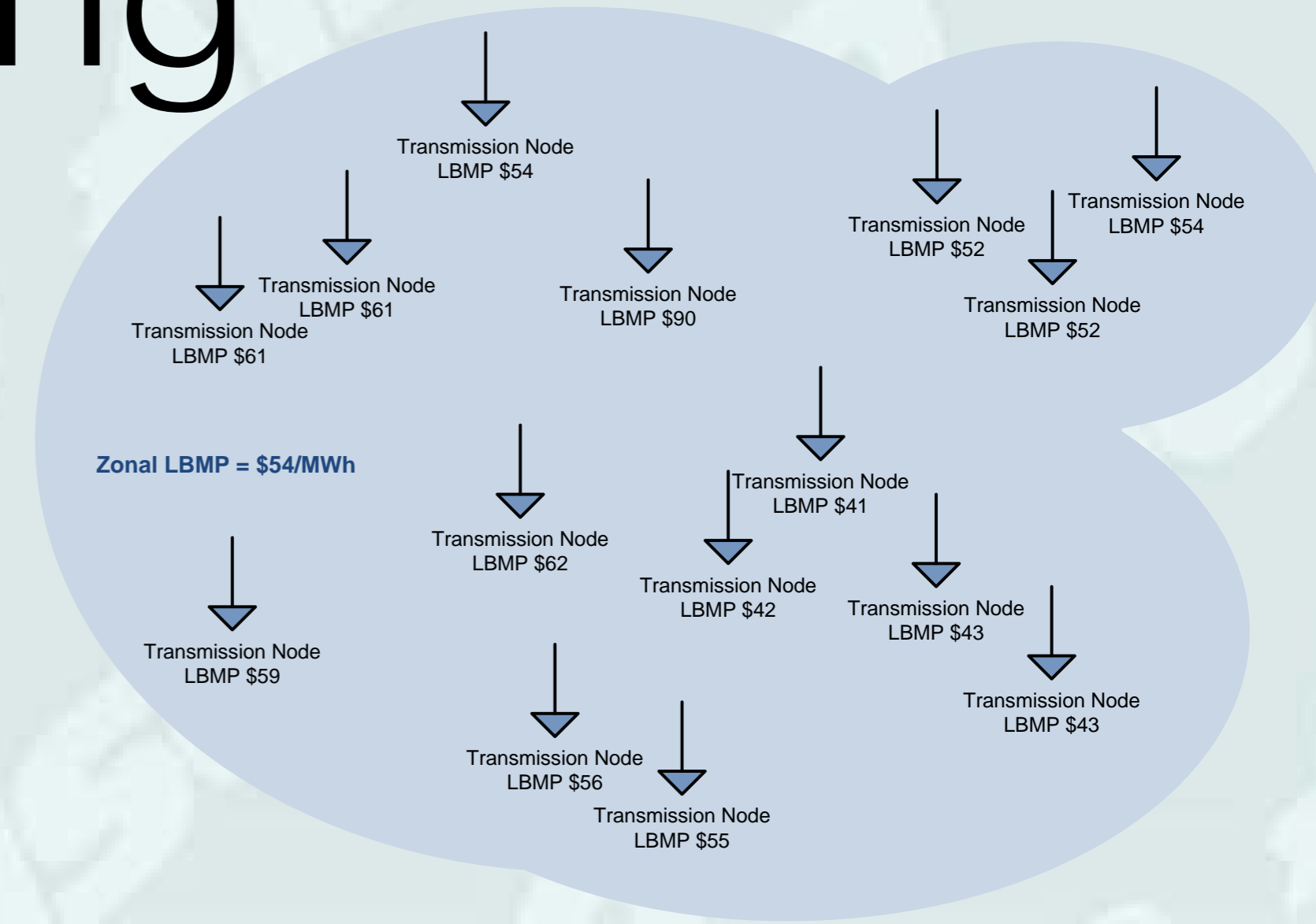


Granular Pricing

- **Providing additional transparency**
 - ***The list of initial pseudo gens***

DUNWOODS_138KV_38W08_REV_LBMP
E179THST_138KV_TB4_REV_LBMP
EASTVIEW_138KV_38W32_REV_LBMP
FARRAGUT_138KV_32071_REV_LBMP
GREENWD_138KV_38B11_REV_LBMP
MILLWOOD_138KV_38W41_REV_LBMP
MOTTHAVN_138KV_9M4_REV_LBMP
PARKCHTR_138KV_TB2S_REV_LBMP
W49TH_ST_138KV_38M43_REV_LBMP

E.WALDEN_115KV_TR_1_REV_LBMP
FORGEBRK_115KV_TR1_2_REV_LBMP
VINEGAR_115KV_917_CH_LD_REV_LBMP
ELM_ST_23KV_LD_REV_LBMP
PACKARD_115KV_ADAMS_187_REV_LBMP
N.HEMPST_138KV_BK345_REV_LBMP
WHAVSTOR_138KV_BK127_REV_LBMP



Names subject to change

Additional Related Efforts

- **The NYISO is ...**
 - *supporting the Joint Utilities REV demonstration project efforts*
 - *working with stakeholders to develop a DER Roadmap for wholesale markets that complements the NYS REV efforts but also represents sensible market enhancements independent of REV*
 - *proposing several REV related efforts to ensure the NYISO's markets are ready for the market animation that REV envisions including*
 - **Meter Data Policy**
 - **Energy Storage Integration & Optimization**
 - **Granular Pricing & Market Price Delivery**
 - **NYISO Pilot Framework**

Questions?



- **The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefit to consumers by:**
 - *Maintaining and enhancing regional reliability*
 - *Operating open, fair and competitive wholesale electricity markets*
 - *Planning the power system for the future*
 - *Providing factual information to policy makers, stakeholders and investors in the power system*
- **www.nyiso.com**