ORDC Shape Options

EPFSTF

June 25, 2018

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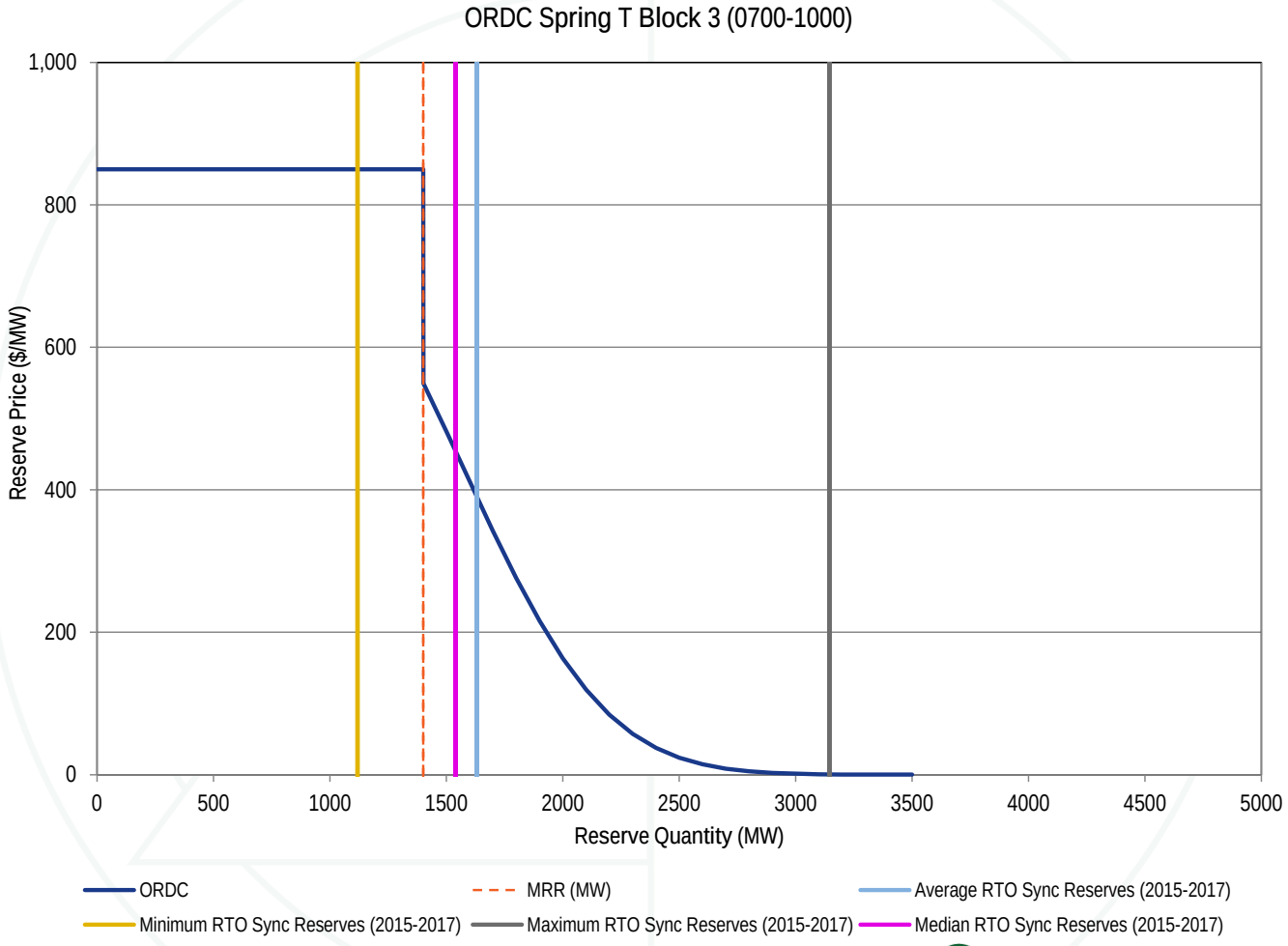
Monitoring Analytics

