Bid cost recovery mitigation measures

Third revised draft final proposal

Stakeholder conference call

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Overview of changes from the 2nd revised draft final proposal

- Addition of a tolerance band to the application of the modified day-ahead MEAF
- Augmentation of the persistent deviation metric to include a tolerance band for small deviations from small dispatches
- Change to the rules for changing the bid basis for BCR and the settlement of RIE based on persistent deviation metric flagging of 10-minute intervals

Application of the tolerance band and ramping tolerance to the modified day-ahead MEAF

Modified day-ahead metered energy adjustment factor

- Modified DA MEAF =
  min{1, |(Meter – DA ML)/(min{TEE, DA} – DA ML)|}

- Where
  - Meter = metered energy
  - DA ML = day-ahead minimum load energy
  - TEE = total expected energy
  - DA = day-ahead scheduled energy

Tolerance band and the day-ahead MEAF

- Apply tolerance band described in section 6.1 of the proposal to the modified day-ahead MEAF:

~ if ~

|Metered Energy – Regulation Energy – Total Expected Energy|

≤ max{5/6 MWh, 3%Pmax/6 MWh + Ramping Tolerance

~ then ~

Modified day-ahead metered energy adjustment factor

is not applied

Quick review of the proposal on adjustment of bid basis for bid cost recovery and settlement of residual imbalance energy

Summary of proposal for adjustment of bid cost basis for BCR and settlement of residual imbalance energy

- For both the bid basis for energy bid cost recovery and the settlement of residual imbalance energy
- The ISO proposes to use a resource's economic bid
  - Except in circumstances of exceptional dispatch and minimum load re-rates
- Unless… a resource deviates persistently
- In which case, the ISO proposes to use
  - min{DEB, bid, LMP} in the incremental case
  - max{DEB, bid, LMP} in the decremental case

Summary of proposal for cost basis for energy bid cost recovery and settlement of residual imbalance energy

Circumstance	Bid basis for real-time bid cost recovery	Settlement of residual imbalance energy
Normal	Economic bid	Reference-hour bid
With persistent deviation (inc case)	Min{LMP, DEB, bid}	Min{LMP, DEB, bid}
With persistent deviation (dec case)	Max{LMP, DEB, bid}	Max{LMP, DEB, bid}
To or from an exceptional dispatch	Same settlement basis as the exceptional dispatch	Same settlement basis as the exceptional dispatch
To or from a pmin re-rate	LMP	LMP

The persistent deviation metric

~ and ~

Augmentation of the threshold of the persistent deviation metric to include a tolerance for ramping capability

Persistent deviation metric

- The persistent deviation metric =
  [M(t-1) – M(t)] / [M(t-1) – TEE(t) – Reg(t)]

- Where
  - M(t-1) = metered energy at t-1
  - M(t) = metered energy at t
  - TEE(t) = total expected energy at time t
  - Reg(t) = regulation energy at time t

The persistent deviation metric measures the extent to which a resource follows its dispatch from the prior settlement interval

If the metric indicates that the resource over-delivers dispatched change in output more than 10%

~ and ~

The deviation is greater than 10% of the resource's 10-minute ramp capability

~ then ~

The interval is flagged

Example 1: persistent deviation metric and its threshold

- Ramping down above day-ahead schedule (case 2)

- Metered Energy (t-1) = 100
- Metered Energy (t) = 75
- Total Expected Energy (t) = 50
- Deviation = 25 MW
- Ramp rate = 10 MW/min
- PDM = (100-75)/(100-50) = 0.5
- Threshold = (10 MW/min)*(10 min)*(10%) = 10 MW
- PDM < 0.9 and deviation > threshold → interval flagged

Example 2: persistent deviation metric and its threshold

- Ramping down above day-ahead schedule (case 2)

- Metered Energy (t-1) = 100
- Metered Energy (t) = 97
- Total Expected Energy (t) = 95
- Deviation = 2 MW
- Ramp rate = 10 MW/min
- PDM = (100-97)/(100-95) = 0.6
- Threshold = (10 MW/min)*(10 min)*(10%) = 10 MW
- PDM < 0.9 but deviation < threshold → interval not flagged

Rules for changing the bid basis for BCR and the settlement of RIE based on the outcome of the persistent deviation metric

Rules for adjusting the bid basis for BCR and the settlement of RIE based on the number of flagged intervals in the two-hour rolling window:

