



Nodal Program Update

Mike Cleary

Sr. VP and Chief Technology Officer

ERCOT Board of Directors

23 March 2010

Agenda

- **Program Status**
- **Market Readiness**
- **Financials**
- **Appendix**

253 Days to Go-Live

• Market Trials 3.0: 0 Items Impacting Go-Live Date

- 259 of 276 QSEs Qualified for MMS transaction submittal
 - 83 / 86 QSEs w/ Resources
- 99.9 % of Generation Qualified

– Congestion Revenue Rights (CRR)

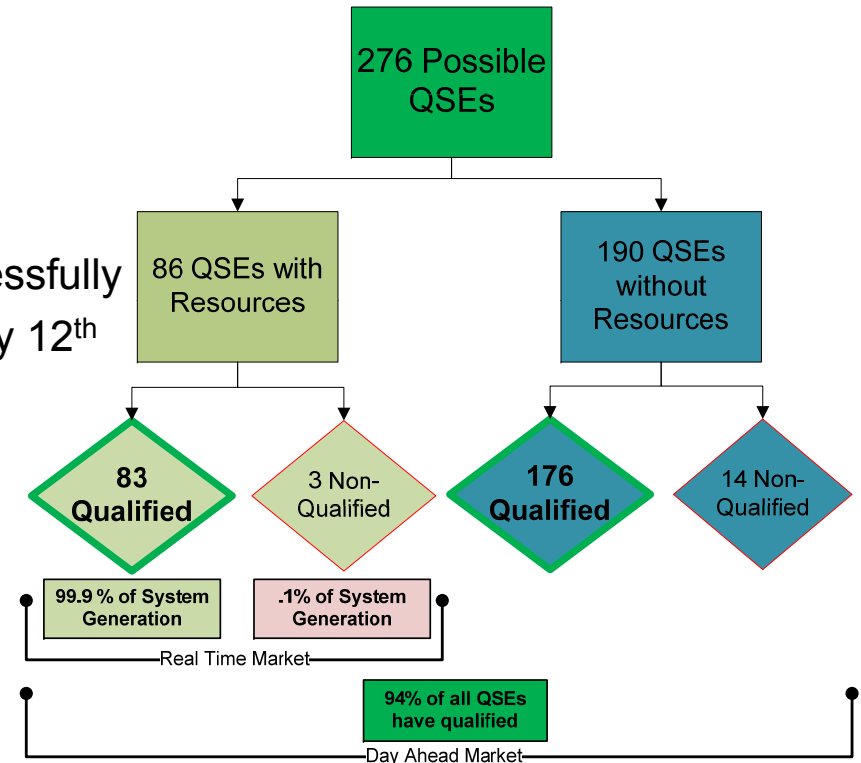
- 65 of 76 CRRAH qualified to date
- March auction completed and Invoiced successfully
- 1st monthly auction for March ran on February 12th
 - 38 MP's participated – 9,697 total submittals
 - » 3,103 cleared transactions
- April auction opened March 8th – March 12th

– Real Time Markets / Outage Scheduler

- 49 of 86 QSEs
- 7 of 25 TSPs
 - Window Closes for qualification on Aug 13th
- Outage Scheduler available to QSEs and TSPs

