Demand Side Participation in Ancillary Service Markets

Design Issues
Price Responsive Load Working Group
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Draft – for discussion purposes only

Topics to Cover

- ✓ Settlements
- ✓ Metering
- ✓ Communications
- ✓ Modeling
- ✓ Operational Issues

Settlements

Scenario:

- ✓ LSE has 1000 MW load in a given subzone
- ✓ DSASP provider has 100 MW load total, 20 MW of which is dispatchable load for ancillary services or energy

Settlements (cont'd)

DAM Settlement (DSASP provider taken for ancillary services):

- ✓ LSE bids 1000 MW load into DAM; DSASP scheduled for 20 MW of ancillary services
- ✓ DSASP paid applicable ancillary service clearing price
- ✓ LSE pays for all 1000 MW in DAM (no DSASP energy schedule)

Settlements (cont'd)

RT Settlement (DSASP provider taken for DAM ancillary services)

- ✓ No additional charges if no reserve pickup occurs
- ✓ If a reserve pickup is necessary, DSASP provider must follow basepoints (i.e., will be subject to persistent undergeneration charges identical to generators)
- ✓ DSASP provider eligible for DAMAP to cover day-ahead ancillary service position

Settlements (cont'd)

- For DSASP participants interested in RT only, settlements should be identical to the RT portion of the 2-settlement examples shown

Settlements (cont'd)

If DSASP providers are paid for energy reductions, we end up with:

- ✓ $$ paid to real generators for X MW of supply,
- ✓ $$ paid by LSEs for X MW of consumption, and
- ✓ whatever $$ are paid to the DSASP energy provider for Y MW of load reduction.

For the earlier example, to meet the 1000 MW load we would have:

- ✓ 980 MW of actual load consumption
- ✓ 980 MW from generators, and
- ✓ 20 MW from load reductions.

Settlements (cont'd)

There are a limited number of design choices:

- ✓ Pay $$ for Y through uplift, as we do in DADRP. This opens up the possibility of using the existing settlements logic for DADRP, albeit with different metering inputs.
- ✓ Have the LSE serving the DSASP provider pay $$ for Y. However, more entities than just the LSE benefit from the reserve pickup.
- ✓ Develop some hybrid cost allocation possibly involving the LSE and other beneficial parties. This requires some logical way of identifying those who benefit.
- ✓ Require the DSASP provider to be a direct customer, making him his own LSE.
- ✓ Don't pay the DSASP provider for energy reductions.

Metering

- ✓ DSASP participant must install 6-second revenue-grade metering
- ✓ Variations:
  - *DSASP provides metered load and NYISO calculates "generator" response when non-zero basepoints sent*
  - *DSASP provides metered load and "generator" response as separate signals*
  - *DSASP provides just the "generator" response as metered signal*

Communications

- ✓ Signals need to be passed through TO – may not require that the TO include in their own dispatch / AGC packages
- ✓ Direct ICCP communications to DSASP provider is permitted in addition to TO link
  - *would require DSASP provider to install ICCP equipment*
- ✓ As with generators, the level of communications redundancy is up to the DSASP provider

Modeling

- General rule is that models support dispatch/AGC signals to DSASP provider as generator but load calculations cannot be artificially grossed-up by DSASP "generation", particularly in RT
  - *Model as physical generator and meter load reduction as "generation"*
  - *In AGC, do not include DSASP MW when determining NYCA generation (open AGC breaker)*
  - *Can DSASP basepoints be sent out reflecting AGC-ramped RTD schedules?*

Operational Issues

- ✓ Synchronous reserves
  - *DSASP provider needs to respond min 1 hour to reserve pickup*
  - *Need to avoid sudden load restoration (could trigger additional reserve pickup)*
- ✓ Regulation
  - *Continuous, bidirectional response required*

In both cases, need to test comparable to generators, measure performance and take action if DSASP participant is non-responsive