Participating Intermittent Resource Program

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Background

- Intermittent resources can participate in PIRP
  - Currently about 1,100 MW out of about 3,300 MW of intermittent resources (wind and solar) currently participate
- Resources in PIRP…
  - May not submit economic bids into energy or A/S markets
  - If they wish to participate, they self-schedule into the RT market
  - Self-scheduled supply based on independent forecast
  - UIE charges are netted across the month
  - Exempt from uplift charges for ML compensation

Motivation for revisiting PIRP

- Operational conditions that require curtailment of generating resources include
  - High hydro due to spring run-off
  - Light load conditions
  - Daily ramping periods
  - Variability of intermittent resources
- These circumstances
  - Are expected to increase as more intermittent resources come onto the system
  - Will require that we un-economically dispatch resources to meet real-time load conditions

Pros and cons of PIRP for its participants

- Pros:
  - Uninstructed imbalance energy charges are netted across the month ($2-$4/MWh subsidy)
  - Exempt from paying uplift to cover ML compensation
- Cons:
  - Cannot submit economic bids into RT
  - RT self-schedules must equal the forecast
  - Intermittent resources pay forecast fee of 10¢/MWh

Pros and cons of PIRP for the market generally

- Pro:
  - PIRP participants provide data for a centralized forecast. Increased accuracy of the forecast enables the ISO to make more efficient unit commitment and dispatch decisions
- Cons:
  - The subsidy received by PIRP participants is paid for through UIE and NND
  - PIRP resources have a disincentive to provide economic bids
  - Self-scheduling of VERs leads to less efficient curtailment

Summary of SH comments on the Issue Paper

- Opposed to PIRP modifications (2)
  - Maintain PIRP program
  - Extend to intermittent dynamic transfers
  - Extend to DA schedules
- In favor of PIRP modifications (7)
  - Inconsistent with cost allocation principles
  - Market rules should be technology-neutral
  - Changes to PIRP are timely considering contracting to meet 33% RPS is underway
  - Strive for *ex ante*, operational solutions rather than *ex post* administrative allocation of costs

That was then, this is now

- The PIRP program was put in place before…
  - Advent of the LMP market in which there is not a balanced scheduling requirement
  - Understanding of expected growth of variable renewable resources under RPS
  - Benefit of studies on operational impacts of renewable integration
- As we go forward…
  - Intermittents and other renewables will provide 33% of energy to serve load
  - We need to maximize renewable production through economic dispatch

Goals for intermittent resources

- Minimize reliance on administrative measures to successfully participate in ISO markets
- Provide economic bids, including decremental bids
- By so doing, help avoid and even relieve challenging system conditions while maximizing production by intermittent resources

Parameters to consider

- Telemetry requirements
- Renewable forecast – who bears the cost
- Scheduling obligations – decremental energy
- Determination of imbalance and uplift charges

Summary of practices at other ISOs

- **DA bidding and scheduling**
  - Optional in CAISO, NYISO and ISO-NE
  - Required for RA resources in PJM and MISO
- **RT bidding and scheduling**
  - Self-schedule in CAISO, MISO and ISO-NE
  - Dec bids mandatory in PJM, NYISO
- **Allocation of uplift charges**
  - Exempt in CAISO, NYISO, ISO-NE and MISO (revisiting)
  - Balancing reserve charge in PJM (< $1.50 / MWh)
- **Allocation of imbalance energy charges**
  - Real Time LMP in PJM, NYISO, ISO-NE and MISO
  - PIRP rules in CAISO

Initial recommendations

	Under PIRP	Initial Recommendation
Telemetry Requirements	Additional requirements for VERs that participate in PIRP in exchange for the PIRP settlement benefit	Maintain additional telemetry requirements for VERs; Required for reliable grid operation
Renewable Forecast	Supply data for 3rd party wind forecast; pay 10¢/MWh	Supply data for 3rd party wind and solar forecast; cost of forecast shared
Scheduling Obligations	Self-schedule forecast in HASP	RA resources' RT economic bids must include dec bids
Settlement; Imbalance and Uplift Charges	Monthly netting of deviations from hour-ahead self-schedules; exempt from ML uplift	Eliminate netting; VERs are settled as a conventional supply resource

Question for the MSC

What problems do you foresee in the approach of treating Variable Energy Resources just like other supply resources?

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