– Six month LMP analysis started on March 1st

– ERCOT Nodal Metric MO5 is **red** due to issues with the LMP posting



253 Days to Go-Live

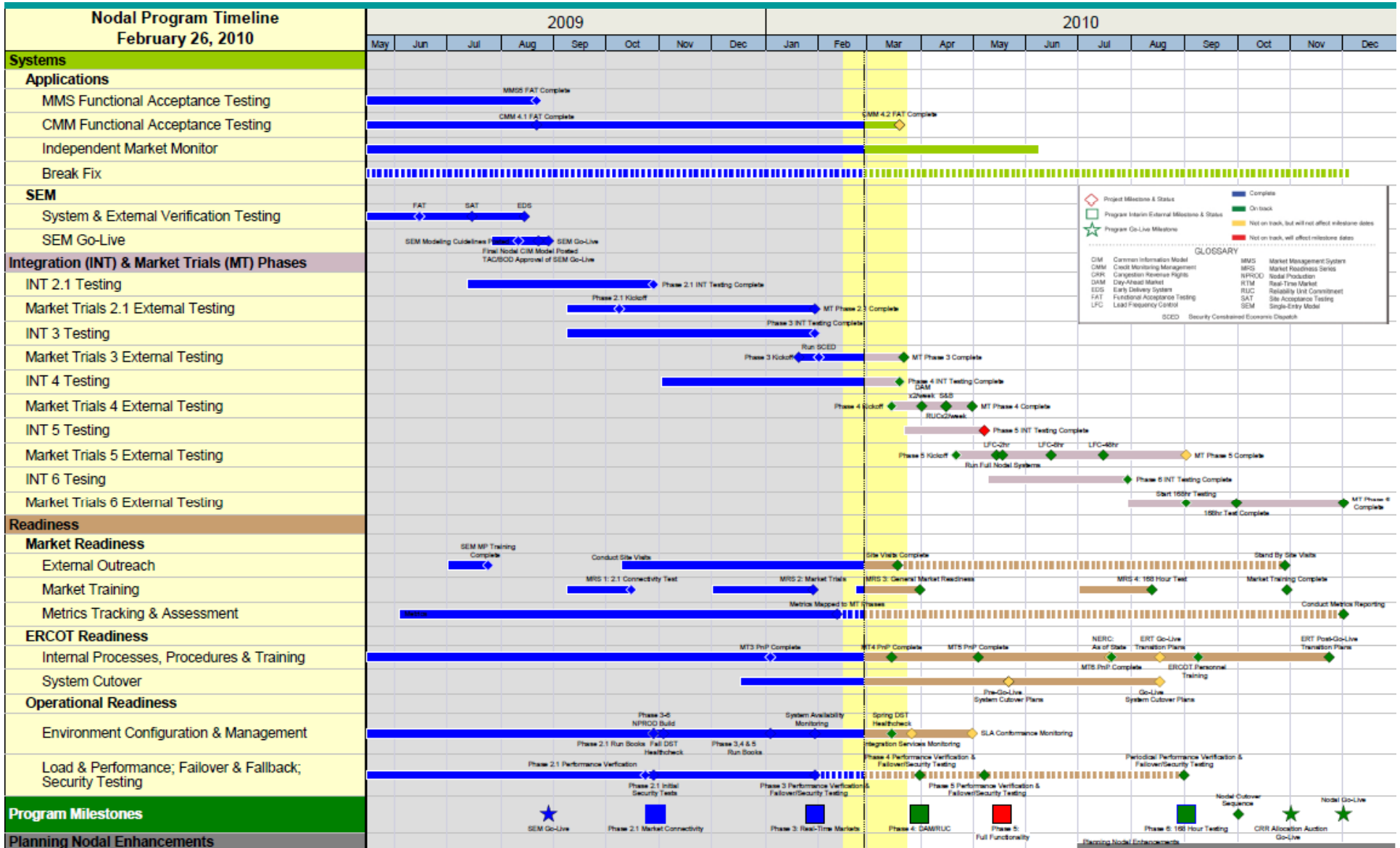
0 Items Impacting Go-Live Date

- **Market Trials 4.0: DAM/RUC**
 - Starting Thursday Apr 1st, for Operating Day Friday April 2nd
 - On Schedule
- **Market Trials 5.0: Full Functionality**
 - Starting May 3rd
 - 2 Week Slippage
 - Mitigation plan in place to pull back on track
 - » Overtime and budget monitoring
- **Market Readiness**
 - 36 of 37 outreach sessions completed
 - Next market readiness seminar is March 25th
 - » Executive Briefing
 - Additional market metrics light up on March 10th

