



# Nodal Program Update

Mike Cleary  
Chief Operating Officer

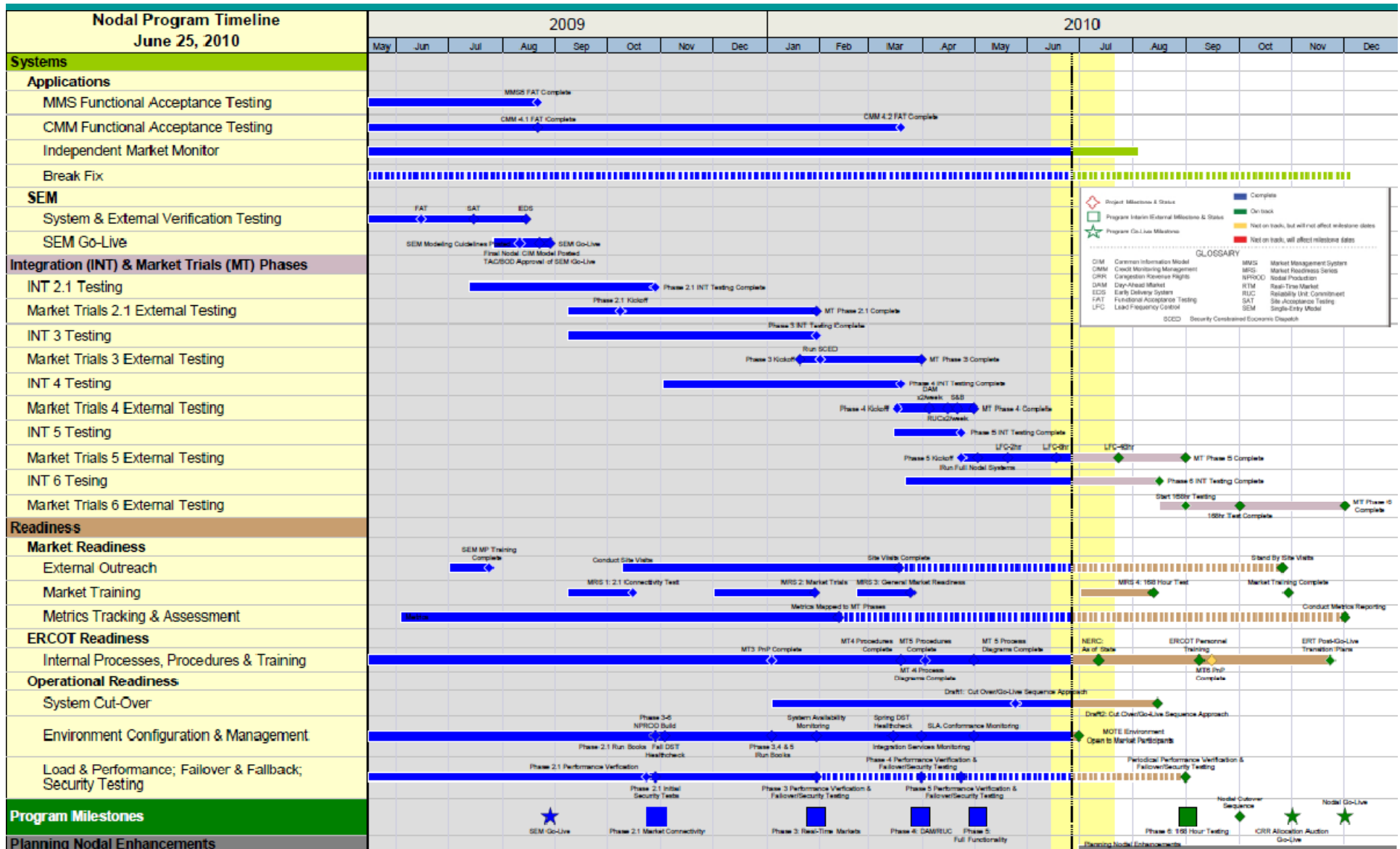
ERCOT Board of Directors  
20 July 2010

# Agenda

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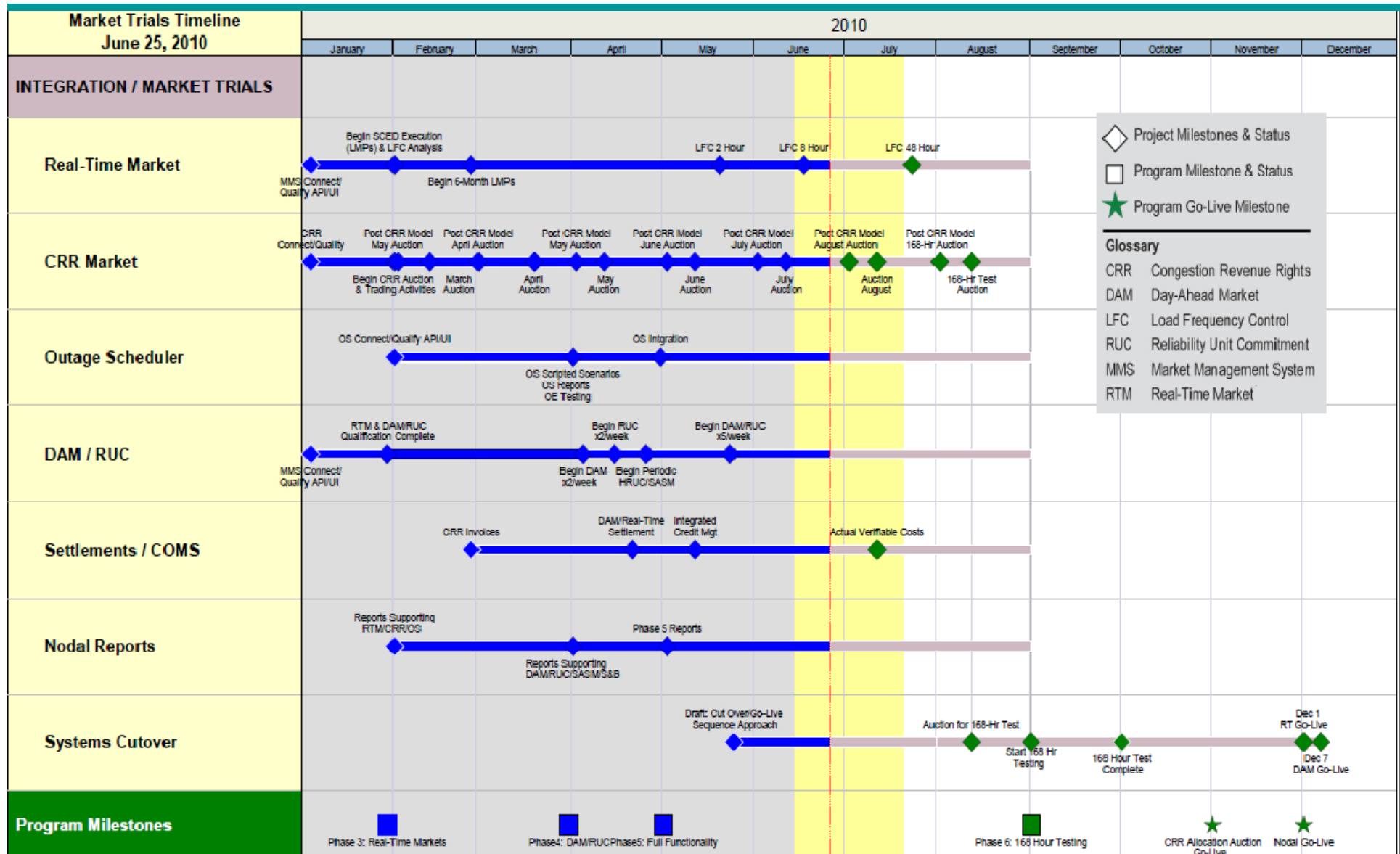
- **Program Status**
- **Nodal Go-Live Update**
- **Market Readiness**
- **Financials**
- **Appendix**

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



20 July 2010

# 2010 Market Trials Timeline – Go-Live December 1, 2010



# ERCOT Nodal Program Cut-Over Timeline

As of May 2010

Sep 2010

Oct 2010

Nov 2010

Dec 2010

Jan 2011

Nodal Project

168-Hour Test (9/1 - 9/30)

Nodal Go-Live  
00:00:01 (12/1)

