Nodal Program Update

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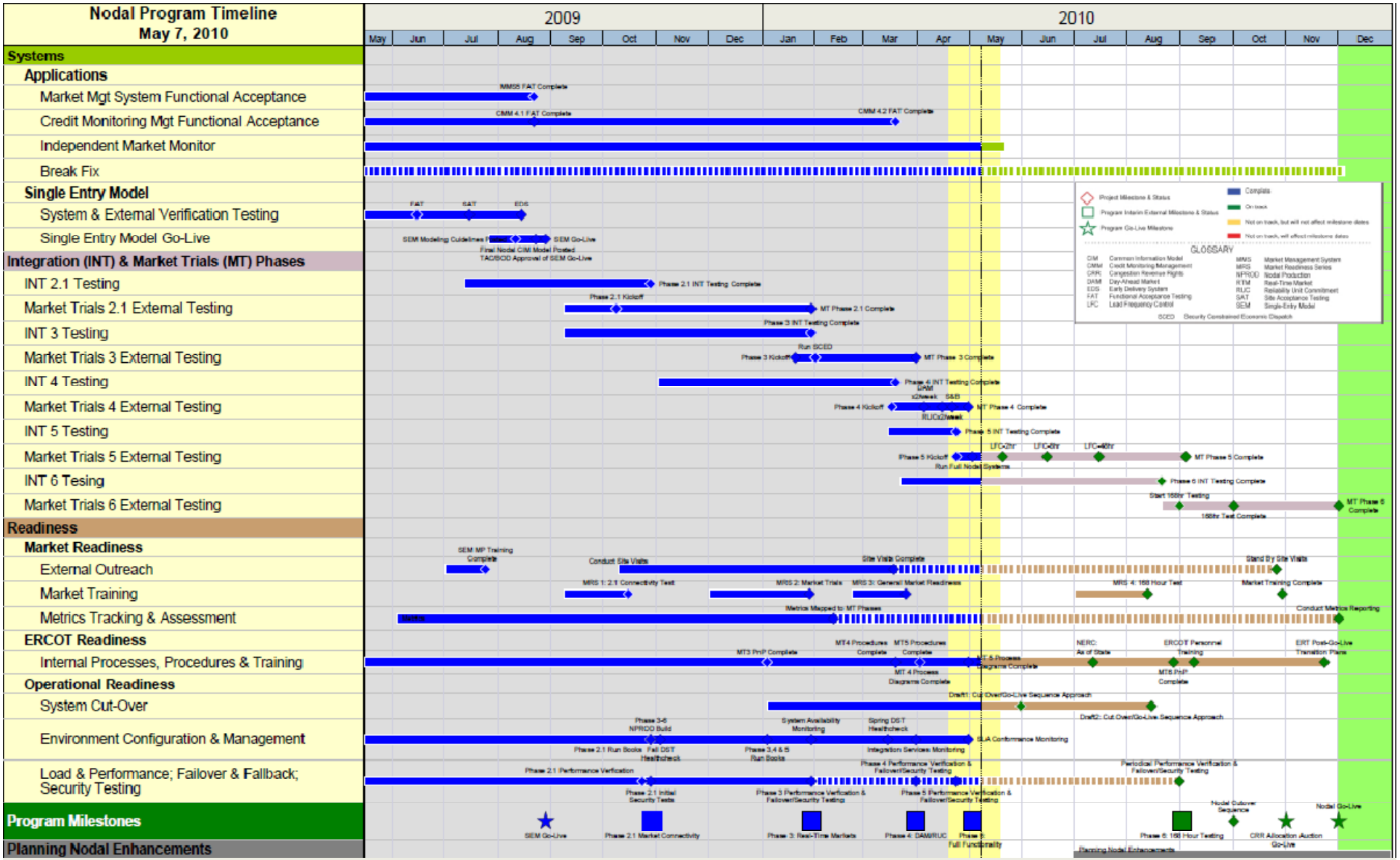
State Affairs Committee