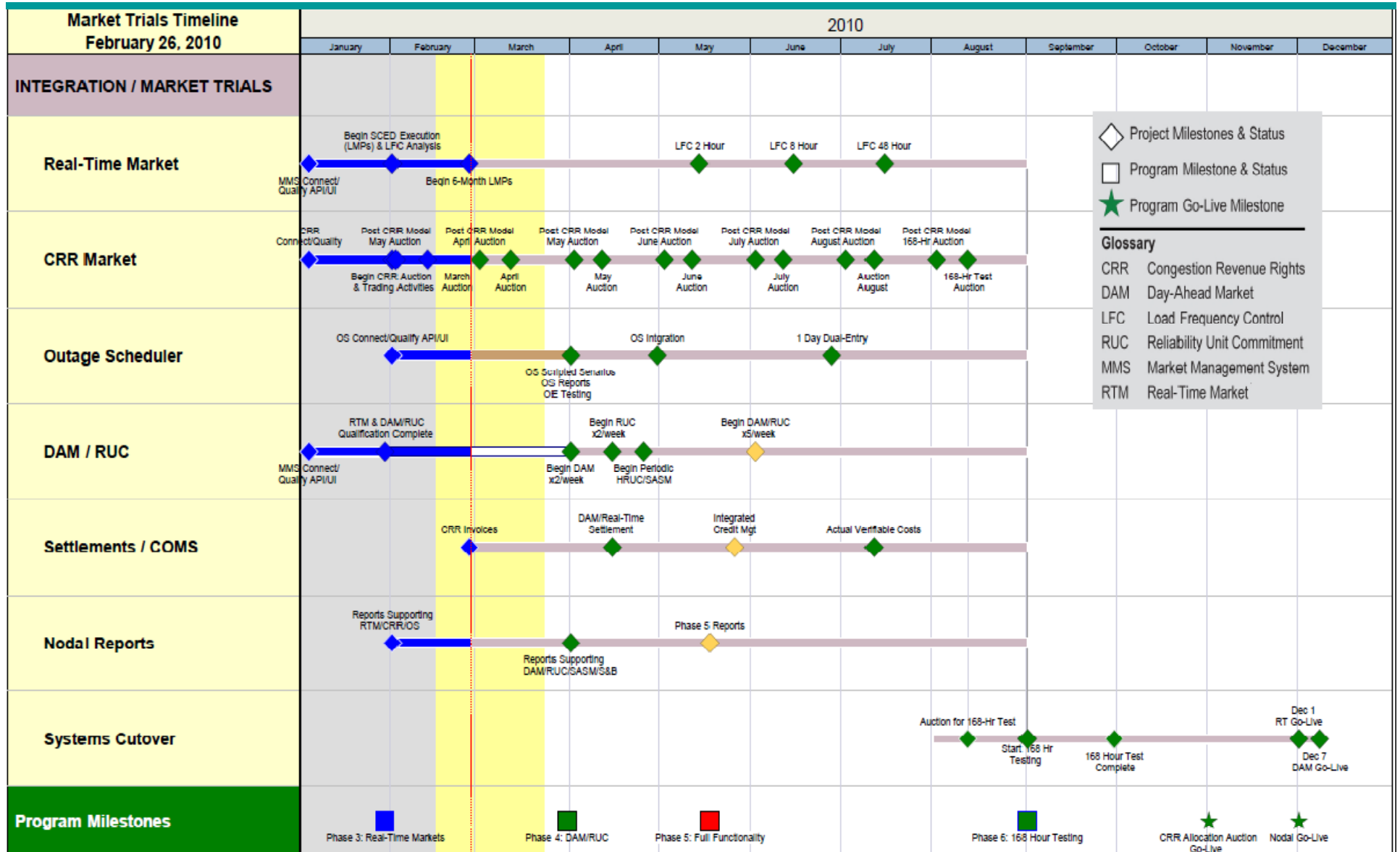
Key Takeaways:

- DAM execution begins in 8 days
- Continue focus of participation in Real-Time Market
 - Offers - Only 85% of the expected offer curves are in place
 - Telemetry - Continued QSE/TSP focus on telemetered data
 - Output schedules submissions missing when offer curve not submitted
- Continue to increase CRR auction participation for the April auction and account holder qualifications
 - April CRR auction began on Monday March 8th

Integrated Nodal Timeline



2010 Market Trials Timeline



Program Milestone Schedule Mitigation

■ **Phase 5: Full Functionality**

Integration Testing Schedule is still two weeks behind: No Impact on Go-Live

– **Scope**

- End to end integration testing
- Begin HRUC/SASM
- Daylight Savings time change verification
- Phase 5 performance verification

– **Mitigation Strategy**

- Continue to leverage weekend overtime for Phase 5 test
- Prioritize and phase in the delivery of reports during Market Trials
- Prioritize Testing to ensure the critical functionality and reports are completed first
- Prioritize must have End-to-End scenarios
- Continue to efficiently schedule testing and release management windows

