


An Energy-Only Resource Adequacy Mechanism in ERCOT



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Regulatory Framework for ERCOT

- Texas Commission jurisdiction and responsibilities established by Texas Legislature
- Texas Commission oversees wholesale and retail markets
- Investor-owned utilities unbundled into generation companies, wires companies, and retailers
- Wires companies are regulated rate of return
- Electric cooperatives and municipally-owned utilities still bundled

Fundamentals of ERCOT Market Infrastructure

- Easy interconnection of generation
- Aggressive investment in new transmission
- Socialized payment by all loads of new transmission
- Bilateral contracting without centralized pool or installed capacity markets

ERCOT Market Chronology (I)

September 1995:

Wholesale generation market opened to competition

May 1999:

Texas Legislature approves retail electric competition

July 2001:

ERCOT begins operation as a single control area. Market design based on zonal congestion management and portfolio bids for ancillary services and balancing energy.

January 2002:

Retail market opens and becomes most successful in the U.S.

ERCOT Market Chronology (II)

Summer 2005:

Final approval for market redesign

- Nodal market design (implemented by 2009)
- Energy-only resource adequacy approach chosen

Summer 2006:

Energy-only resource adequacy and market power rules to be finalized

Fall / Winter 2006:

Proceedings to improve market-based demand participation

Changes in ERCOT Resources: 1995-2005

■ Investment boom 1999-2005:

- Gas-fired capacity: 27,400 MW (mostly combined cycle)
- Wind turbines: 1,850 MW
- Loads resources approved to offer ancillary services: 1,800 MW

■ Older units removed from service since 2004:

- Retired: 3,100 MW (gas-fired)
- Mothballed: 8,400 MW (gas-fired)

ERCOT Resources Today

- Peak Demand – 60,272 MW
- Generation Capacity - 70,000 MW
- Generation Capacity Mix
 - 21,000 MW of coal and nuclear
 - 46,000 MW of natural gas
 - 3,000 MW of intermittent renewables and other
- Gas-fired capacity is on the margin in the spot market

Resource Adequacy History (I): Capacity Proposals

- 2001 – Reviewed existing reserve margin mechanisms including ICAP as a starting point
- 2002 – Staff proposed a centralized capacity auction
- 2003 – Rulemaking is suspended
 - Zonal vs. nodal debate dominating stakeholder process
 - Reserve margin very large, could postpone decision
 - Lack of consensus on capacity market design
 - Strong opposition to capacity markets from some stakeholders, especially competitive retailers
 - Potential impact of FERC SMD and modifications to Northeastern ICAP markets

Resource Adequacy History (II): PUCT Staff's Concerns in 2003-2005

- Peaking and baseload units have two very different payment streams
- Locational and operating characteristics not covered easily in capacity framework
- Retailers and industrial customers are very hostile to capacity payments
- ERCOT already functions as an energy-only market and has attracted substantial investment in new capacity
- Commissioners expressed concern that capacity payments are subsidies, which once established are very hard to remove

Resource Adequacy History (III): And Now for Something Completely Different....

Winter 2004-5:

- Reopened rule in response to tighter reserve margin
- No consensus approach to capacity market in U.S.
- New proposals - RPM and LICAP - seemed to increase level of regulatory intervention
- Became aware of successful energy-only approach in Australian market

Resource Adequacy History (IV): And Now for Something Completely Different....

Spring 2005:

- Staff developed whitepaper on issues related to energy-only mechanism in ERCOT
- Energy vs. Capacity Resource Adequacy Mechanism Workshops at Texas Commission

Resource Adequacy History (V): And Now for Something Completely Different....

Summer 2005:

- Staff's view of the choice before the Commission:
 - Increase reliance on markets (energy-only)
 - Return to integrated resource planning (capacity)
- Texas Commission decides to pursue Energy Only approach
- Staff uses Australian energy-only mechanism as starting point for crafting rule

Proposed Energy-Only Resource Adequacy Mechanism in ERCOT

- Offer cap that allows for recovery of fixed costs with backstop mechanisms
- Credit requirements for load-serving entities
- Design differentiates between scarcity pricing and market power abuse for all but the largest generation portfolios
- Publication of offer curves in a shorter time frame than in FERC jurisdictions
- Aggressive promotion of market-based demand-side participation

Advantages of an Energy-Only for End-Use Customers in ERCOT


- Retail market success and demand side innovations likely will reinforce each other
- Higher offer caps will spur innovation for commercial and industrial customers
- Avoids conflicts between incumbents' financial interests and implementation of new technologies and approaches

Lessons Learned in Developing an Energy-Only Mechanism (PUCT Staff) (I)


- All parts of the market design must work together
- Develop a scarcity pricing mechanism for the market
- Remove impediments to market-based demand response
- Provide incentives for load and generation to bilateral contract

Lessons Learned in Developing an Energy-Only Mechanism (PUCT Staff) (II)

- Energy-only mechanism and offer caps must reflect differences in
 - Generation mixes
 - Peak load patterns
 - Market power regimes
 - Regulatory regimes



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