Competitive Electricity Markets

Weening Markets from Rent-Seeking Subsidies and Capacity Markets

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FERC’s Electricity Market Competition Agenda
Big Picture – Bigly Success

• Markets operate efficiently with LMP and least-cost dispatch

• Reserve margins are high with significant excess capacity
  ➢ PJM PY17-18: 20%
  ➢ PJM PY20-21: 23%

• Competitive new entry with proper locational signals / ratepayers not on the hook

• Wholesale prices reflect marginal cost – which are low due to shale boom
Is “Missing Money” a Market Failure?

- Competitive markets at a cross-roads

- Widely accepted that capacity markets needed to assure adequate reserves

- Who believes?
  - Missing money is a market failure
  - Capacity is a “positive externality” – i.e. energy prices alone do not internalize the social benefit of capacity in terms of its contribution to reliability, and would yield sub-optimal reserves
Is “Missing Money” a Market Failure? ...

...but the capacity market never seems to “work”

- Over $10B transfer from consumers to Gencos to solve “missing money”
- Yet capacity market structure is perpetually in disrepair
  - Locational Capacity (FERC ER05-1410)
  - MOPR (for state intervention to suppress prices) (FERC ER11-2875)
  - “Capacity performance“ (so units that don’t operate in shortage don’t get paid for reliability they did not contribute to)
  - External capacity “pseudo ties” (FERC ER17-1138)
  - MOPR for ZECs? (FERC AD17-11)
  - Fuel diversity / “attributes”
  - Grid resiliency / baseload capacity (DOE NOPR)

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The System Operator’s Nightmare

![Diagram source: Jaffe and Felder, The Electricity Journal, Dec. 1996.]
Is “Missing Money” a Market Failure?
Rent-seeking and ROI on political activity

• With competition, uneconomic assets should retire, but ratepayers are being asked to bailout uneconomic assets

• Illinois: Exelon nuclear assets
  ➢ Effectively economic withholding to drive up price
  ➢ Added benefit of getting paid anyway

• Ohio: coal and nuclear plants

• New York: Exelon upstate nuclear plants

• DOE NOPR for “Grid Resiliency”
  ➢ We are Overinvested in generation/transmission
  ➢ Underinvested in distribution networks
“Missing Money” is NOT a Market Failure
Energy-only markets: Dynamic Growth of DR a benefits of Competition

- Reliability is not an externality: a relic of planning model where demand is inelastic
- Energy market will always clear if prices are allowed to rise – consumers will voluntarily curtail rather than pay exorbitant energy prices
- Market incentives determine installed capacity and reserve margins
- The “true” market failure:
  - Get the energy prices right! (improper energy market pricing, especially scarcity (but also uplift))
  - Inadequate demand response (this is changing)
  - Inadequate real-time metering and ability to segregate circuits and curtail less essential loads
- We can transition away from capacity markets – this should be the priority for federal policy

FERC Price Formation and Scarcity Pricing Impact of State / LDC-Level Demand Response

- Scarcity pricing suppressed by DR that occurs outside the ISO-scarcity pricing mechanisms: this is the biggest barrier to proper scarcity pricing

![Graph showing BGE Demand Response -- July 14, 2016]
FERC Price Formation and Scarcity Pricing Impact of State / LDC-Level Demand Response

- ISOs have revised tariffs and price-setting mechanisms to allow scarcity pricing when ISO-visible DR programs kick in (a FERC priority)
- But much of the DR is not visible to the ISOs
  - Example: BGE behavioral program pays $1,250/MWh for demand response (see example)
  - Example: PA state program spends ~$90 MM/yr on DR programs
  - These DR programs are happening everywhere
- We need a concerted effort to integrate LDC and retail DR into the ISO price-setting mechanisms
- The future: Electric vehicles, distribution networks & addressing climate challenge / carbon
Policy Recommendations

• If “resiliency” is the problem (it’s not!), focus on distribution investments

• Transition from capacity markets over multi-year period to energy-only markets once DR and metering technical issues are solved

• Recover capacity revenue requirement during transition through hourly energy price adder – to incentivize DR and ensure that the transition can be successful (i.e. mirroring high energy prices)
  – Incentive for demand response
  – Incentives for generator availability (pure capacity performance)

• Revisit Order 745 – DR on the Demand side, not the supply side. Have ISO’s set criteria for DR to set price and ensure market clearance when market is tight