Flexible Ramping Product Enhancements discussion

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Improve “deliverability” by not awarding FRP to resources that have a zero opportunity cost because of congestion

- Flexible ramping up to resource behind constraint
  - Next market run unable to dispatch higher than current output
- Flexible ramping down to resource providing counterflow
  - Next market run unable to dispatch lower than current output

CAISO is starting new initiative to improve effectiveness of FRP with a Fall 2020 implementation

- Maintain FRP requirement in the FMM buffer interval to not deprive RTD of FRP
- PDR that are not 5-minute dispatchable should not be awarded FRP
- More granular procurement. Options include:
  - Approaches to limit the impact of NIC/NEC on each EIM BAA's requirement (minimum requirement)
  - As discussed in DAME, sub-regional within BAA (zonal)
  - Energy + FRP within transmission limits (nodal)

More granular procurements approaches – Zonal

- Pros
  - Less initial implementation effort and computational resources
  - Consistent with existing approach for ancillary services
- Cons
  - Zones must be absent from internal congestion otherwise problem of awarding behind a constraint still exists
  - Arbitrary distribution of the system requirement to static load zones
    - Maximum/minimum requirement that must be met in that zone that can lead to higher costs
    - May drive additional unit commitment to cover worst case scenario of static zones
  - Need to develop blocking rules to address generation pockets

More granular procurements approaches – Nodal

- Pros
  - Addresses awarding FRP inconsistent with congestion and prices flexibility more accurately
  - Long term solution to address operations concerns

- Cons
  - High initial implementation effort and computational resources
  - Does not guarantee deliverability because needed deployment may differ than modeled deployment
  - In day-ahead, may need congestion hedge for capacity products