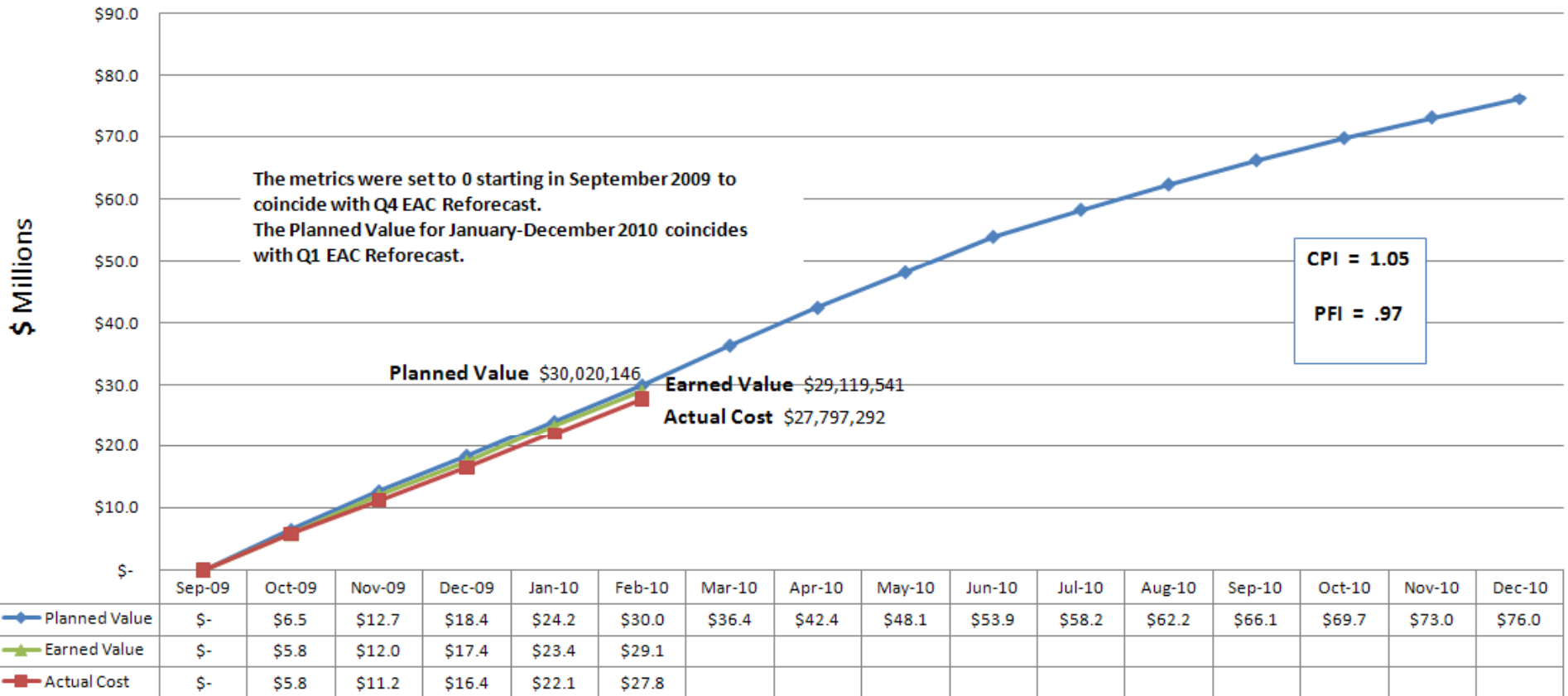
Nodal Program Risks & Issues

Risk/Issue	Impacted Milestone	Target	Category	Probability	Severity	Status
Integration Testing - Risk <i>Continued risk around technology delivery of business systems integration due to complexity and continuing maturing of application and data dependencies.</i>	Program	May 2010	Scope / Schedule / Budget	Low	Med	<ul style="list-style-type: none"> Phase 4 On track; planning complete, execution in progress Phase 5 final planning in progress
Market Interaction Operating Level Agreements (OLAs) <i>Need to determine operating level agreements associated with market interactions to assist ERCOT in establishing operational thresholds:</i> -Network Model Load Frequency -DAM Sizing -CRR sizing -Reporting	Program	April/ May 2010	Scope / Budget	High	Low	<ul style="list-style-type: none"> Phase 4 OLA definitions complete Phase 5 OLA definitions in progress NATF and NDSWG heavily involved in issue On track On track; ERCOT presented comparable sizing to NATF on 03/02/10 On track
Inadequate Backup for ICCP Failure: <i>Current Protocol Language does not allow ERCOT to use State Estimator results as a backup input to SCED, LFC, & NSA processes in the event of an ICCP failure from both sources of Resource Status.</i>	Program	April/ May 2010	Scope / Schedule / Budget	High	High	<ul style="list-style-type: none"> ERCOT submitting NPRR language for consideration No impact to systems anticipated based on Impact Analysis

Earned Value for the Nodal Program

Nodal Program

Chart only uses values associated with Internal Labor Costs, External Resource Costs, Administrative & Employee Expenses, Vendor and Backfill



Participant Readiness Touch Points

2010

	March	April	May	June
Meetings	<ul style="list-style-type: none"> • NATF 3/2 	<ul style="list-style-type: none"> • NATF 4/6 	<ul style="list-style-type: none"> • NATF 5/4 	<ul style="list-style-type: none"> • NATF 6/1
Training	<ul style="list-style-type: none"> • Nodal 101 • LSE 201 • Basic Training • Generation 101, 201 • CRR – instructor-led ◆ Settlement Workshop • Operations Seminar 	<ul style="list-style-type: none"> • Nodal 101 • Trans 101 • Generation 101, 201 • CRR – instructor-led • NMMS • Economics of LMP ★ Combined Cycle Workshop 	<ul style="list-style-type: none"> • Nodal 101 • Trans 101 • Generation 101, 201 • CRR – instructor-led • NMMS • Economics of LMP 	<ul style="list-style-type: none"> • Nodal 101 • LSE 201 • Generation 101, 201 • Economics of LMP ★ Ancillary Service Workshop
Outreach	<ul style="list-style-type: none"> • 4 site visits • Scheduled Site Visits conclude ◆ MRS #3 March 25th 	<ul style="list-style-type: none"> • Standby site visits • Phase 4 metrics launch 	<ul style="list-style-type: none"> • Standby site visits • Metrics monitoring 	<ul style="list-style-type: none"> • Repeat Retail Workshop (Dallas) – <i>tentative</i> • Phase 5 Metrics launch
Market trials	<ul style="list-style-type: none"> • Weekly calls • Phase 3 Execution • Phase 4 Handbooks <ul style="list-style-type: none"> • <i>Updates to prior handbooks</i> • LFC individual QSE tests 	<ul style="list-style-type: none"> • Weekly calls • Phase 4 Market Trials initiates • Phase 5 Handbooks <ul style="list-style-type: none"> • <i>Updates to prior handbooks</i> • <i>Credit</i> 	<ul style="list-style-type: none"> • Weekly calls • 2 hr system-wide LFC test • Phase 5 Market Trials initiates 	<ul style="list-style-type: none"> • Weekly calls • 8 hr system-wide LFC test • Full market trials functionality