12 May 2010

Integrated Nodal Timeline – Go-Live December 1st, 2010



Texas Nodal Market Implementation

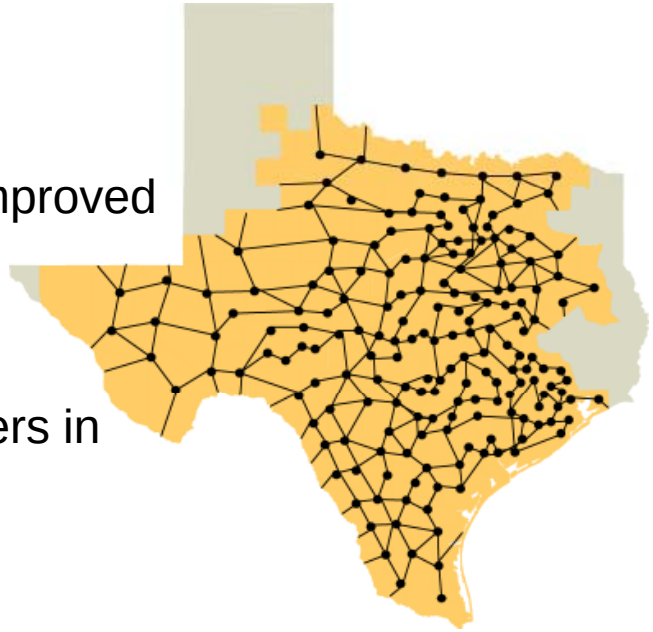
A Cost-Benefit Study was ordered by the Public Utility Commission of Texas as part of PUC Substantive Rule 25.501 under PUCT project 26376 in 2004. The study reported that the NPV of system-wide benefit from the nodal market over first ten years of its operation are estimated as follows:

- $339 million in system-wide benefits attributable to improved generation dispatch

- $520 million in system-wide benefits attributable to improved generation dispatch and generation siting

- $5.6 billion in consumer benefits to electricity end users in ERCOT

- $5.08 loss in revenues accrued to generators in ERCOT



* Tabors Caramanis & Associates (TCA) and KEMA Consulting, Inc. (KEMA) were contracted by the Electric Reliability Council of Texas for the study which was conducted throughout 2004 and delivered on November 30, 2004

202 Days to Go-Live

14 Weeks into Market Trials
0 Items Impacting Go-Live Date

Achievements within Market Trials:

- Market Trials has been running for 14 weeks
- Market question topics have shifted from qualifications and participation questions to stability and operational inquiries
- Qualifications
  - 97% of the QSEs have qualified
  - 99% of network model has been validated
- Congestion Revenue Rights (CRR)
  - Three monthly CRR auctions have been completed and invoiced; one balance of year
- Six month Locational Marginal Pricing (LMP) analysis started in March
- Day Ahead Market (DAM) / Reliability Unit Commitment (RUC)
  - Twelve DAM runs have been completed
  - DAM Running twice a week
  - Continual strong participation from the Market Participants (Averaged 175 QSEs/ DAM)
  - Market Participants have participated in both Real Time and DAM Settlements

Upcoming Milestones for Market Trials:

- Reporting support for DAM/RUC/ Supplemental Ancillary Service Market (SASM)
- Credit Monitoring Management Module (CMM)
- DAM / RUC 3x/wk
- DAM / RUC 5x/wk
- Closed Loop Load Frequency Control (LFC)
- 168 HR Test
- System Cut-Over / Zonal Decommissioning
- Go-Live

14 Weeks into Market Trials
0 Items Impacting Go-Live Date

Internal Milestones within ERCOT:

- All procedures and process documentation will be completed on schedule by September 2010
- All internal Nodal training will be completed on schedule by September 2010
- Full site failover has been successfully tested for 90% of all systems
- Extended integrated site failover test is currently being planned for 5/22 through 6/5
- Real-time monitoring has been enabled for the key systems and alerts are being triggered on a 24x7 basis
- Cut-Over plans vetted with Management and Program Office
  - Internal roll out on Thursday, May 13th

Milestones with Market Participants:

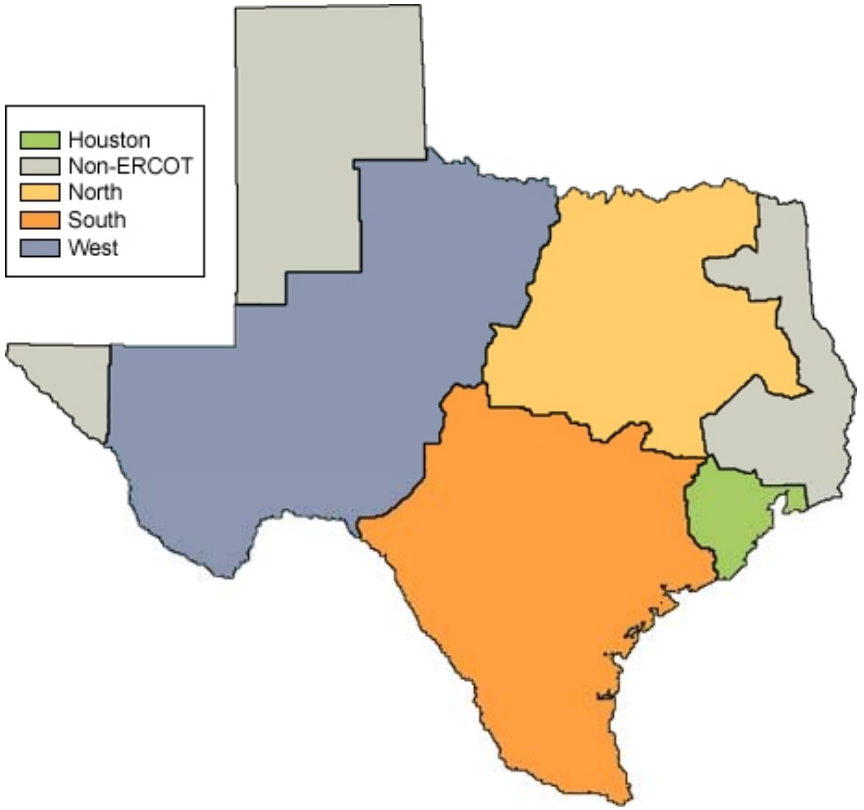
- 35 individual participants visited on market outreach program
  - 96% of total generation represented in site visits
  - 92% of all load visited
  - 681 total attendees
- Held one workshop each for Wind, Retail, and Combined Cycle
- Cutoff date on August 13th for qualifying Market Participants

Questions ?

Appendix

Current Zonal Market

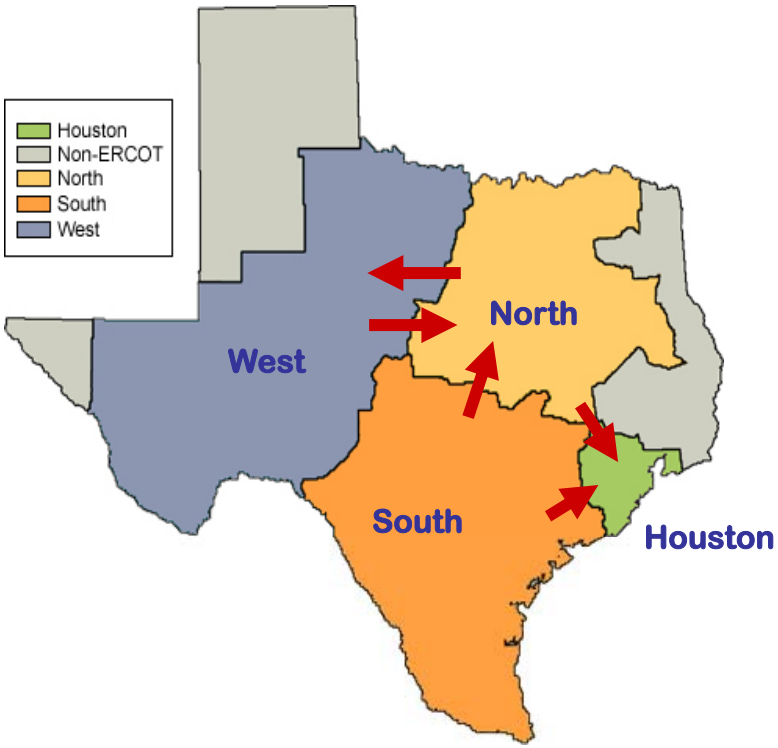
- Zonal Model (Congestion Management Zones)
- Four congestion zones, four wholesale price points
- 5 CSCs for inter-zonal congestion management
- Congestion costs directly assigned or uplifted
- ERCOT provides portfolio level deployment instructions to QSEs.
- TCR is the current mechanism to hedge financial risks of congestion management rents.



