



Principles for PJM Capacity Reforms

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PJM Capacity Market Workshop 2

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The Enel Group Worldwide

Enel is a PJM leader in demand response, renewables, storage, and EV Supply Equipment



Publicly Committed to UN Sustainable Development Goals



\$84 B
Annual Revenue



65,000
Employees



31
Countries
in 5 continents



42 GW
Renewable Capacity



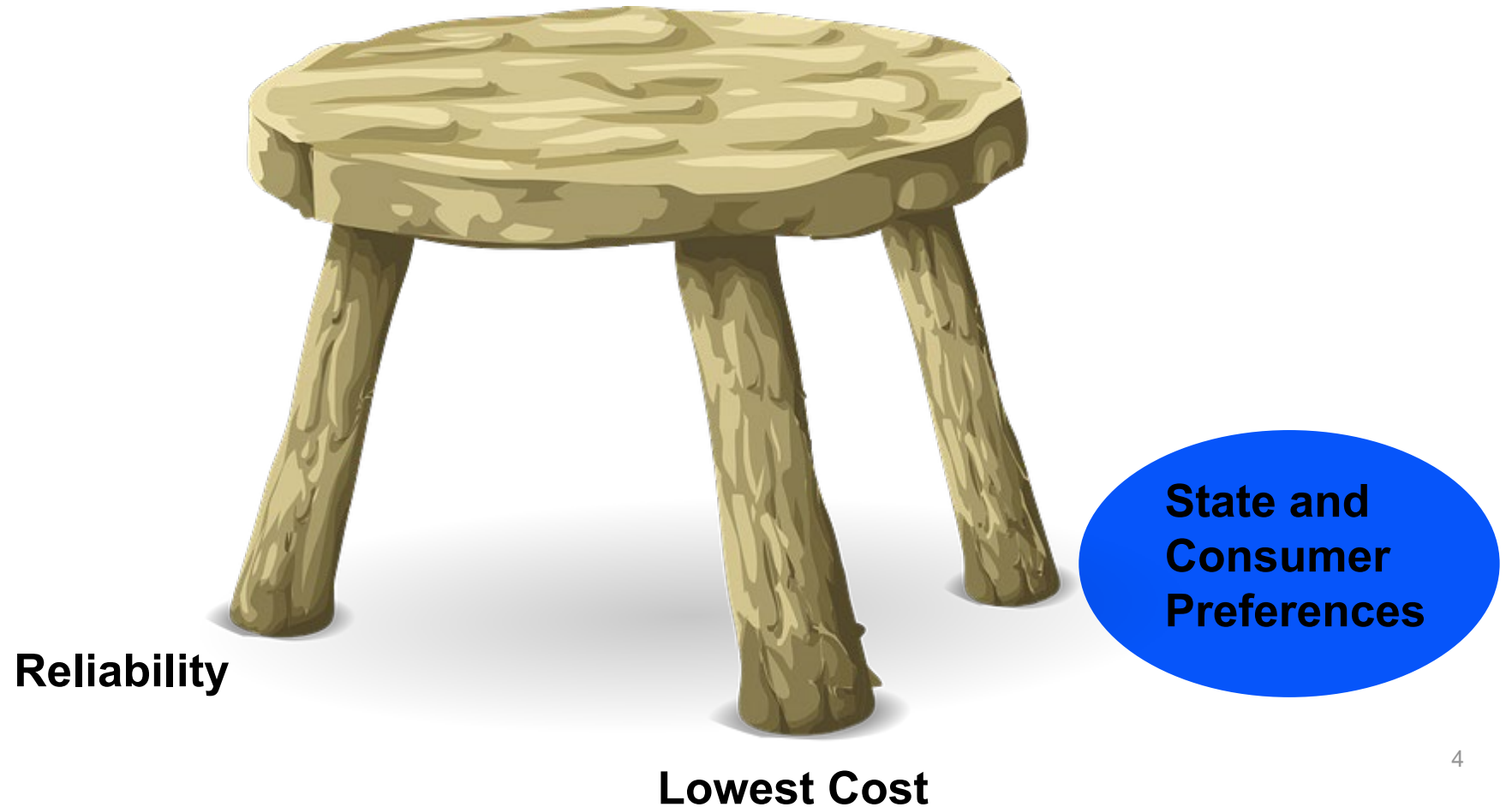
50+ Yrs
Experience



No. 20
Fortune's
Change the World List

The Problem We Are Trying To Solve

What is the best market structure to not just optimize for reliability at the lowest cost, but also for state and consumer preferences?