PJM Estimated ORDCs

- **The ORDC estimation method presented by PJM in May was a straightforward adaptation of the method used by ERCOT.**
- **The ORDC means that PJM will buy more than current synchronized reserve levels and pay higher prices for synchronized reserves.**
- **Used within the energy and reserve joint optimization, the MMU expects the estimated ORDCs would lead PJM to carry more online capacity than it has historically.**
- **The implication is not only a change to price formation, but also a change to operations.**

Estimated ORDCs and Historic Reserves

- **The following graphs plot the PJM ORDC estimates provided at the May EPFSTF meeting.**
- **The MMU added historic synchronized reserve levels:**
  - **2015 through 2017**
  - **By season and time block**
  - **Five minute pricing solution synchronized reserve levels**
  - **Minimum, Maximum**
  - **Mean, Median**
- **The actual historic reserve requirement may vary from the MRR (minimum reserve requirement) in the plotted curve.**



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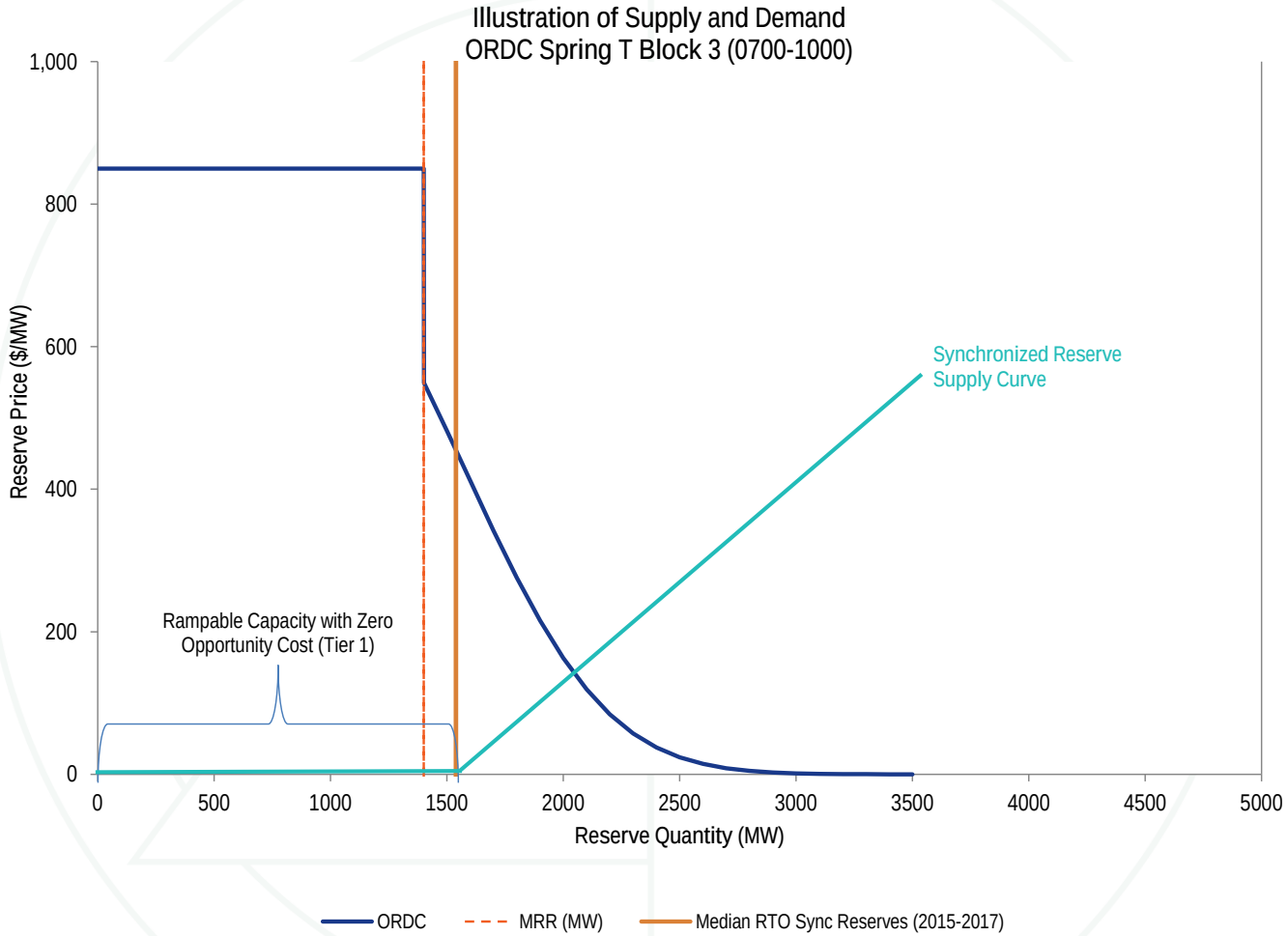

