

# Market Design for an Evolving Resource Mix in the Northeast US

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# Key Market Design Features for High Renewable Penetration

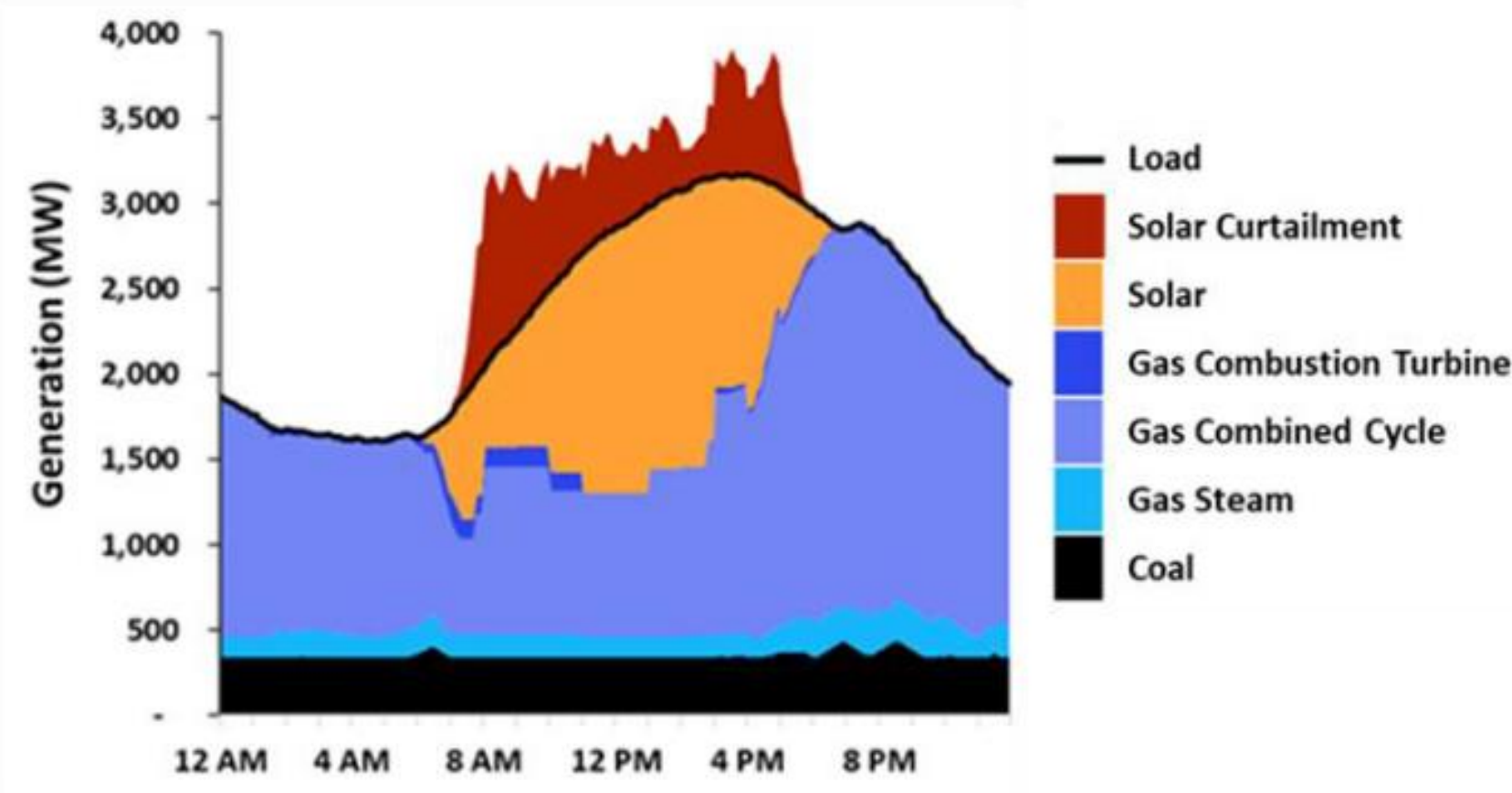
- Flexible
  - Fast (eg, 5 minute) dispatch, scarcity pricing
  - Close to real time
  - Small building blocks
- Fair
  - Technology neutral service definitions
- Far
  - Large geographic areas with seamless trading
- Free
  - Bilateral contracts and state policy allowed



