

Day-Ahead Reserve Market Implementation Issues

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Day-Ahead Reserve Market Issues

- **PJM has not given sufficient consideration to issues that arise with implementing day-ahead reserve markets.**
- **Issues worthy of extended discussion:**
 - **Day-ahead and real-time modelling differences affect reserve clearing**
 - **Settlement calculations**
 - **Negative balancing reserve costs, causes and allocation**
 - **Interaction with virtuals**

Day-Ahead Modelling Differences

- **Only 20 percent of real-time constraints modelled day ahead**
- **PJM modifies real-time ramp rates, called Degree of Generator Performance (DGP)**
- **Regulation not included in day-ahead model**
- **Imports and exports**

Balancing Settlement Calculations

- **Reserve payment**
 - **Energy paid metered MW, not dispatch MW**
 - **Reserves paid dispatch MW, not metered MW**
 - **A resource can produce energy in real time instead of providing reserves and receive compensation for both.**
- **Eligibility for day-ahead reserve uplift payment**
 - **Resource provides less reserves in real time than day ahead**
 - **Under what conditions? What if resource is no longer available for reserves?**
 - **Estimated impact?**

Allocation of Balancing Reserves

- **PJM proposes to allocate all balancing reserve costs to load.**
- **Generators and virtuals also cause balancing reserve costs.**
 - **Generator unable to provide reserves in real time**
 - Outages, derates, not following dispatch
 - Many resources do not receive an automated dispatch signal.
- **Virtuals change day-ahead reserve clearing and cause different congestion patterns in the day-ahead market.**

Virtualls

- **IMM does not support virtualls directly participating in the reserve markets.**
- **Energy virtualls, currently INCs, DECs, and UTCs, can change the reserve clearing in the day-ahead market.**
- **Virtualls cause different constraints to bind.**
- **Virtualls affect the dispatch MW of resources and resource commitment.**

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