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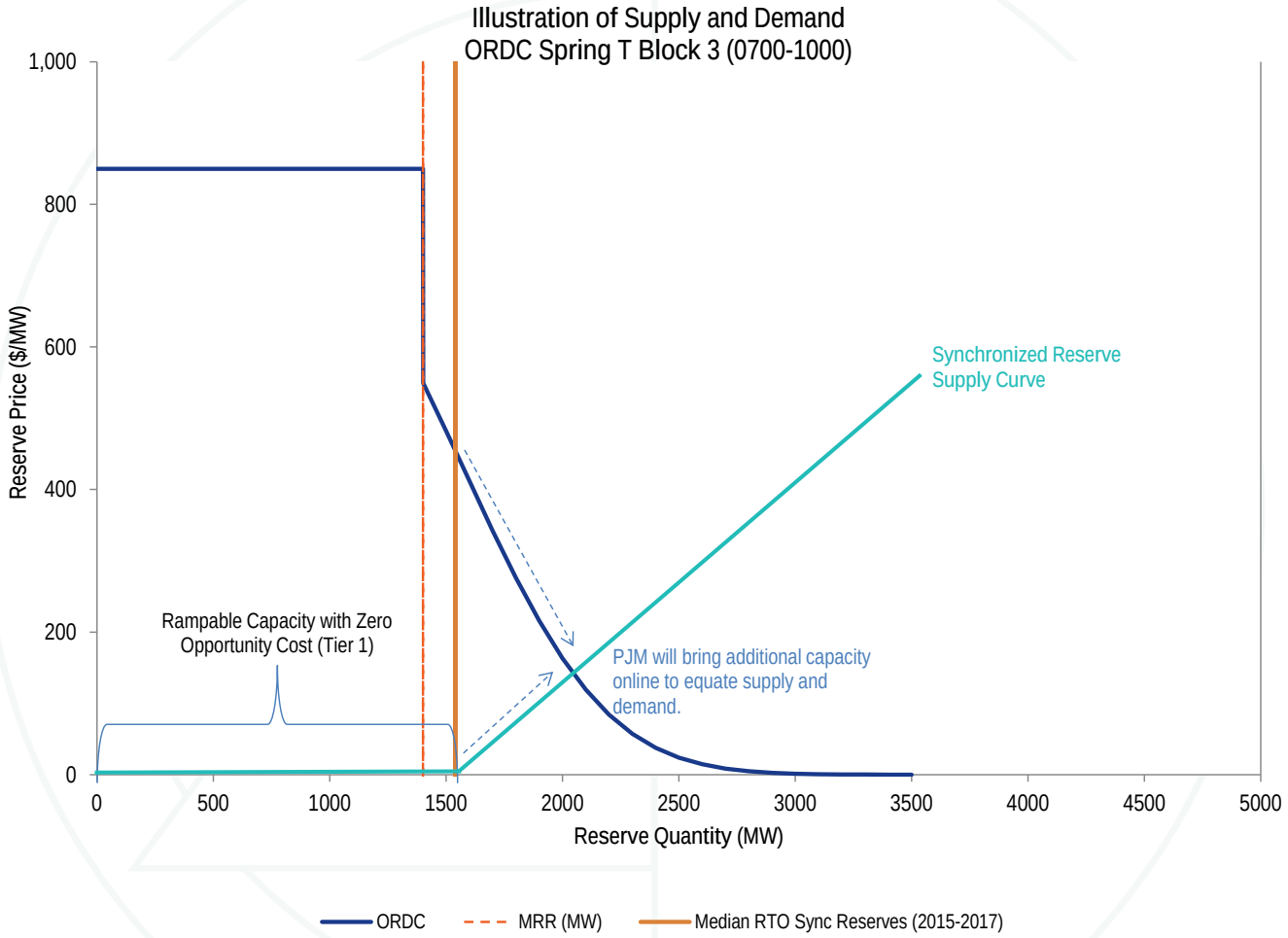

