Day-Ahead Market Enhancements discussion

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Market Surveillance Committee Meeting

General Session

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ISO PUBLIC

The ISO has been conducting a series of workshops on DAME

- The ISO has been actively engaging with stakeholders to explore DAME design alternatives

- This includes hosting a series of workshops aimed at exploring tradeoffs and gathering feedback

- Workshop discussions will be used to inform the DAME proposal in preparation for Board/GB decision in May

DAME design alternatives can broadly be divided into three categories

1. The DAME Final Proposal ("the nodal approach")

2. "The zonal approach"
   – Ideas put forth by Vistra and WPTF

3. "The SCE approach"
   – Ideas put forth by Southern California Edison

The DAME Final Proposal ("Nodal approach")

- Procures imbalance reserves in the Integrated Forward Market co-optimized with energy and ancillary service schedules

- Procures imbalance reserves through the use of deployment scenarios to ensure imbalance reserves are transmission-feasible if they are fully deployed.

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Deployment scenarios
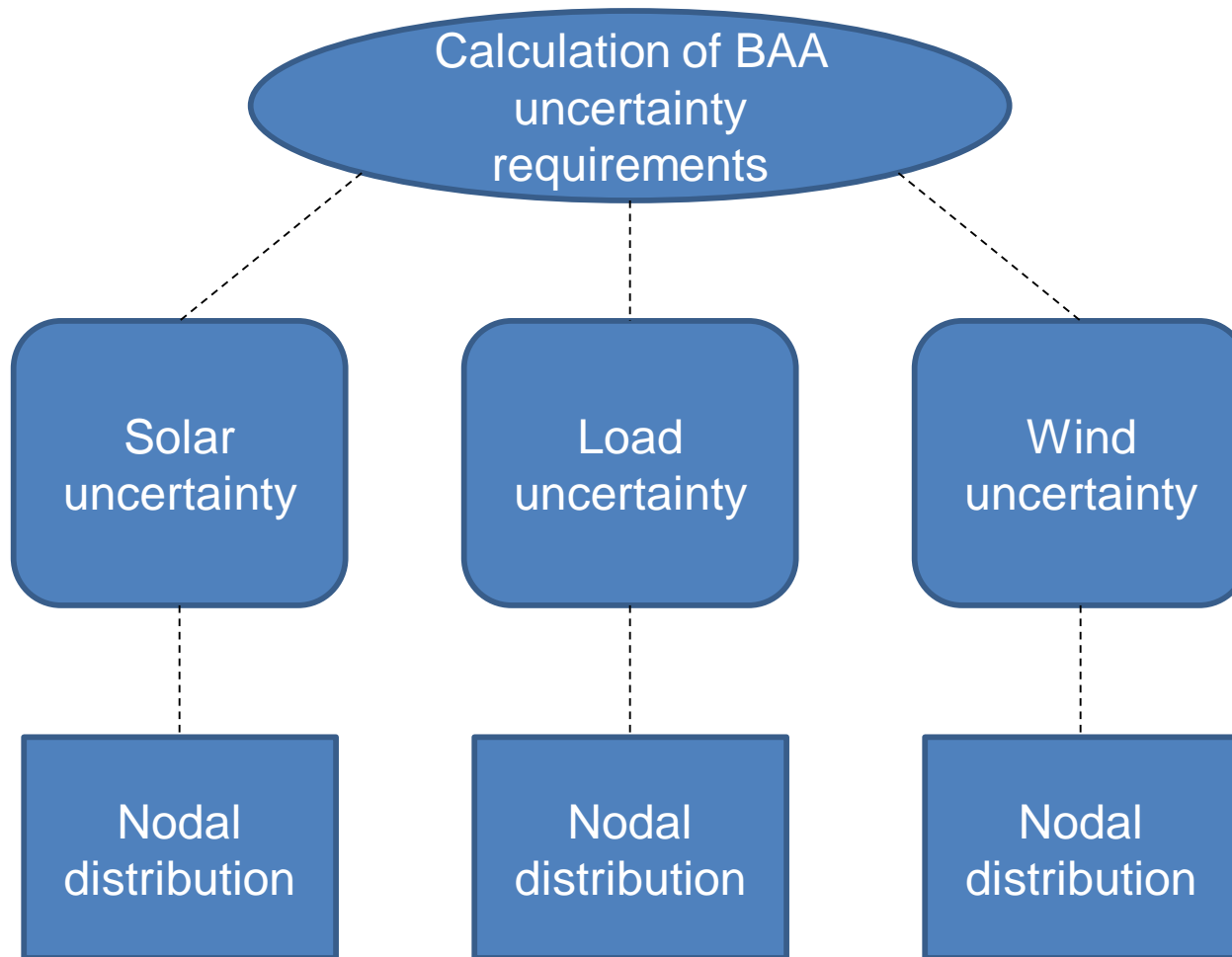
Nodal distribution of each uncertainty requirement

- **Load uncertainty:** Distributed to load nodes using same load distribution factors used in RUC

- **Wind uncertainty:** Distributed to wind nodes in proportion to resource wind forecast

- **Solar uncertainty:** Distributed to solar nodes in proportion to resource solar forecast

Deployment scenarios

- Upward deployment scenario
  - Award imbalance reserve up
  - Supply is added to system assuming all imbalance reserve up awards deploy as energy
  - Demand is added to system based on distribution of upward requirements