See [https://windsolaralliance.org/wp-content/uploads/2018/11/WSA\\_Market\\_Reform\\_report\\_online.pdf](https://windsolaralliance.org/wp-content/uploads/2018/11/WSA_Market_Reform_report_online.pdf)



# Future: Thinner peaks, dispatchable renewables



First Solar & E3 TECO Study



# Hot Topics in Northeast US systems

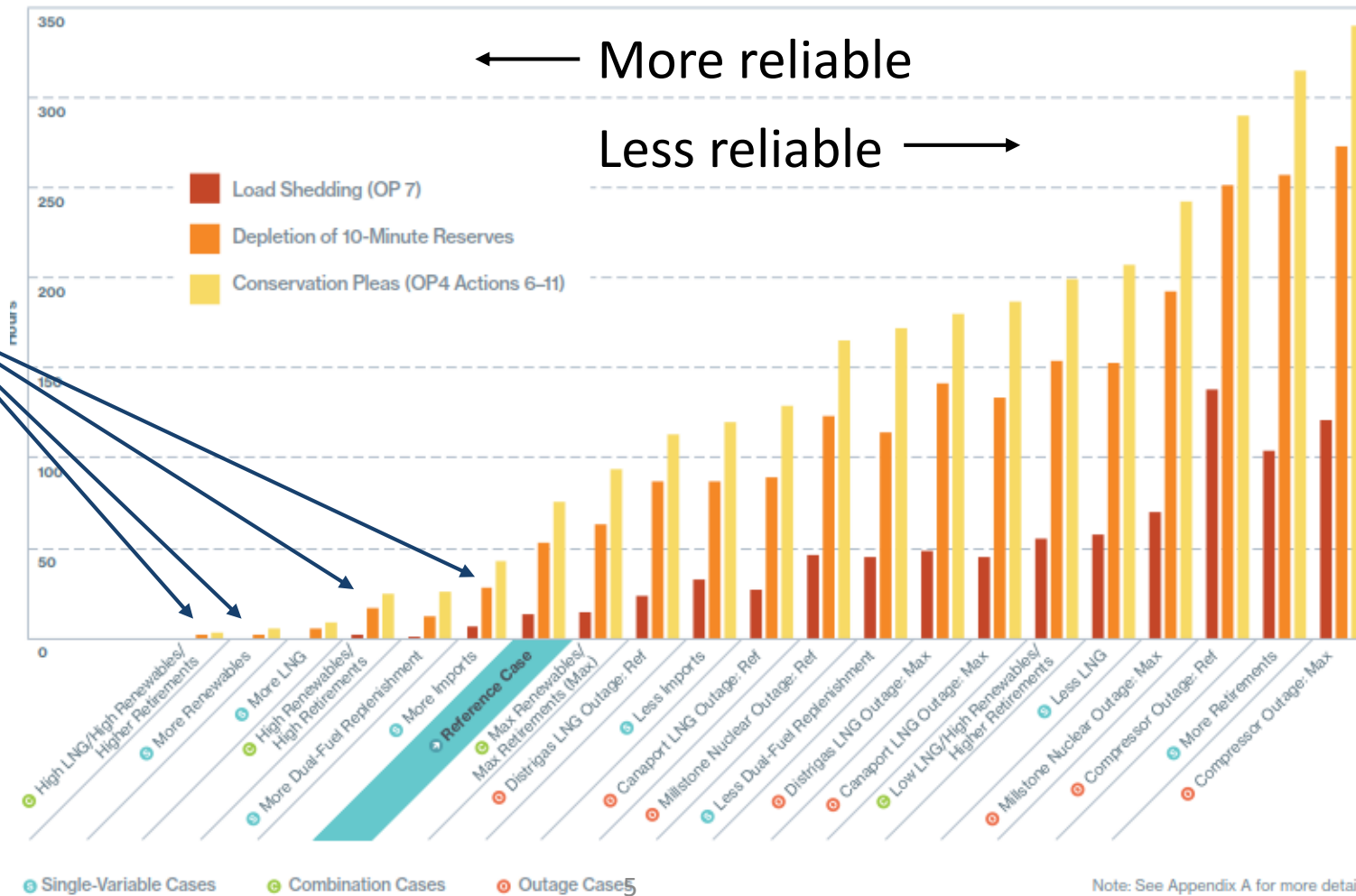
1. **State policy interaction with federal (FERC) and ISO/RTO rules**
  - a. Minimum Offer Price Rule (MOPR)
  - b. Capacity market design
  