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ORDC Shape Criteria

- What is the marginal value of ten minute reserves?
- Is the thirty minute Probability Below the Minimum Reserve Requirement (PBMRR) the best metric?
  - Load forecast, wind forecast, solar forecast
  - Forced outage rates
- Does the penalty factor reflect the value of maintaining ten minute reserves?
  - $850 per MWh x 1400 MW = $1.19 million per hour
- Impact to the market
  - Can a less dramatic change to the ORDC produce the desired results at a lower cost?

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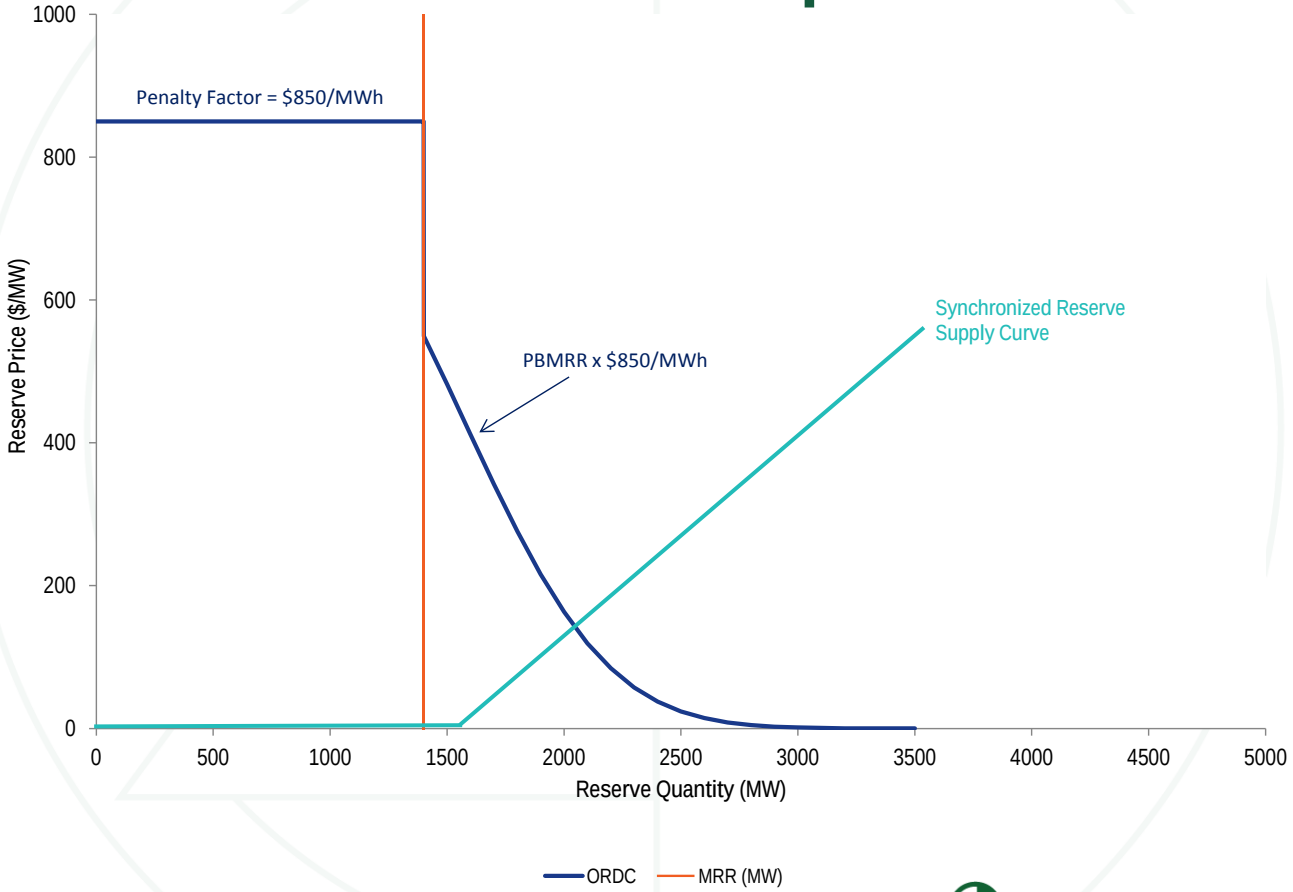

