

# Demand-Side Ancillary Service Program (DSASP)

Presentation to PRLWG – January 30, 2006

# DSASP Current Status

- ✓ **Business Issue Discovery – Complete**  
(Pending Internal Review/Comment)
- ✓ **Formal Discovery - In Progress**
- ✓ **Internal/External Business Views – In Progress**
- ✓ **High-Level Requirements - In Progress**
- ✓ **High-Level Resource Estimates – To Be Assigned**
- ✓ **Cost-Benefit Analysis – To Be Assigned**

# Business Impacts

- ✓ **Participant Eligibility**
- ✓ **Participant Registration Rules and Process**
- ✓ **Participant Configuration – CIM/Ranger**
- ✓ **Participant Configuration - Metering**
- ✓ **Participant Bidding**
- ✓ **Demand-Side Scheduling**
- ✓ **Energy Management System**
- ✓ **Load Forecast**
- ✓ **Billing and Settlements**
- ✓ **CI, DSS, BAS Simulator**
- ✓ **Credit**

# Participant Eligibility

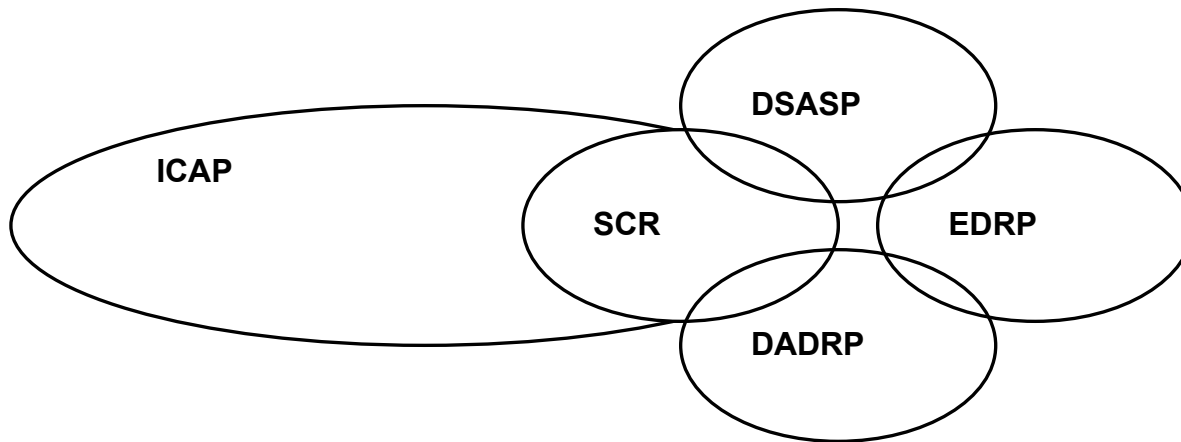
- ✓ Participants must be able to respond to NYISO Dispatch.
- ✓ Participants must have new telemetry to measure load curtailment (**ResponseMW**) during a reserve pickup and must be in compliance with NERC Disturbance Control Standards (DCS). This signal must provide a positive MW reading when the participant is responding to a reserve pickup and zero at all other times.

*(This requirement is in addition to existing telemetry to measure energy consumed by load (NetMW)).*

- ✓ Participants must verify capability to provide service via periodic tests.
- ✓ Participants must be able to provide a 2 MW minimum reserve pickup (**ResponseMW**).
- ✓ For 10-Minute (Spinning or Non-synchronized) Reserve, a full response to NYISO Reserve Pickup required within 10 minutes and must perform for at least 30 minutes. For 30-Minute Reserve, a full response is required within 30 minutes and must perform for at least an hour.

# Participant Registration Rules and Process

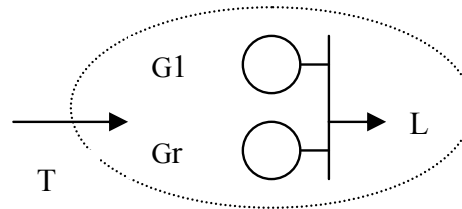
Figure 1 - Registration Relationships Among Demand-Response Programs



# Participant Configuration – CIM/Ranger

- ✓ **The participant will be modeled as a generator, similar to how providers are defined to SCUC for DADRP.**
- ✓ **For the purposes of loads participating in the proposed DSASP, no model or scheduling distinction will be made between loads that actually curtail and loads that appear to reduce load through self-supply via on-site generation.**