2. **Fuel security**
  - a. Resilience
  - b. Administration coal bailout



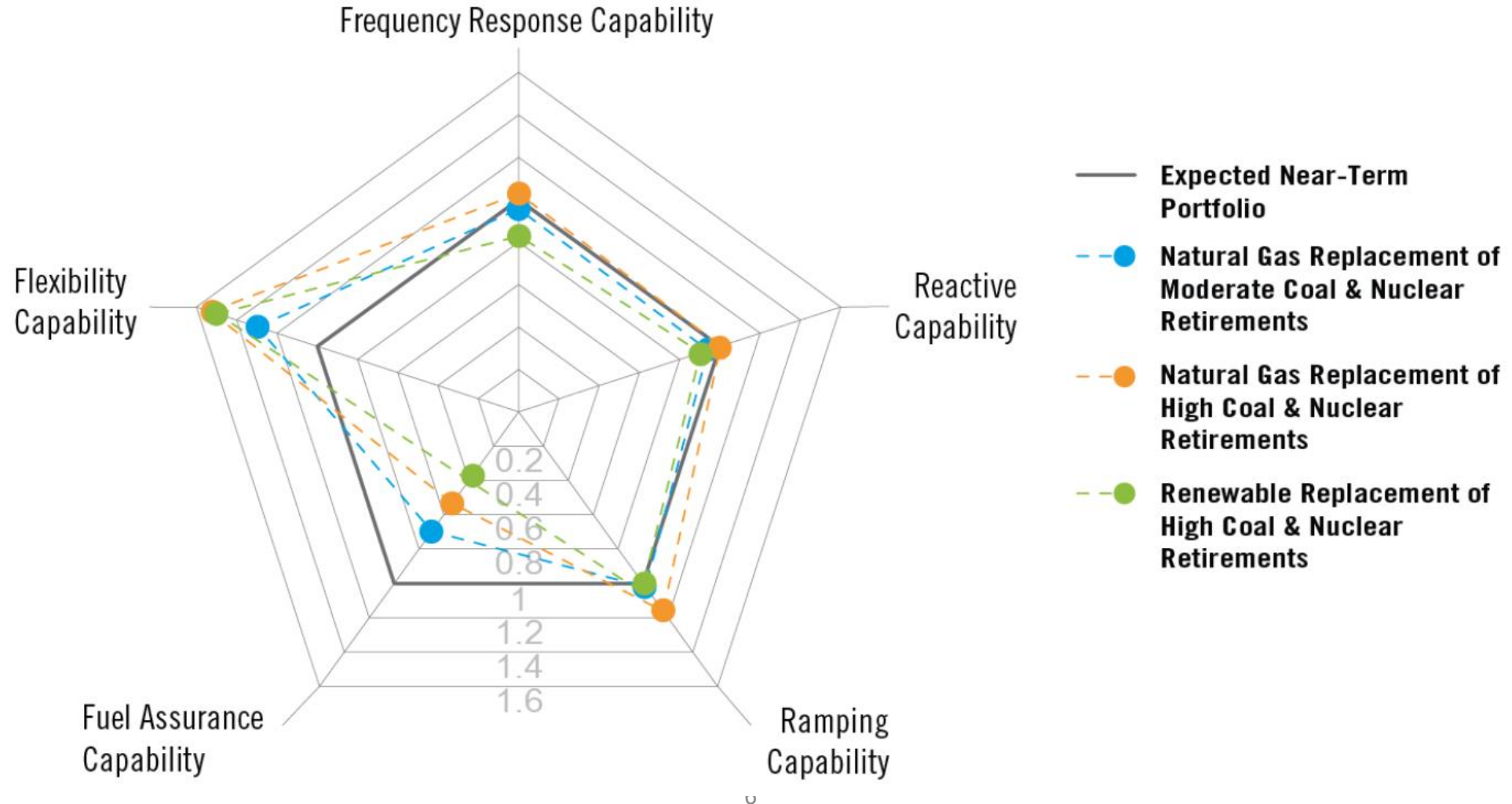
# Fuel Security: ISO-NE

Figure 4: Hours of Emergency Actions under Modeled Scenarios, Ordered Least to Most