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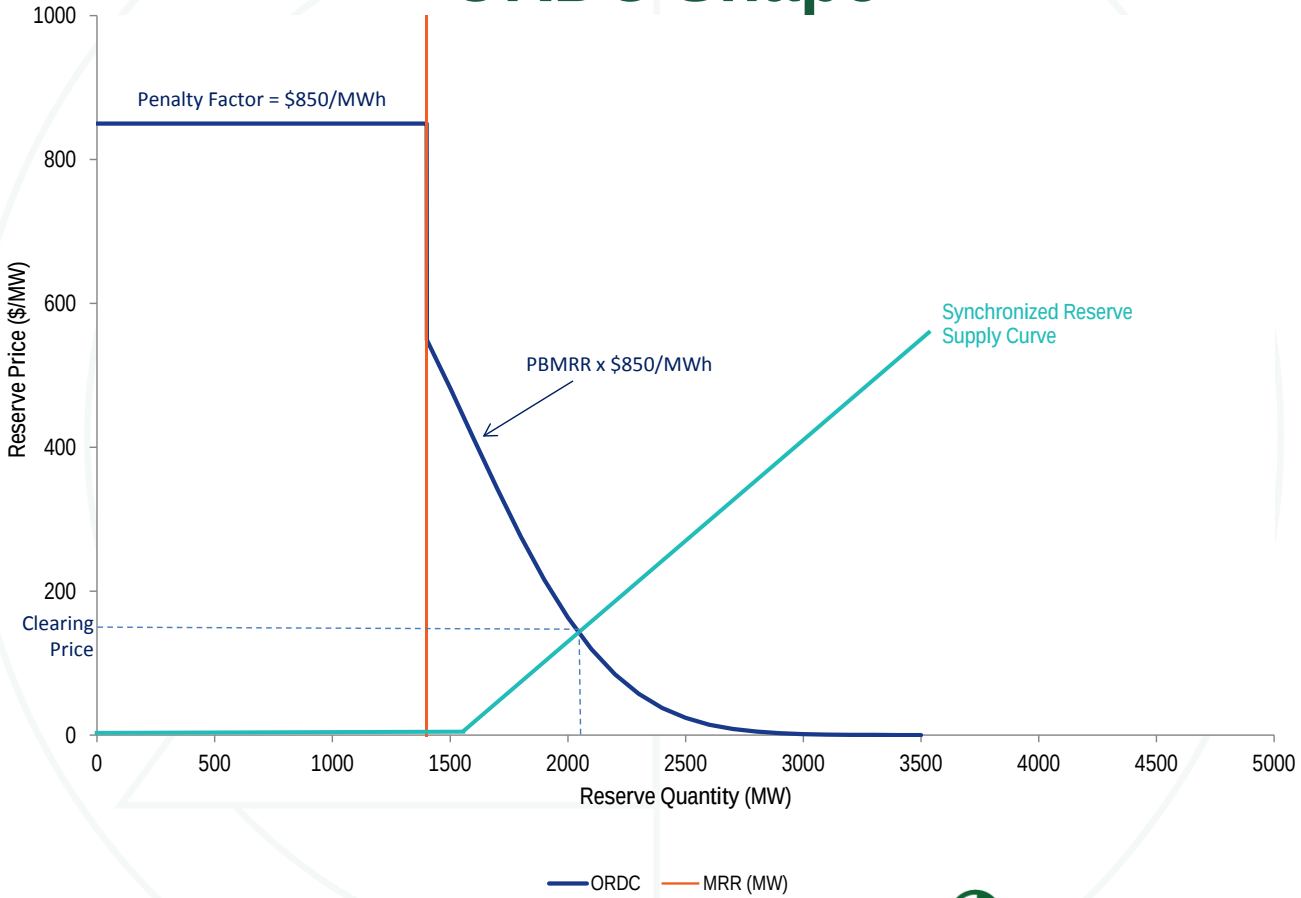

