Ensuring Sufficient Capacity Reserves in Today's Energy Markets

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Electricity 101

- Electricity produced as consumed and equal to demand.
- Electricity flows do not honor contract paths
- Electricity supply and demand fluctuates
- Obligation to serve = obligation for sufficient capacity

Can Market Forces Prevent Shortages?

- Customers don't respond to real time price spikes
  - No real time price information
- Contracts don't protect customers from involuntary curtailment
- Occasional price spikes aren't enough to incent investment

Capacity Obligations for Energy and Reserves

- ICAP, enforced by deficiency charge
- Alternative supply requirements
  - Availability, price, location
- When must customer meet obligation?
  - By delivery date or in advance
- Market power in capacity markets

Capacity Obligations for Reserves Only

- Forward reserve contracts
  - Call option on energy
- Procuring in advance reduces market power
- Targets financial incentive to generators that run infrequently

Demand Side Mechanisms

- Customer commitment to curtail as a substitute for capacity
  - Perhaps including price-sensitive demand bids
- Reduces seller market power and price volatility
- Large scale implementation may require state regulatory approval