Intentional Deviation in the EIM

A market participant perspective on extra-market penalties

Northwest & Intermountain Power Producers Coalition and Renewable Northwest

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BPA and Markets

The West is moving to organized markets; so is BPA.

- BPA joined the Western Energy Imbalance Market in 2022
- BPA is actively considering joining a Day Ahead Market
- EIM and other markets have rules for scheduling and bidding
- Market rules are developed in a stakeholder process and are reviewed by FERC

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Extra-Market Penalties

When is it appropriate for BPA to impose additional penalties on top of market consequences?

- How does BPA determine that market consequences are not sufficient to influence customer decisions;
- How does BPA calculate the magnitude of an appropriate extra-market penalty;
- Do extra-market penalties constrain valuable behavior?
- Examine these questions through the lens of the VERs Intentional Deviation Penalty.

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Background

Penalties for inaccurate scheduling of VERBS

- First Wind Integration rate was WI-09
- First penalty for inaccurate scheduling was in WP/TR-10
  - Persistent deviation — “cross the line”
- Current structure of the penalty implemented in BP-16
  - $100/MWh if schedule does not “meet or beat” BPA forecast
- Changes in BP-22 to allow EIM participation
  - “Proposing to exclude any five-minute interval in which a VER Participating Resource was economically dispatched by the EIM”

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Changed Conditions

In the beginning . . . .

- Strong incentives to maximize output
  - Production Tax Credit
  - Renewable Energy Credits
  - Energy Price
- Limited Forecasting
- Scheduling Challenges

Changed Conditions

Now . . . .

- Less incentive to maximize output:
  - RECs — States rely less on RECs to meet clean energy goals
  - PTCs — Tax incentives no longer tied to production
  - Improved forecasts and scheduling
  - Exposure to energy imbalance charges (EIM more effective at pricing imbalance energy)
  - Greater access to storage resources, including storage

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Intentional Deviation for VERs

BPA penalty applies on top of market consequences

- BPA requires all VERS to schedule to BPA Forecast or risk penalty
    - Exemption for dispatch order from Market Operator
- BPA's forecast updates every five minutes, with one scheduling value for the hour
- If a customer schedules to a forecast that is less accurate than BPA's, the customer faces a charge of $100/MWh
- Applies to all VERs—even those that are participating resources in the EIM

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EIM Market Participation

Schedule or Economic Bid

- CAISO forecast also updates every five minutes, but provides four scheduling intervals — one for each 15 minutes
  - The CAISO forecast should be more accurate than the BPA forecast
- EIM rules allow VERs to:
  - Submit economic bids up to value of the CAISO forecast; or
  - Schedule up to the value of the CAISO forecast.
- If resource does not use the CAISO VER forecast and it does not deliver its "expected energy," the resource is subject to the Under/Over Delivery Charge (BPA deploys reserves under VERBS to support the schedule)

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Intentional Deviation Penalty v. Market Charges

BPA's extra-market penalty creates conflicting incentives

- Avoiding the Intentional Deviation Penalty:
  - Schedule to BPA forecast
  - BPA deploys more balancing reserves; allocates more capacity for balancing reserves
  - Customer faces increased exposure to energy imbalance charges in market
- Limiting Exposure to Energy Imbalance Charges in the Market:
  - Schedule to CAISO forecast (or bid to forecast)
  - BPA deploys less balancing reserves; reduces capacity needed for balancing reserves
  - Customer faces risk of exposure to BPA's Intentional Deviation Penalty if CAISO forecast is less accurate than BPA's

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Other Strategies

To avoid exposure to energy imbalance charges

- Coordination with storage
  - Customer under schedules to forecast and diverts surplus to its own storage
- Are there other creative strategies?

Intentional Deviation Penalty

Does it limit valuable behavior in a market?

- Participating resources in the EIM are exposed to Under/Over Delivery Charges
- Under/Over Delivery Charge is a function of nearby LMPs
- If a market participant can deliver more energy than it scheduled when incremental balancing reserves are scarce (and expensive), should BPA impose a penalty?
- Why isn't the market consequence sufficient?
- Should the penalty be $100/MWh?

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Other Implications

Of customer incentives to avoid imbalance charge

- Customers have incentives and new tools to limit exposure to energy imbalance charges.
- Will this impact BPA's calculation of capacity requirements for total balancing reserves?
  - Should BPA continue to use the BPA forecast in VER scheduling accuracy assumptions?
  - Why not assume that VERs will schedule to CAISO VER forecast?

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Decision Framework for Extra-Market Penalties

BPA has a framework to consider tariff deviations from the *pro forma* OATT

- Maintain a tariff that is consistent with the FERC *pro forma* tariff to the extent possible
- BPA will consider differences from the FERC *pro forma* tariff if the difference is necessary to:
  - Implement BPA's statutory and legal obligations, authorities, or responsibilities;
  - Maintain the reliable and efficient operation of the federal system;
  - Prevent significant harm or provide significant benefit to BPA's mission or the region including BPA's customers and stakeholders; or
  - Align with industry best practice when the FERC *pro forma* tariff is lagging behind industry best practice, including instances of BPA setting the industry best practice.

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Proposal

BPA should develop a decision framework for extra-market penalties

- Structure similar to OATT deviation framework;
- Assume market structures are adequate to manage customer behavior;
- Limit extra-market penalties to a determination that they are ***necessary*** to achieve some standard or goal;
- Ensure extra-market penalty does not punish beneficial behavior;
- Ensure that magnitude of the penalty is no higher than necessary; and
- Apply that framework to the intentional deviation penalty for VERs that are participating resources in the EIM.

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Conclusion

Next Steps

- Develop with customer input a framework to determine whether extra-market penalties are appropriate;
- Apply that framework to Intentional Deviation Penalty;
- Magnitude of penalty?
- Allow customers to elect to schedule to CAISO VER forecast without penalty?
- Increase dead-band before penalty applies?
- Clarify existing rates language regarding the scope of the exemption.

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