# Correcting for Metering of DSASP Participants



At any point in time, load in the zone (or subzone) is equal to the sum of internal generation plus tie flows:

$$L = G1 + Gr + T \quad [1]$$

Since  $Gr$  is zero except for reserve pickups,  $L = G1 + T$

When a reserve pickup occurs, the DSASP resource will drop by  $Gr$  MW. The load reduction will result in a drop in the combined ( $G1 = T$ ) generation; for purposes of the example, assume that the reduction in load only affects the tie flow. During a reserve pickup, the load/generation balance must be:

$$L - Gr = G1 + Gr + (T - Gr) - Gr \quad [2]$$

# Participant Bidding

- ✓ **Participant must have an incremental energy bid with startup, minimum generation and minimum run time to represent supplier costs. Post-SMD2, ancillary service is not bid separate since energy and reserve schedules are now co-optimized. The existing bidding screens will remain unchanged. DSASP participants must bid as ISO-Committed Flexible or Self-Committed Flexible Units to be considered for reserve.**
- ✓ **Although SMD2 design supports participation in all ANCILLARY SERVICE MARKETS, initially, DSASP participants will only be allowed to bid in the 10 minute non-synchronous and 30 minute categories due to current Reliability Rules.**
- ✓ **DSASP Participants will use the existing MIS Generation Resource Parameter Displays, Bidding Displays, and Upload/Download Templates.**
- ✓ **User Manuals will have to be reviewed and where parameters are specified for DADRP Participants currently, there will have to be modifications to include the proposed DSASP Participants as well.**



# Demand-Side Scheduling

The possible states are as follows:

- ✓ **DSASP participant is scheduled for reserves and reserve pickup called before SCR/EDRP activation. Participant is expected to respond as a DSASP provider.**
- ✓ **DSASP participant is scheduled for reserves, SCR/EDRP activation is called, and reserve pickup called within 2-hour window between SCR/EDRP notification and start time of the SCR/EDRP event. Same as above – participant should respond as a DSASP provider.**
- ✓ **SCR/EDRP activation is called before DSASP participant scheduled for reserves. Participant should remove any unscheduled DSASP offers from the bid box for the expected duration of the SCR/EDRP event.**

# Energy Management System (1 of 2)

## Definitions

### NetMW

Metered Load MW (Analogous to instantaneous load measurement supplied today.)

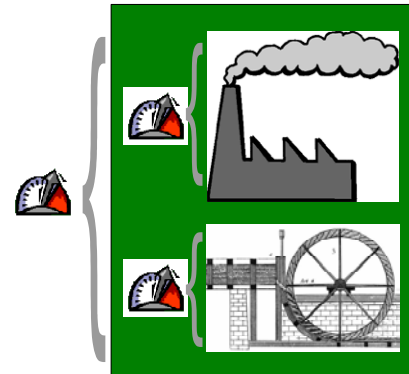
### ResponseMW

New Metered Response MW, i.e.. Load Curtailment

### DemandMW

NetMW adjusted by ResponseMW

$$\text{DemandMW} = \text{NetMW} + \text{ResponseMW}$$



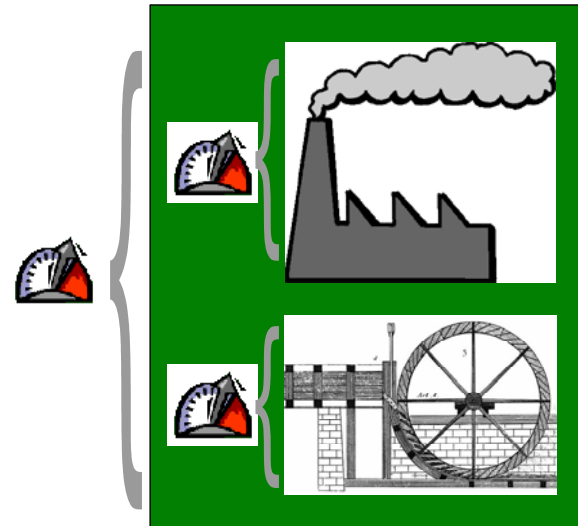
# Energy Management System (2 of 2)

- ✓ **DemandMW** will be calculated every 6 seconds, in the EMS:

$$\text{DemandMW} = \text{NetMW} + \text{ResponseMW}$$

- ✓ The **ResponseMW** will be zero normally and non-zero when the load responds to a reserve pickup.

- ✓ The **DemandMW** will be used subsequently in the settlement to calculate payment by the load for energy consumed by the load.



# Load Forecast

- ✓ **EMS Day-Ahead and Real-Time Load Forecast Calculations will *not* be impacted as long as the EMS continues to use the **NetMW** instantaneous metering, not the new calculated **DemandMW** that will be used by settlements.**

# Con Invoice, DSS and BAS Simulator

- ✓ **All modifications or constraints proposed for BAS require a review and update of corresponding business rules in the Settlements Use Cases and “NYISO Billing and Accounting Manual”.**
- ✓ **All modifications or constraints implemented in Settlements, have potential impact in Consolidated Invoice, Decision-Support System / Data Warehouse, and the BAS Simulator. Complete Impact Analysis will be required as part of the level of effort.**

# Credit

- ✓ **For direct customers, there should be no change.**
- ✓ **For indirect customers, the current credit test may be one-sided and may not consider the condition where a load can appear to provide generation and the current credit test may overstate credit implication. Credit credentials may have to be different for reserve suppliers than energy providers. There will have to be an assessment of this as part of the functional requirements.**

# Next Steps in the Process

- ✓ Complete formal discovery and high-level requirements
- ✓ Obtain high-level resource estimates and cost/benefit analysis – report at Feb. 28 PRLWG
- ✓ Add to candidate projects for prioritization