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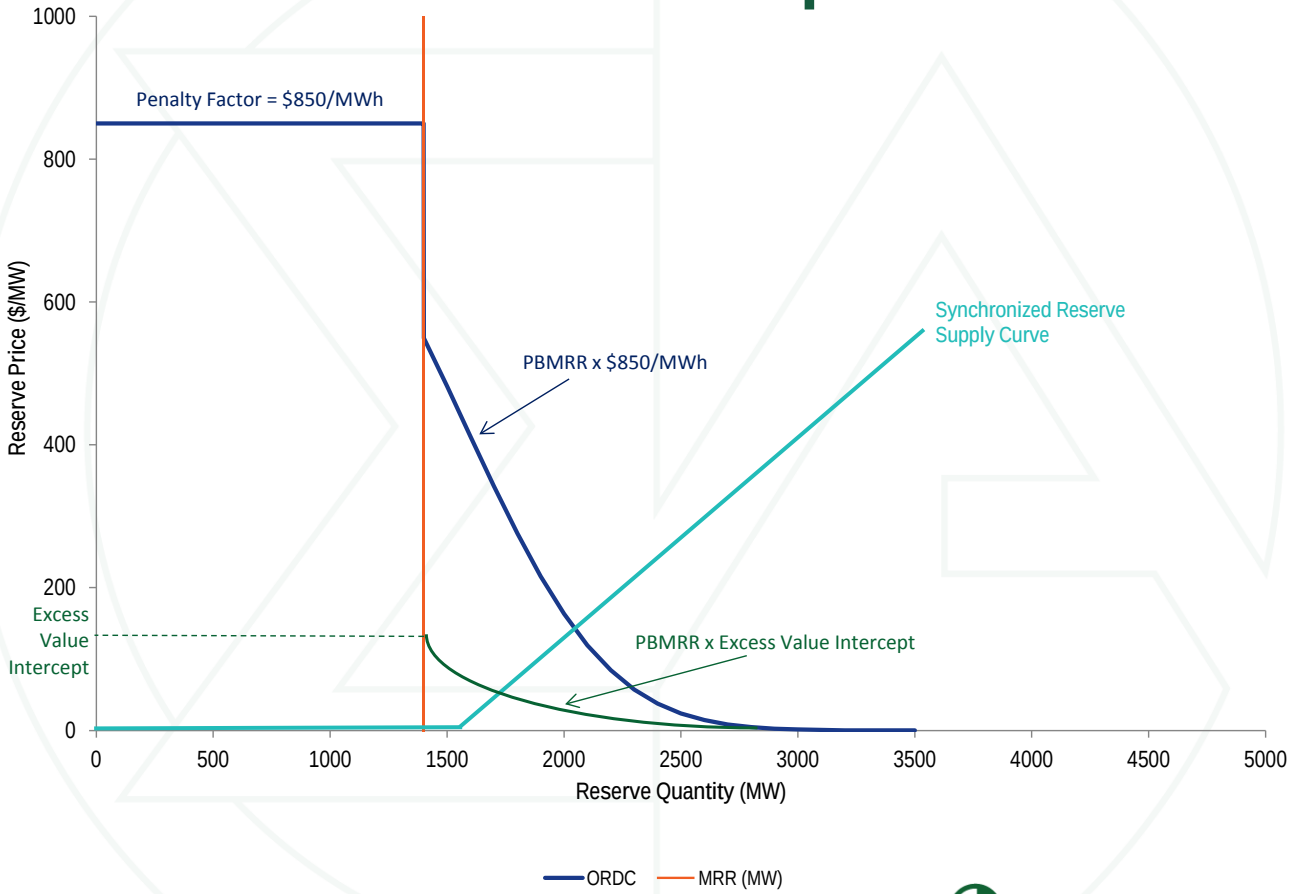