ERCOT Zonal Market Model

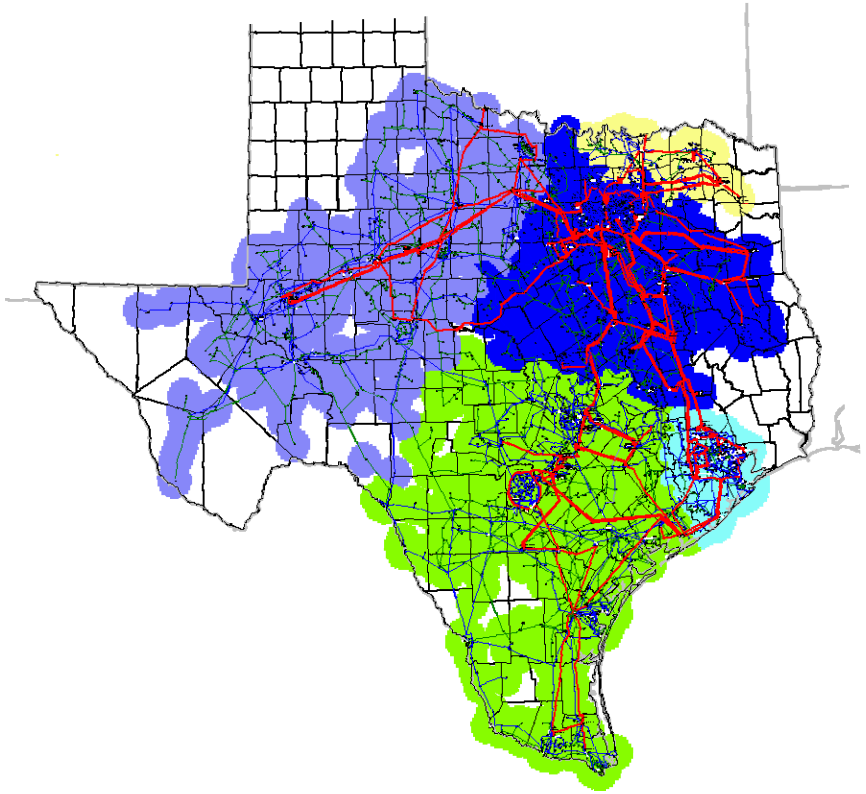
Zonal Congestion

- Congestion between zones (CSC)
- Managed with Portfolio Balancing Energy deployments by zone



Local Congestion

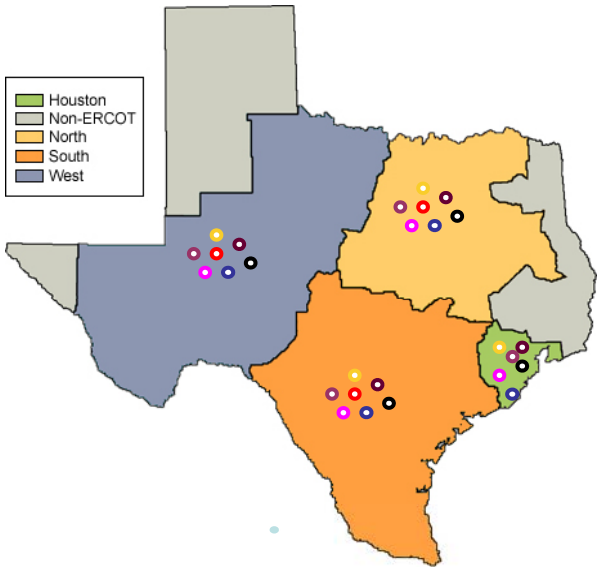
- Congestion other than CSC
- Managed with local Balancing Energy deployments by Resource