Next 60-days of Classes and Settlement Workshops

Course	Start Date	Location
Congestion Revenue Rights	March 9	Norris Conference Center (Houston)
Settlements Workshop –RUC/RTM	March 9	City of Garland Fire Building (Dallas)
Settlements Workshop –RUC/RTM	March 23	Calpine (Houston)
ERCOT Nodal 101	March 29	PSEG (New Jersey)
Generation 201	March 30	ERCOT Met Center (Austin)
LSE 201	April 7	Suez Energy (Houston)
Generation 201	April 20	Calpine (Houston)
ERCOT Nodal 101	April 26	Tenaska Power Services (Dallas)
Congestion Revenue Rights	April 27	Hilton Garden Inn (Dallas)
ERCOT Nodal 101	May 10	ERCOT Met Center (Austin)
Congestion Revenue Rights	May 11	ERCOT Met Center (Austin)

Enrollment at: <http://nodal.ercot.com/training/courses/index.html>

Outreach Program Overview

Outreach Site Visits continue through March 2010

Confirmed Completed

Entity	Date	Entity	Date
<input checked="" type="checkbox"/> LOWER COLORADO RIVER AUTHORITY	9-Oct	<input checked="" type="checkbox"/> NRG TEXAS POWER	15-Dec
<input checked="" type="checkbox"/> CALPINE CORP	14-Oct	<input checked="" type="checkbox"/> DIRECT ENERGY LP	5-Jan
<input checked="" type="checkbox"/> AUSTIN ENERGY	20-Oct	<input checked="" type="checkbox"/> CPS ENERGY	6-Jan
<input checked="" type="checkbox"/> CITY OF GARLAND	21-Oct	<input checked="" type="checkbox"/> BTU (Bryan Texas Utilities) SERVICES	13-Jan
<input checked="" type="checkbox"/> GDF SUEZ ENERGY MARKETING	29-Oct	<input checked="" type="checkbox"/> DIRECT ENERGY	14-Jan
<input checked="" type="checkbox"/> ANP FUNDING	3-Nov	<input checked="" type="checkbox"/> APX	19-Jan
<input checked="" type="checkbox"/> LUMINANT ENERGY	5-Nov	<input checked="" type="checkbox"/> OCCIDENTAL	20-Jan
<input checked="" type="checkbox"/> INVENERGY WIND DEVELOPMENT	10-Nov	<input checked="" type="checkbox"/> TENASKA POWER SERVICES	26-Jan
<input checked="" type="checkbox"/> EXELON	11-Nov	<input checked="" type="checkbox"/> OPTIM ENERGY	27-Jan
<input checked="" type="checkbox"/> AMERICAN ELECTRIC POWER SERVICE	12-Nov	<input checked="" type="checkbox"/> E.ON	9-Feb
<input checked="" type="checkbox"/> CONSTELLATION ENERGY	17-Nov	<input checked="" type="checkbox"/> WIND PANEL (Houston)	16-Feb
<input checked="" type="checkbox"/> PSEG ENERGY RESOURCES	18-Nov	<input checked="" type="checkbox"/> RETAIL PANEL (Houston)	17-Feb
<input checked="" type="checkbox"/> J ARON	19-Nov	<input checked="" type="checkbox"/> TRI-EAGLE ENERGY	18-Feb
<input checked="" type="checkbox"/> FULCRUM POWER	2-Dec	<input checked="" type="checkbox"/> NEXTEra	26-Feb
<input checked="" type="checkbox"/> EAGLE ENERGY PARTNERS I LP	3-Dec	<input checked="" type="checkbox"/> XTEND ENERGY LP	10-Mar
<input checked="" type="checkbox"/> STEC	9-Dec	<input checked="" type="checkbox"/> BRAZOS ELECTRIC	10-Mar
<input checked="" type="checkbox"/> BP ENERGY COMPANY	10-Dec	<input checked="" type="checkbox"/> SHELL ENERGY	11-Mar
		<input checked="" type="checkbox"/> FORMOSA UTILITY VENTURE	16-Mar
		<input checked="" type="checkbox"/> Westar	18-Mar
		<input type="checkbox"/> TOPAZ POWER MANAGEMENT	TBD