- Downward deployment scenario
  - Award imbalance reserve down
  - Supply is removed from system assuming all imbalance reserve down awards reduce energy
  - Demand is subtracted from the system based on distribution of downward requirements

- Base, upward, and downward deployment scenarios are simultaneously optimized to respect transmission constraints

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"The zonal approach"

- Procures imbalance reserves in the IFM but does so within zones that enforce fewer transmission constraints
  - "Nodal" procures IR more like energy where "zonal" procures IR more like ancillary services

- Requirements, procurement, and pricing are by region/zone

- Vistra presented a detailed conceptual design as an example of how a zonal approach could work

- A "hybrid" approach could still make limited use of deployment scenarios

"The SCE approach"

- Procures imbalance reserves in the RUC process as opposed to the Integrated Forward Market
  - Procured sequentially with reliability capacity
  - Can be done nodally through continued use of deployment scenarios

- Fallback option: reduce the imbalance reserve flows in the IFM deployment scenarios
  - Create a "tunable parameter" X ranging from 0 – 1 that creates X MW flow for every 1 MW of imbalance reserves

Congestion revenue problem

- Final Proposal allocates IR costs based on payments to suppliers at their location; CAISO would thus not collect "congestion revenue" on the imbalance reserve flow

- CRR payments due to a binding constraint are adjusted so that they do not exceed the congestion revenue collected due to that constraint.

- There may be a shortfall in paying CRRs on constraints that bind in the deployment scenarios

Some congestion occurs within upward deployment scenario but congestion rent only collected to cover the base scenario
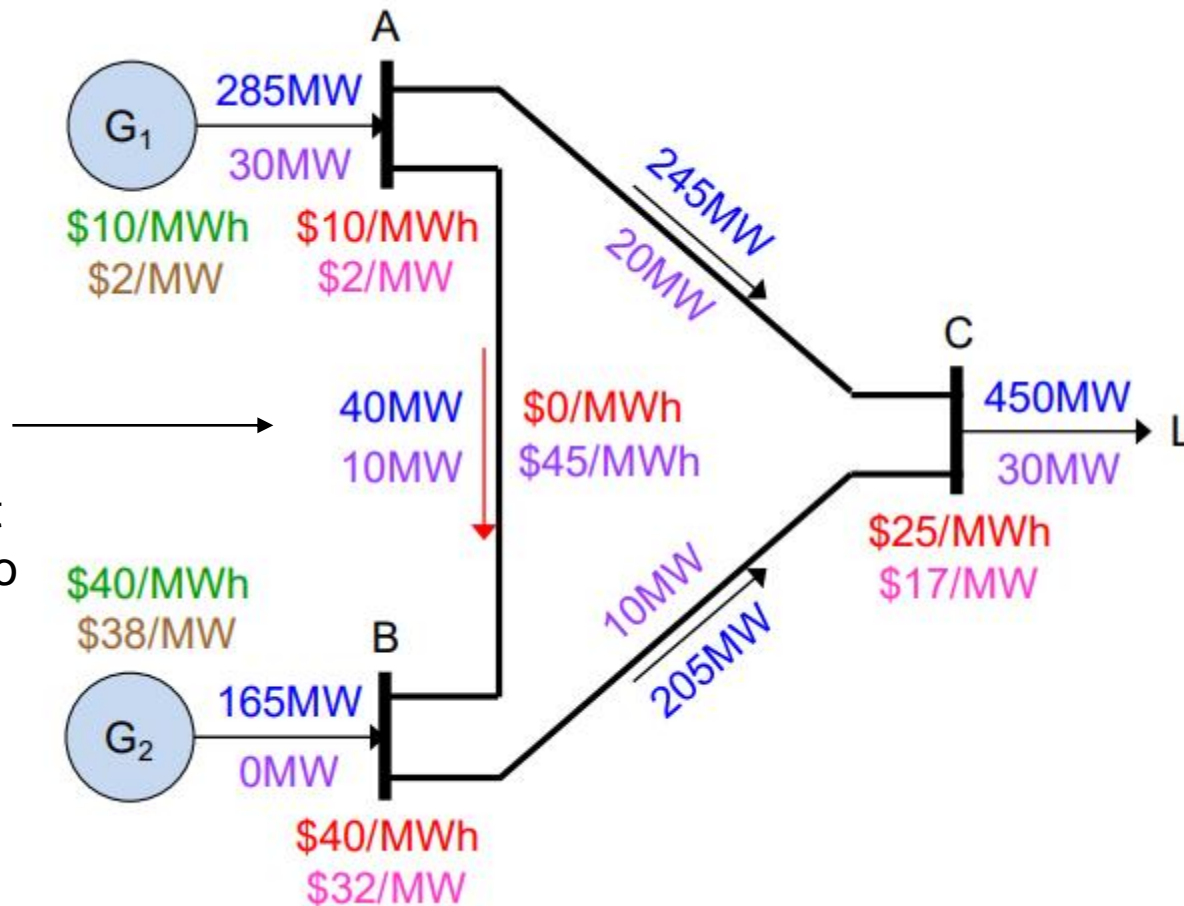
Proposal to improve congestion revenue sufficiency from IR deployment scenarios

- **Objective: Collect congestion rents through an uplift via the imbalance reserve cost allocation AND expand financial right associated with CRRs**

- Identify congestion revenue shortfalls that are due to IRU/IRD deployment and cure these shortfalls by adding their cost to the IRU/IRD uplift cost for allocation.

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