RTM/SCED

ERCOT grid  
operations  
switch to Nodal  
at 14:00 (11/30)

CRR

ERCOT start  
accepting PORR  
Nominations for  
Dec 2010 Auction  
(10/13)

ERCOT to  
allocate PORRs to  
NOIEs for  
Dec 2010  
Auction  
(10/20)

ERCOT to  
post the Dec 2010  
Monthly  
Auction Notice  
(10/24)

Start Bid/Order  
Submission Window  
for Dec 2010 CRR  
Auction  
(11/4-11/10)

Run Dec  
2010  
CRR  
Auction  
(11/11)

Publication of  
Dec. 2010  
Monthly CRR  
Auction Results  
(11/16)

MPs should have Dec outages and  
beyond in synch. ERCOT Begin  
Approving/Rejecting Outages in  
Production using both Zonal and  
Nodal Systems (9/15 - 12/7)

MPs and ERCOT should  
attempt to maintain both Zonal  
and Nodal in support of 168-  
Hour Test (9/1 - 9/30)

ERCOT Ends  
Approval of Zonal  
Outages (12/8)

Outage Scheduler

MPs Enter  
Production Outages  
in Nodal Go-Live OS  
for Dec. and Beyond  
(9/1)

DAM / RUC / SASM

Market  
Submission  
Opens (11/23)

ERCOT Executes  
a Binding DA  
Market (11/30)

Settlements / COMS

Publication of  
Dec. 2010  
Monthly CRR  
Auction Invoice  
(11/17)

Payment  
Due for Dec  
2010 CRR  
Auction  
(11/22)

ERCOT pay CR  
Account Holders  
owed from Dec 2010  
Auction (11/23)

CMM

ERCOT Provides Initial  
Assessment of each MP  
Creditworthiness  
(10/12-10/20)

Post ACLs  
to MPs  
(10/21)

Post ACL to  
MP via MIS

MPs can post additional  
collateral for Dec 2010  
Auction (11/9)

Network Model  
(NMMS)

Deadline for Submitting  
Changes to the Dec  
Network Model (9/1)

Post CIM  
Model to  
MIS (10/15)  
Dec. Network  
Model Posted  
to Market for  
Validation (10/15)

Dec Model  
in Prod

-  Project Date
-  Program Go-Live Date
- Glossary**
- CRR Congestion Revenue Rights
- DAM Day-Ahead Market
- LFC Load Frequency Control
- RUC Reliability Unit Commitment
- RTM Real-Time Market
- SASM Supply Ancillary Svc Mkt
- COMS Commercial Systems
- CMM Credit Monitoring & Mgmt

# 133 Days to Go-Live

## **Market Trials has been running for 22 weeks Market Quality Testing and Operational Readiness**

### **Achievements within Market Trials:**

- CRR
  - Six monthly CRR auctions and one Balance of the Year auction have been completed and invoiced
- Real Time Markets
  - SCED
  - Real Time settlements
- DAM / RUC
  - DRUC has been running in conjunction with DAM for 13 weeks
  - DAM Settlements are being executed
  - Settlement and extract data has been available since Mid-May
  - Continual strong participation from the Market Participants (Averaged 197 QSEs / DAM run)
  - Operational scenarios ran twice a week in June
  - DAM / RUC 5 times per wk except for weeks that contain an LFC test
- Ancillary Services
  - Procured in every DAM for production quantities
  - Supplemental AS Market tested as needed
- Closed Loop LFC
  - 2 hour test occurred in May
  - 8 hour test occurred on June 17<sup>th</sup>
- Credit
  - Credit Module went into effect on May 14<sup>th</sup>