Active MP Metrics

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
MP3 Market Submissions Connectivity Qualification	Green	QSERS	Generation Ratio Share	99.0%	1.0%	0.0%	0.0%	Successful submission of RT and DAM transactions	83/85 QSERS Qualified (includes QSEs with Load Resources).
	Amber	QSEs	Even weighting	92.6%	2.7%	1.1%	3.7%		175/189 QSEs qualified. Below 95% threshold for overall GREEN.
MP6 Telemetry Compliance with Nodal Protocols 3.10.7.5	Green	QSERS	Generation Ratio Share	99.9%	0.1%	0.0%	0.0%	Expected State Estimator telemetry submitted.	79/80 QSERS completed. 3501/3502 SE points provided (99.6%).
	Green	QSERS	Generation Ratio Share	99.9%	0.0%	0.1%	0.0%	Expected SCED telemetry submitted.	79/80 QSERS completed. 7621/7629 SCED points provided (99.1%).
	Green/White only	TSPs	Ownership Ratio Share	0.3%	0.0%	0.0%	99.7%	Expected TSP telemetry per ICCP Handbook submitted	1/17 TSPs completed, all other TSPs are in review by ERCOT. 12603/12941 TSP CB and LD points provided (93.8%).

Active MP Metrics Continued

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
MP11 Resource Registration	Amber	REs	Registered MW Capacity Ratio Share	82.3%	16.1%	1.6%	0.0%	Decision Making Authority form submitted, and GENMAP validated	147/157 Resources completed.
MP14-C TSP Model Validation	Amber	TSPs	Ownership Ratio Share	66.0%	34.0%	0.0%	0.0%	Network Model data validated by TSP	8/22 TSPs have submitted model validation e-mail to ERCOT.
MP15-A Real-time Market Daily Participation	Green	QSERS	Generation Ratio Share	99.0%	1.0%	0.0%	0.0%	Weekly average of daily SCED submissions	77/80 QSERS above 95% weekly average for SCED submissions.
MP15-B CRR Connectivity Qualification	Red	CRRAHs	Even weighting	79.4%	3.8%	11.5%	5.3%	Successful submission CRR transactions	63/78 CRRAHs qualified. Greater than 5% overall RED.
MP20 MP ability to submit Outages - Connectivity Test	Green/White only	QSERS	Generation Ratio Share	87%	0.0%	0.0%	13%	Successful submission of OS transactions. AMBER/RED scores light up 4/7/2010 after OS window closes.	52/80 QSERS qualified.
	Green/White only	TSPs	Ownership Ratio Share	50%	0%	0%	50%		9/25 TSPs qualified.

Active ERCOT Metrics

Metric Name	Current Score	Applies to	Percentage (if applicable)	Primary Criteria	Notes
E1 ERCOT Staff Completes Training	Green	ERCOT	100%	Training plans must be adhered to for highly impacted departments	15 out of 15 highly impacted departments are up to date with their training plans.
E9 Develop Nodal Procedures	Red	ERCOT	N/A	Procedures developed 1 month prior and exercised in the appropriate Market Trials Phase	153/158 procedures developed for Market Trials Phase 4. Deadline for completion was 3/1/2010. RED = More than 1 procedure not developed 1 month prior to applicable Market Trials Phase.
MO4 Verify SCED Execution Quality	Green	ERCOT	100%	All of the successful SCED executions passed the post-execution price validations for the given reporting period.	No error flags in 3,952 in successful Price Validation executions.
MO5 Generate 6 Months of LMPs	Red	ERCOT	47%	Greater than 95% of the SCED executions produced and posted LMPs for the given reporting period.	From 3/1 to 3/8, 1,245 SCED executions completed with no LMPs posted to the MIS. Posting errors were caused as a result of EIP configuration error to global application parameter.