Market Reform Principles



1. Enable state and customer choice for clean energy and capacity; break the silo between the two procurements
2. Leverage regional competition and locational price signals to reduce combined costs for capacity and clean energy and to maintain and enhance reliability
3. Send price signals for clean, flexible, non-energy intensive resources needed for reliability to balance intermittents and meet GHG goals
4. Solution needs to be durable, well-understood, and financeable

Capacity Market Drivers For Lowest Cost, Clean and Flexible Resource Investment



- Market stability with 20-30 year investment horizon
 - FRR and energy-only markets do not allow for this
- Product standardization provides liquidity and ability to de-risk projects, also reducing risk of volatility in capacity prices
- Forward capacity price signals attract investment through rocky interconnection, permitting, development process
- Value streams for clean and flexible resource attributes encourage specific investment

PJM's BRA has Been Effective To Spur Demand Response Participation

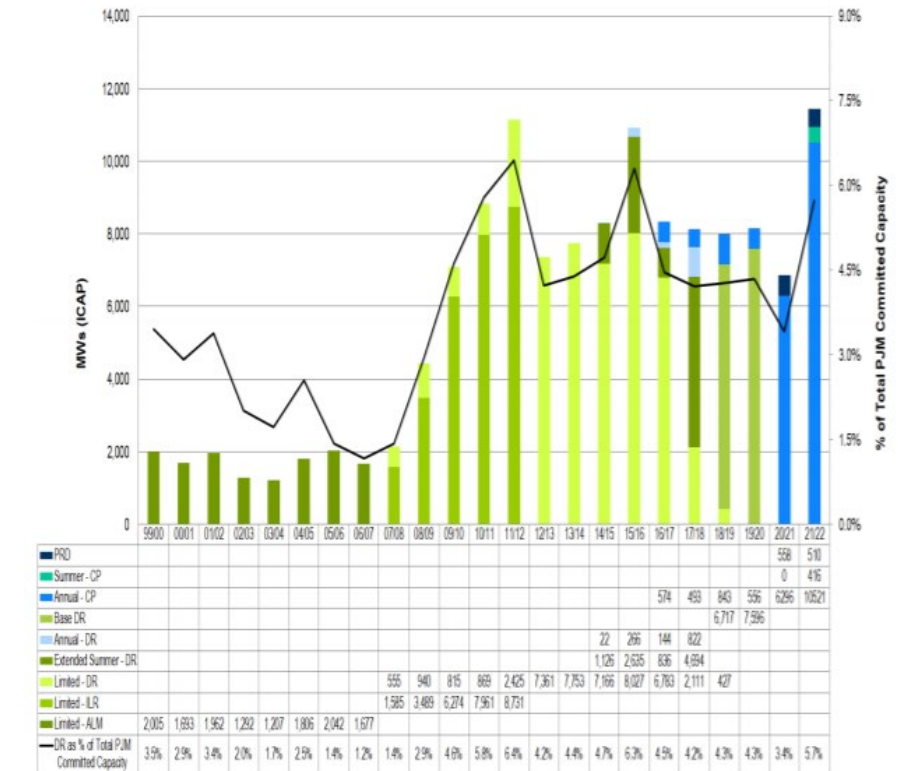


- Demand response avoids need to procure more costly generation capacity resources
- Three-year ahead price signal and “availability payment” is key to participation; 95%+ of DR revenues from capacity
- Capacity DR has contributed 4 - 6% of PJM annual committed capacity for last 10 years



