



Distributed Energy Resource Measurement & Verification

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Distributed Energy Resource Roadmap Workshop

September 22, 2016

Albany, NY

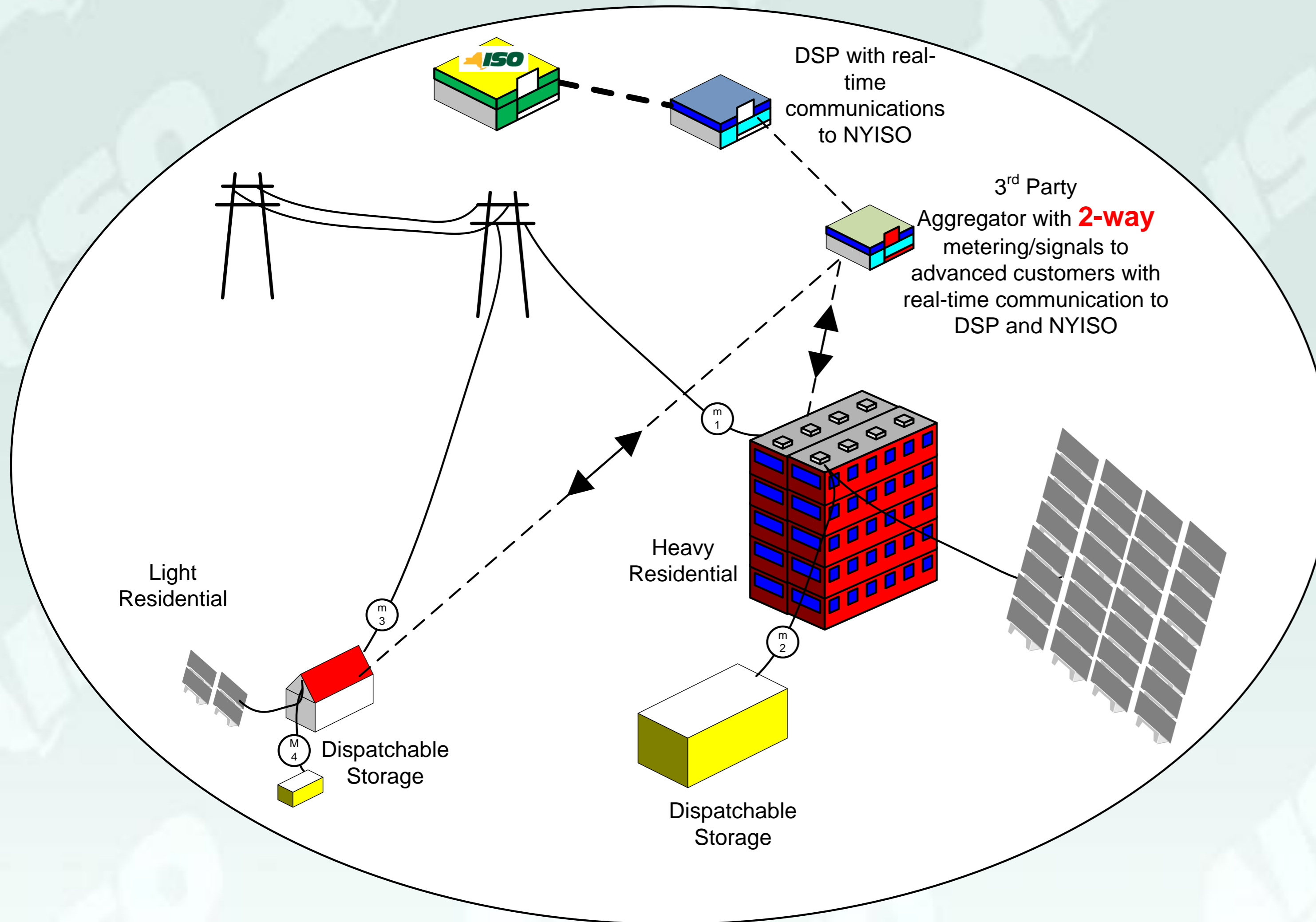
Key Objectives

- **Accurately measure and verify DER performance**
 - *Needed for maintaining grid reliability, market efficiency, and for compensating DER for the services provided*
- **Accommodate various DER technologies and customer load profiles**
 - *Reduces barriers for participation*