High Renewable Scenarios

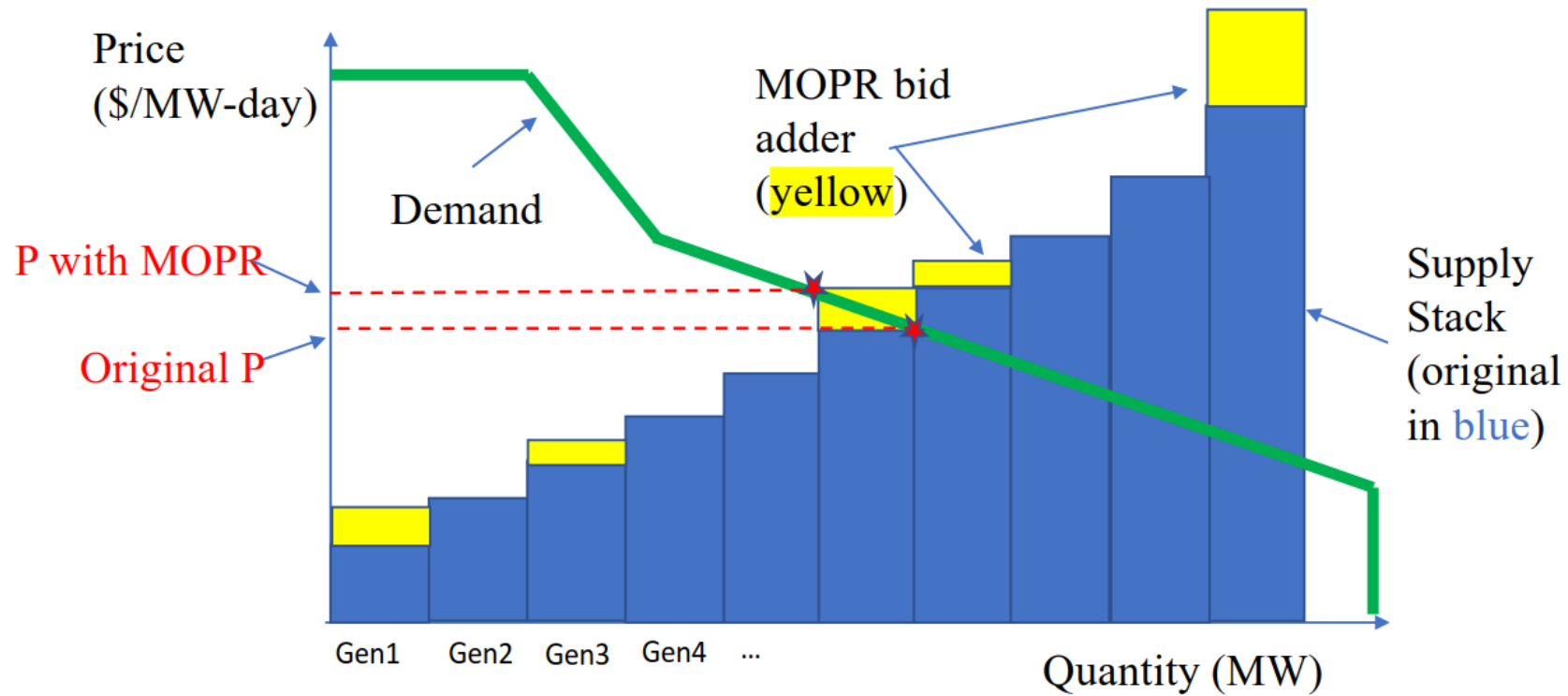


# Fuel Security: PJM



# State Policy Mitigation

## Minimum Offer Price Rule (MOPR)



# Capacity Market Reforms: PJM

- What state policies should be mitigated
- What is mitigation bid level?
- Should there be an opt-out
- Should there be a seasonal capacity market?
- Should the region shift to rely relatively more on energy markets vs capacity markets