2020 Load Response Activity Report February 2021

Figure 15: PJM Demand Response Committed MWs by Delivery Year



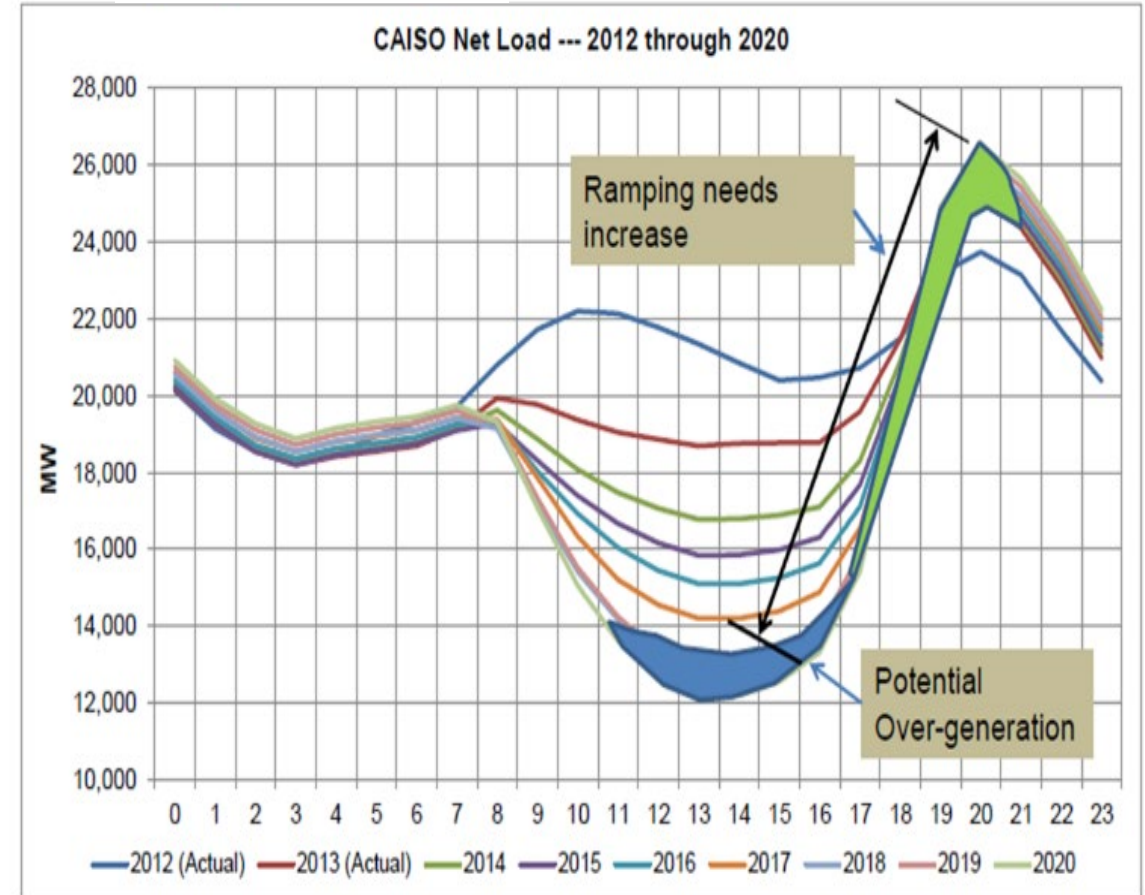
Notes:
 1) Data represents net commitment value (for each product specified) on 2/2/2021.
 2) RPM was implemented DY 07/08.
 3) DY 21/22 MWs include results from Base, First and Second Incremental Auction.
 4) ALM MWs are seasonal averages for Delivery Years before 07/08.

New Price Signals Needed To Attract Clean, Flexible Resources In Large Quantities

PJM should be pro-active in its preparation for a decarbonized grid



- Clean MWh available at peak have greater GHG reduction value (not all RECs are equal)
- Grid operators will need flexible resources to balance intermittents, but current capacity product is vanilla
- Existing REC and capacity procurements fail to send accurate price signals for these resources
- Solution: Send market signals through new flex capacity product and dynamic clean energy credits (CEACs) in proportion to carbon avoided



Enel Believes ICCM Meets Key Principles and Deserves Consideration



Principles	Integrated Clean Capacity Market (ICCM)
Enable state and customer choice for clean energy and capacity; break the silo between the two procurements	Efficiently co-optimizes capacity and energy. States and energy buyers may define clean objectives, or can just buy standard electricity
Leverage regional competition and locational price signals to reduce combined costs for capacity and clean energy and to maintain and enhance reliability	Continues to leverage PJM locational price signals, reliability requirements, and 3-year forward planning. States have option of participating in regional lowest cost or state-only procurement
Send price signals for clean, flexible, non-energy intensive resources needed to balance intermittents and meet GHG goals	Design option available to include specific flexible capacity resources and dynamic CEACs incentivizing flexibility
Solution needs to be durable, well-understood, and financeable	Regularly optimizes for diversity of state clean decarbonization goals (and respects states that prefer to continue to buy standard electricity)

Contact Information



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