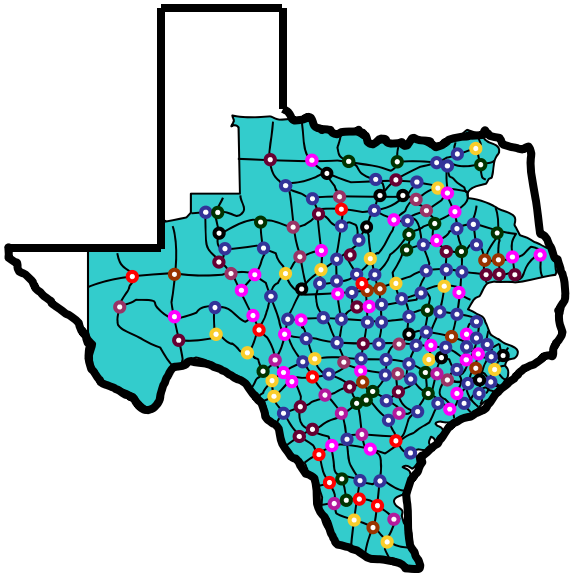


Drivers for Change: Zonal Inefficiencies

Zonal Market Model	Physical Operation
Portfolio scheduling, bidding, deployment	Unit by unit, bus by bus, line by line

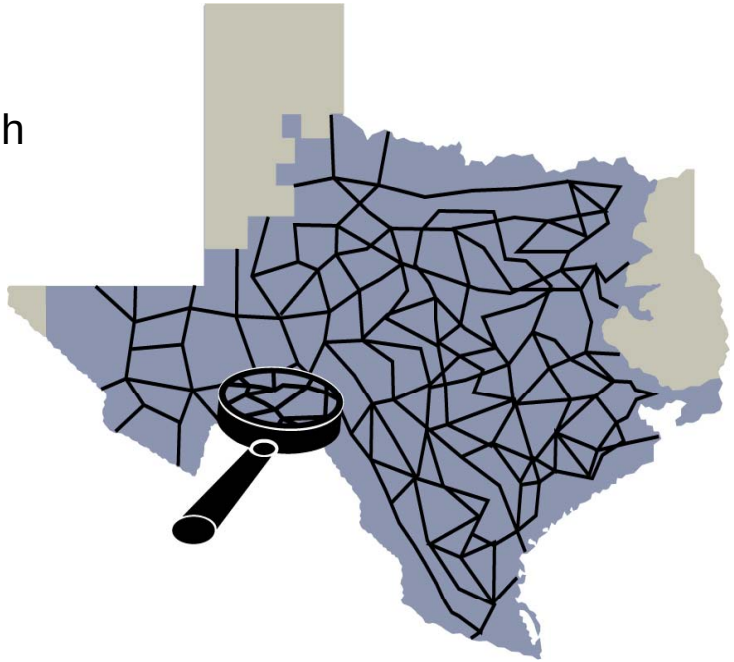
- Portfolio schedules have to be disaggregated and deployments issued to individual units
- ERCOT must “guess” the unit-by-unit response





The LMP Foundation

- Locational Marginal Pricing (LMP) provides:
  - Market transparency
  - Observable consequence of behavior
  - Direct assignment of local congestion costs
  - Balance of reliability and economics
  - Strong market signals
  - Efficient ERCOT instructed unit-level dispatch
- Market Participants Impacted:
  - Qualified Scheduling Entities (QSEs)
  - Load Serving Entities (LSEs)
    - Retail Electric Providers (REPs)
    - Municipally Owned Utilities
    - Electric Cooperatives
  - Transmission Service Providers (TSPs)
  - Distribution Service Providers (DSPs)
  - Resource Entities
  - Power Marketers/Traders
  - Aggregators



202 Days to Go-Live

Phase 5: Full Functionality
0 Items Impacting Go-Live Date