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**

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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**

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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?**

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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.**

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Virtuals

- **IMM does not support virtuals directly participating in the reserve markets.**

- **Energy virtuals, currently INCs, DECs, and UTCs, can change the reserve clearing in the day-ahead market.**

- **Virtuals cause different constraints to bind.**

- **Virtuals affect the dispatch MW of resources and resource commitment.**

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