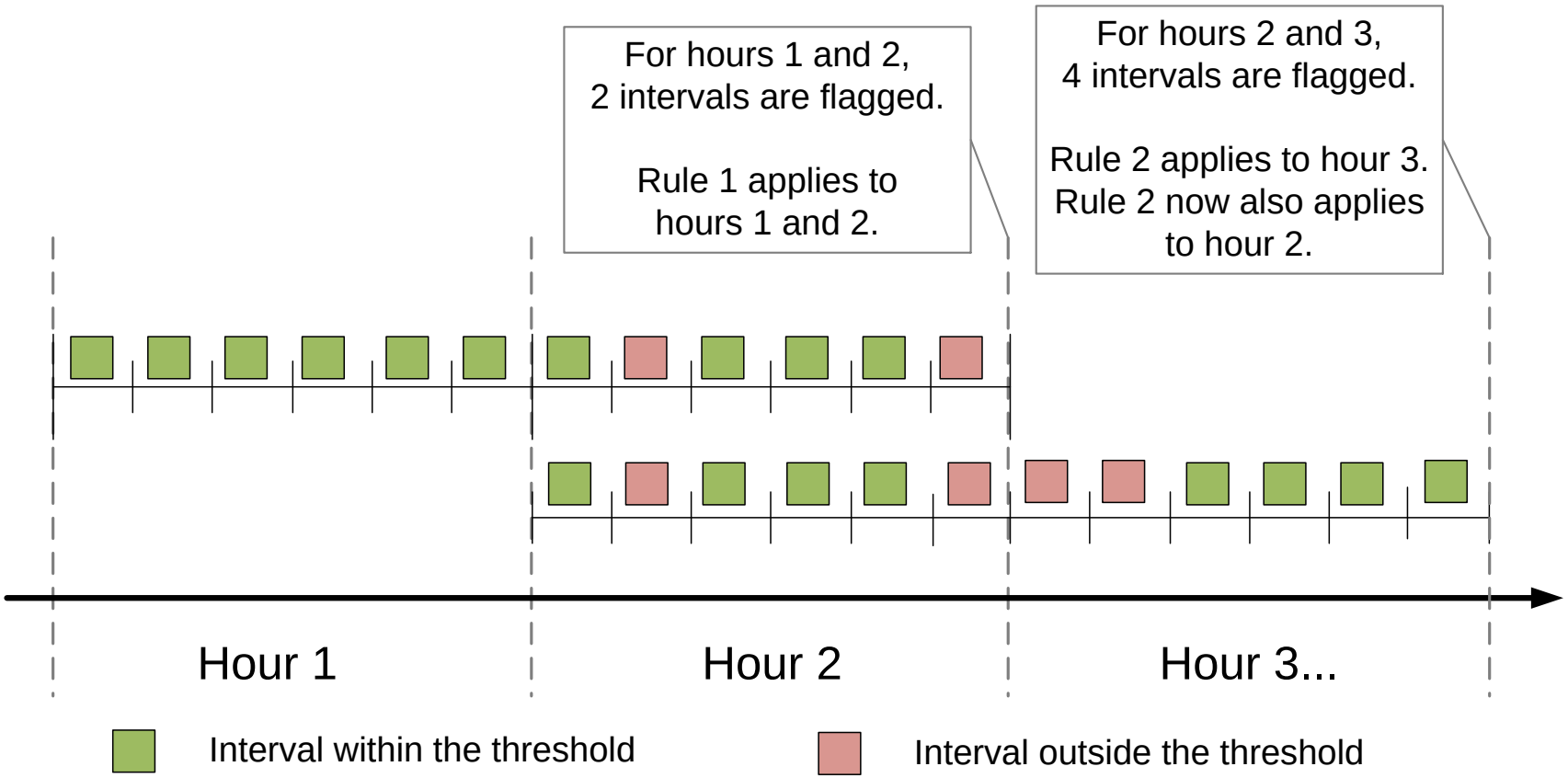
Rules 1-2

Number of flagged intervals	Bid basis for real-time optimal energy BCR calculation	Settlement of residual imbalance energy
0-3	Economic bid	Economic bid for ref-hour
4-12	Min{DEB, LMP, bid} for all intervals	Min{DEB, LMP, ref bid} for all intervals

Rule 3: Once an interval is flagged, it remains flagged

Rule 4: If an interval's bid base is determined by Rule 1 in a previous evaluation, it can be re-determined by Rule 2 in the next evaluation.

Deviations will be considered over a two-hour rolling window



Application of the flagging rules and the rolling two-hour window

Month (2012)	2-hour windows with 0-3 intervals flagged	2-hour windows with more than 3 intervals flagged
June	96%	4%
July	94%	6%
August	95%	5%
September	96%	4%
October	96%	4%

- Looks only at hours with ramping (4 cases)
- Does not account for adjustments due to real-time de-rates
- Does not include MSG resources
- Uses each resource's averaged master file ramp-rate

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