DER Metering & Telemetry

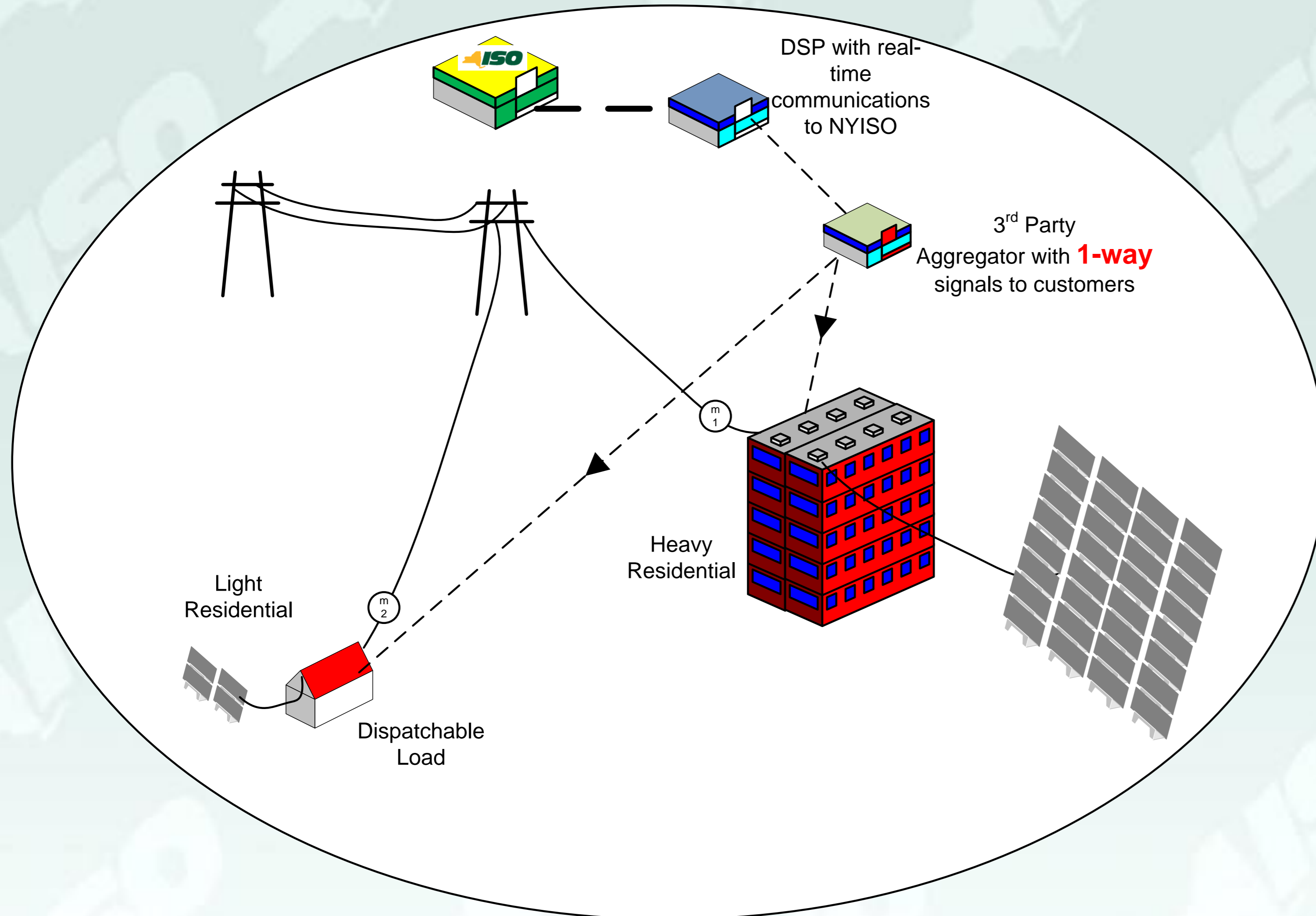
- **Align metering and telemetry requirements with the services provided by the DER**
- **DER participating in the energy, ancillary services, and/or regulation service markets will need to have real-time telemetry**
 - *Real-time telemetry at aggregation level and after-the-fact revenue meter data reporting at resource level*
 - *The NYISO will determine the appropriate thresholds for metering and baselines for DER*
 - *The NYISO intends to explore allowing real-time telemetry from a sample set of resources within a DER aggregation (i.e., “sampling”)*
- **SCR and EDRP will continue to require only after-the-fact revenue meter data reporting**

DER Program Metering – Example



Participant(s)	Small to large size residential customers
Features	Sophisticated load and sophisticated storage
Metering	Real-time metering with telemetry
Signaling	Capable of highly sophisticated notifications to curtail load and/or activate other services as instructed
Dispatchable	Load & Storage
Aggregated	Yes
Services	Energy, Capacity, Reserves, and Regulation as qualified
Telemetry Communications Path	Aggregator -> DSP -> NYISO

SCR/EDRP Metering – Example



Participant(s)	Small to large size residential customers
Features	Partially sophisticated load
Metering	Interval metering
Signaling	Partially sophisticated notifications to curtail load
Dispatchable	Partial load
Aggregated	Yes
Services	Energy and possibly Capacity (EDRP or SCR)
Telemetry Communications Path	N/A

Baselines

- **DER baseline estimates resource's typical usage/output absent the DER dispatch**
 - *DER performance is evaluated against this baseline usage/output*
- **Design baselines to accurately measure DER performance accommodating various DER technologies, customer load profiles, and services provided**
 - *Curtailable load, generation, storage, or various combinations*
 - *Net load or net generation*
 - *Individual resources or aggregations*
 - *Energy, ancillary services, and/or regulation service*

Meter Data Policy

- **Supporting initiative in 2017 to study**
 - *“The NYISO will work with stakeholders, the NYPSC, and Meter Data Providers to develop a set of policies and rules to clearly establish the NYISO’s role in defining, collecting, and validating resource meter data with the appropriate level of precision and accuracy.”*



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*

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