Monthly Financial Review

Don Jefferis

Interim Director - Nodal Financial Management Office

16 February 2010

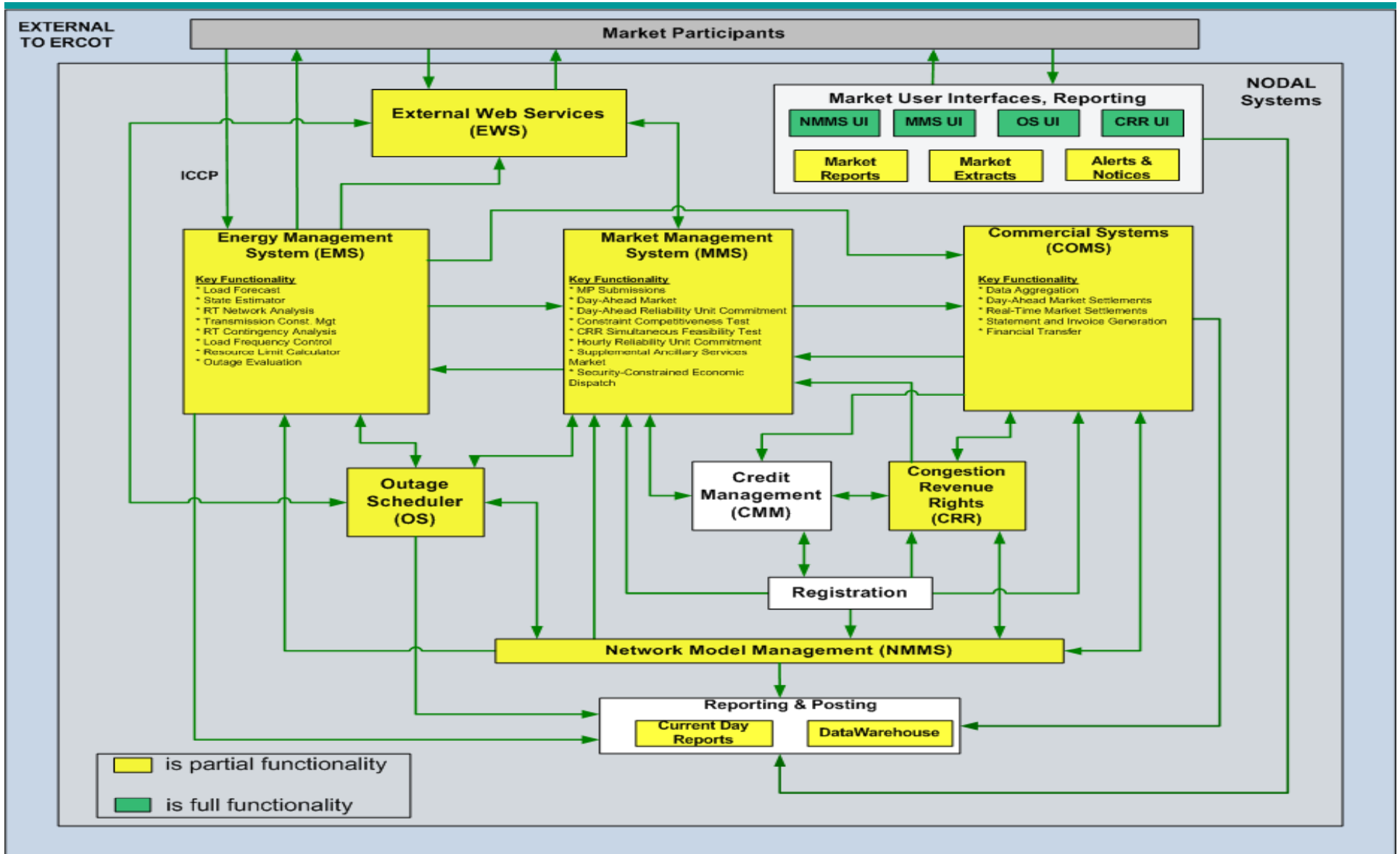
Monthly Financial Review

Financials to be provided before Board meeting.

Questions?

Appendix

Nodal Systems Blueprint - Market Trials - Phase 3 - Feb. 1st



Nodal Program Risks & Issues: Definitions

Definitions for Category, Probability and Severity of Risks & Issues:

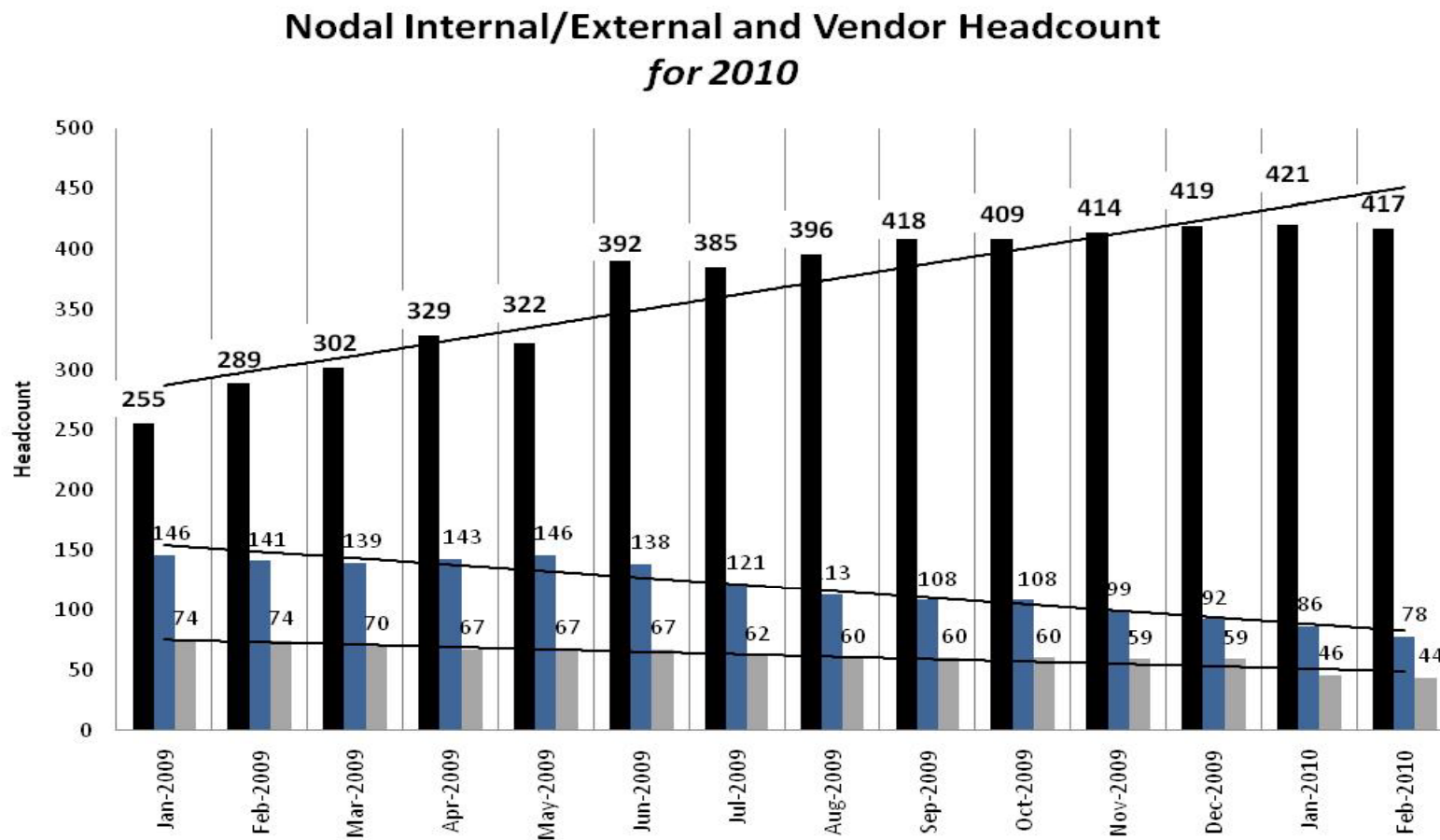
- **Category**
 - Scope : Will require a scope change
 - Schedule: Will require a schedule change
 - Budget: Will require a budget change
- **Probability**
 - High : Probability to occur is $\geq 90\%$; perceived impact would require a Change Request over the next 1-3 months
 - Medium: Probability to occur is between 31 – 89%; perceived impact would require a Change Request over the next 4 -10 months
 - Low: Probability to occur is $\leq 30 \%$; not expected to require a Change Request
- **Severity**
 - High: Milestone impact, or budget impact $> \$250,000$
 - Medium: Milestone impact - but expected to be mitigated, or budget impact between $\$0 - \$250,000$
 - Low: No milestone impact, or no budget impact

Defect Definitions

Severity	Definition
Severity 1: Data loss/critical error	Defects that render unavailable the critical functions of the system under test. These include errors such as system errors, application failures, loss of data, incorrect calculations, inability to transfer data, failure to access database, and inability to display information to the user.
Severity 2: Loss of functionality w/o workaround	Defects that render unavailable partial functionality of the system under test with no workaround available. These include errors such as incorrect information displayed to the user, information not updating correctly, extracts failing, and missing export files.
Severity 3: Loss of functionality with workaround	Defects that render unavailable partial functionality of the system under test with a workaround available. These include errors such as incorrect message displayed, optional information missing or not displayed correctly, not receiving e-mail notifications, and incorrect defaults.
Severity 4: Partial loss of a feature set	Defects that affect a feature that is not executed on a frequent basis and there is not a significant impact on the system. These include errors such as help information, filtering, and consistent naming.
Severity 5: Cosmetic/documentation error	Defects that are cosmetic and need to be resolved, but are not a factor in the functionality or stability of the system. These include errors such as field alignment, report formatting, drop down list order, fonts, column order and documentation that is inconsistent with the system(s) as tested.

	Prescription in Quality Center
Priority 1	Must fix ASAP
Priority 2	Must fix prior to Go-Live
Priority 3	Not critical to fix before Go-Live
Priority 4	Minor system/user impact
Priority 5	No system/user impact

Nodal Internal/External and Vendor Headcount 2010



	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10
■ ERCOT Employees	255	289	302	329	322	392	385	396	418	409	414	419	421	417
■ Contingent Labor	146	141	139	143	146	138	121	113	108	108	99	92	86	78
■ Vendor Labor	74	74	70	67	67	67	62	60	60	60	59	59	46	44