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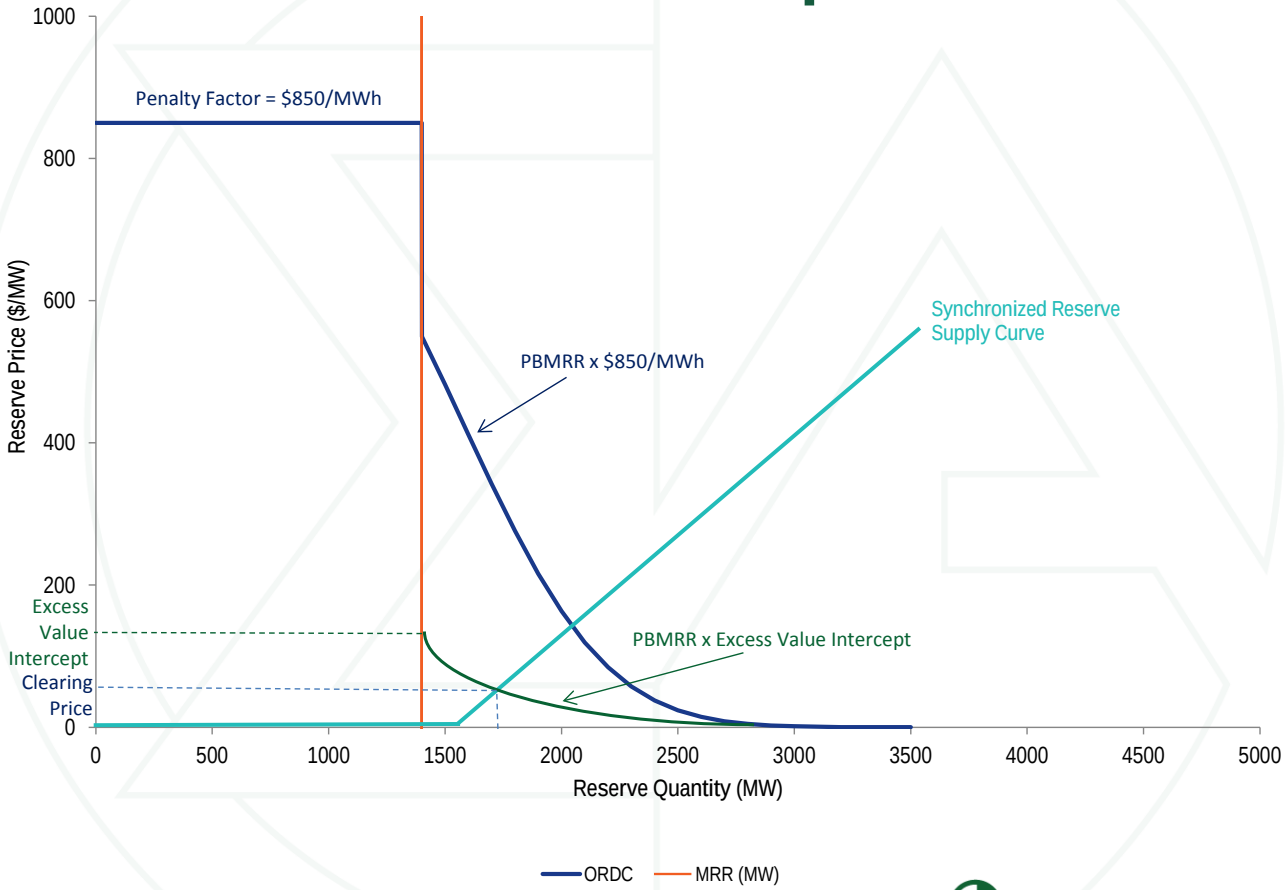

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ORDC Shape Alternatives

- **PJM seeks to prices reserves on the system when reserves exceed the Minimum Reserve Requirement.**
- **The identified market design gap does not require pricing at $850 per MWh x the Probability Below the Minimum Reserve Requirement (PBMRR).**
- **The IMM suggests considering a different intersection point for the MRR and the downward sloping segment of the ORDC.**
  - **We call the different intercept point the Excess Value Intercept.**
- **A lower PBMRR is a similar option.**

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