



Texas Nodal Market Implementation
ERCOT Board of Directors Meeting
Program status and budget briefing
October 17, 2006

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- **Program Status and Spending to Date**
- **Proposed Budget Baseline Update**

■ Program Management

- Program budget submission developed, reviewed with TPTF and TAC

■ IDA Package

- High Level Architecture ready for TPTF submission
- System of Systems Architecture (SoSA) enterprise view and 24 use cases reviewed by TPTF
- RUP design framework and 12 of 20 document templates drafted for internal review

■ Commercial Systems Package

- Received TPTF approval of 10 of 27 Commercial Operations Business Requirement Documents (initial TPTF presentations complete for 7 more)
- Lodestar Prototype initiated to prove out functionality and performance of Lodestar upgrade for Nodal

■ NMMS/Network Model Package

- Conceptual System Design in draft
- Use cases published to Network Modeling forum
- 9 of 14 TDSP consultations initiated – a few Co-Ops remain, using client services to schedule
- Network Modeling & Telemetry baseline completed, working with TDSPs weekly on modeling issues

■ EMS Package

- Project team restructured under MMS Project Manager, recovery plan in place
- AREVA has fully endorsed actions and replaced their Project Manager
- SME staffing from Kema under ERCOT direction

■ MMS/SCED Package

- 4 of 5 MMS requirements documents under internal review prior to TPTF submission
- ABB started initial phase 2 implementation activities for SCED
- Integrated ERCOT/ABB team continues to perform well

■ CRR Package

- CRR Business Requirement document currently in TPTF review
- Initial Conceptual System Design drafted

■ EDW Package

- PM on board, project team defined and mobilizing
- IMM and Compliance requirements initiated

■ Market Participant Engagement & Readiness Package

- TPTF has been able to maintain the published schedule of reviews
- Significant interest has been expressed in participation in TPTF MIS and Training sub-groups
- MIS business requirements document approved by TPTF
- MIS vendor (Enterpulse) on board
- Training curriculum approved by TPTF (20 market-focused courses, 17 internal ERCOT systems/process courses, approx 10,000 hours of training delivery)
- 2 of 20 market-focused courses in delivery (73 ERCOT and 150 MP staff participated to date), 4 more currently in development
- First off-site training events (Garland) scheduled 10/17

■ ERCOT Readiness & Transition Package

- 5 of 8 revised Operating Guides sent to Market Rules
- Process/procedure inventory identified ~600 documents, currently assessing Nodal impact
- ERCOT training needs confirmed by Department
- EDS Strategy revised to reflect TPTF preferred implementation timeline

■ Integration Package

- ERCOT/UISOL team mobilized
- Architecture for integration between MMS/CRR and Settlements developed
- Detailed requirements for proof of concept developed

■ Infrastructure Package

- Contract let with EMC to virtualize 150 windows servers, releasing data center power for Nodal
- IBM p595 deployed in Austin data center, IBM scheduled on site to configure 10/12. DMX3 storage delivery for Austin arrived 10/5, EMC on site
- ERCOT board package developed for the purchase of Taylor DMX3 and p595 cluster
- Commercial Ops Development environment released
- CRR development environment delivered to Nexant
- AREVA development environment shipped and received week of 9/25

■ Integrated Testing Package

- Test Lab - facility build-out complete, equipped and occupied by testing team
- Initiated conceptual design for testing (data sources, stub-ins, proofs of concept)

Overall program status is **red**, based on delays to Requirements

Key Requirements will not be approved by 10/30:

Outstanding Requirements	Projected TPTF approval date
EMS – 12 (of 12)	12/6
MMS – 5 (of 5)	11/6
Commercial Systems – 5 (of 27)	11/6
EDW – IMM (1 of 1) and Compliance (1 of 1)	TBD

EMS has experienced a significant failure in requirements development – all documents previously submitted to TPTF have been withdrawn as unacceptable. Revised submission date for all EMS requirements to TPTF tentatively targeted for 11/28

Concern remains over the level of active TPTF participation (reflected in the high numbers of abstentions and reliance on core members to move motions of approval)

The Program is seeking to baseline the Timeline and Budget :

- The timeline recommended by TPTF/TAC has been incorporated into project schedules and reflected in budgets
- The budget material has been reviewed by TPTF and submitted to TAC

The program continues to drive delivery to this baseline

Spending year to date

EXPENDITURE CATEGORY	SEP	YTD
❑ O&M Expenses (,000):		
▪ Internal Labor	75	2,067
▪ Equipment, Tools, Materials & Supplies	2	36
▪ Outside Services/Consulting	551	2,531
▪ Facilities & Utilities	42	267
▪ Employee Expenses	3	29
▪ Interest & Fees	25	104
▪ Other	(5)	8
▪ <u>Sub-Total</u>	693	5,042
❑ Capital Expenditures (,000):		
▪ <u>Sub-Total</u>	5,185	9,178
❑ Total Expenditures (,000)	5,878	14,220 ¹
❑ Commitments		30,047 ²

Notes:

¹Total spending through August \$8,342K

²Reflects total value of Nodal Purchase Orders for goods and services, less payments, at 9/30

- **Program Status and Spending to Date**
- **Proposed Budget Baseline Update**

Major differences between the current estimate and the interim fee case (by Project)

Project	Current Estimate \$M	Zonal Pre-requisites \$M	"Normalized" estimate \$M	Interim Fee Case \$M	Difference \$M
Program Management (PMO)	7.1	-	7.1	2.0	5.1
Integration & Design Authority (IDA)	6.8	-	6.8	2.0	4.7
Network Model Management System (NMMS)	12.7	12	0.7	0.6	0.1
Energy Management System (EMS)	17.5	8	9.5	4.3	5.2
Market Management System (MMS)	26.3	-	26.3	10.9	15.4
Congestion Revenue Rights (CRR)	6.3	-	6.3	4.5	1.8
Commercial Systems (COMS)	14.8	-	14.8	9.1	5.7
Enterprise Integration (EIP)	12.3	-	12.3	0.5	11.9
Enterprise Data Warehouse (EDW)	4.0	-	4.0	2.5	1.5
Market Information System (MIS)	7.8	-	7.8	0.4	7.4
Infrastructure (INF)	61.8	17	44.8	32.9	11.9
Integration Testing (INT)	17.0	-	17.0	7.4	9.6
MP Engagement & Readiness (MER)	13.7	-	13.7	8.6	5.1
ERCOT Readiness & Transition (IRT)	29.3	-	29.3	10.7	18.6
Finance Charges	10.6	-	10.6	5.3	5.3
Contingency	15.0	-	15.0	24.1	(9.1)
TOTAL	263	- 37	= 226	- 125.7	= 100.3

Nodal budget big picture

Budget	Description
\$125.7M	<u>Basis for Interim Nodal surcharge, budget created December 2005</u> <ul style="list-style-type: none"> Submitted to PUCT in April 2006
+	
\$100.3M	<u>Underestimated costs</u> <ul style="list-style-type: none"> Market trials and training Architecture, RUP, PMO, and integration Product cost Miscellaneous (e.g. audits, testing) Internal labor??
=	
\$226M	<u>"Normalized" Nodal budget</u>
+	
\$37M	<u>Zonal pre-requisite spending</u> <ul style="list-style-type: none"> Infrastructure - \$17M EMS - \$8M NMMS, network model & telemetry - \$12M
=	
\$263M	<u>Total cost of Nodal</u>