# 133 Days to Go-Live

## Market Trials has been running for 22 weeks

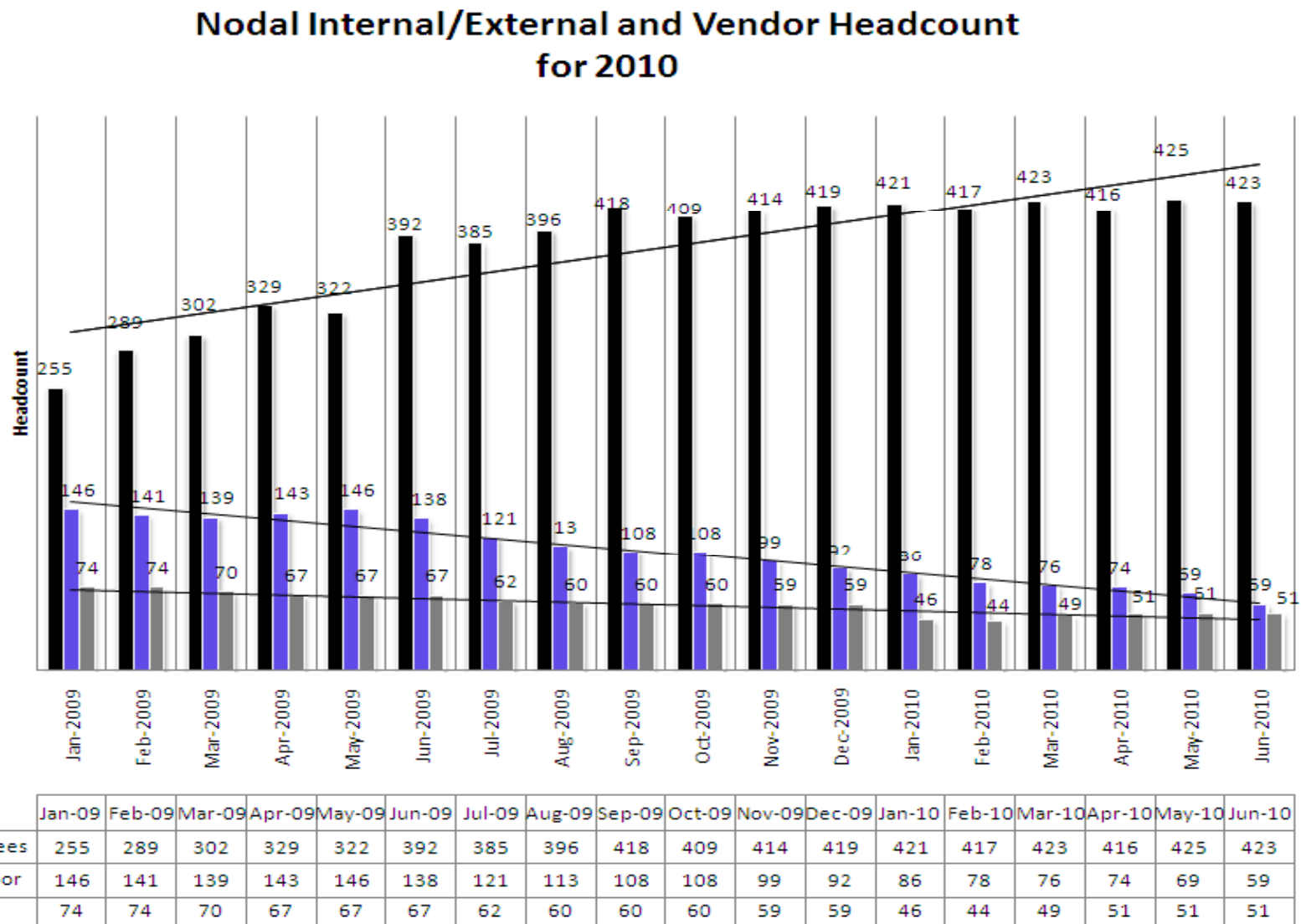
### Upcoming Milestones for Market Trials:

- Closed Loop LFC
  - 5 hour test scheduled for this week
  - 24 hour test scheduled for the week of August 2<sup>nd</sup>
  - Two additional LFC tests to be scheduled in August
- DAM/RUC/SASM Scenarios
  - Some operational scenarios will be re-run in August
  - Reduce the number of DAMs to create more resource availability to support additional LFC tests
- Market Changes in trials in July/August
  - NPRR206- Change in Credit Management Collateral calculations for Day-Ahead Market
  - NPRR202- Posting of ERCOT network model (redacted version for all MPs)
  - NPRR169- Posting Real-Time Prices after every SCED run
- 168 Hour Test prior to Go-Live (Sept 2010)
  - Market Readiness Seminar scheduled for July 28<sup>th</sup>

### System Cut-Over / Go-Live

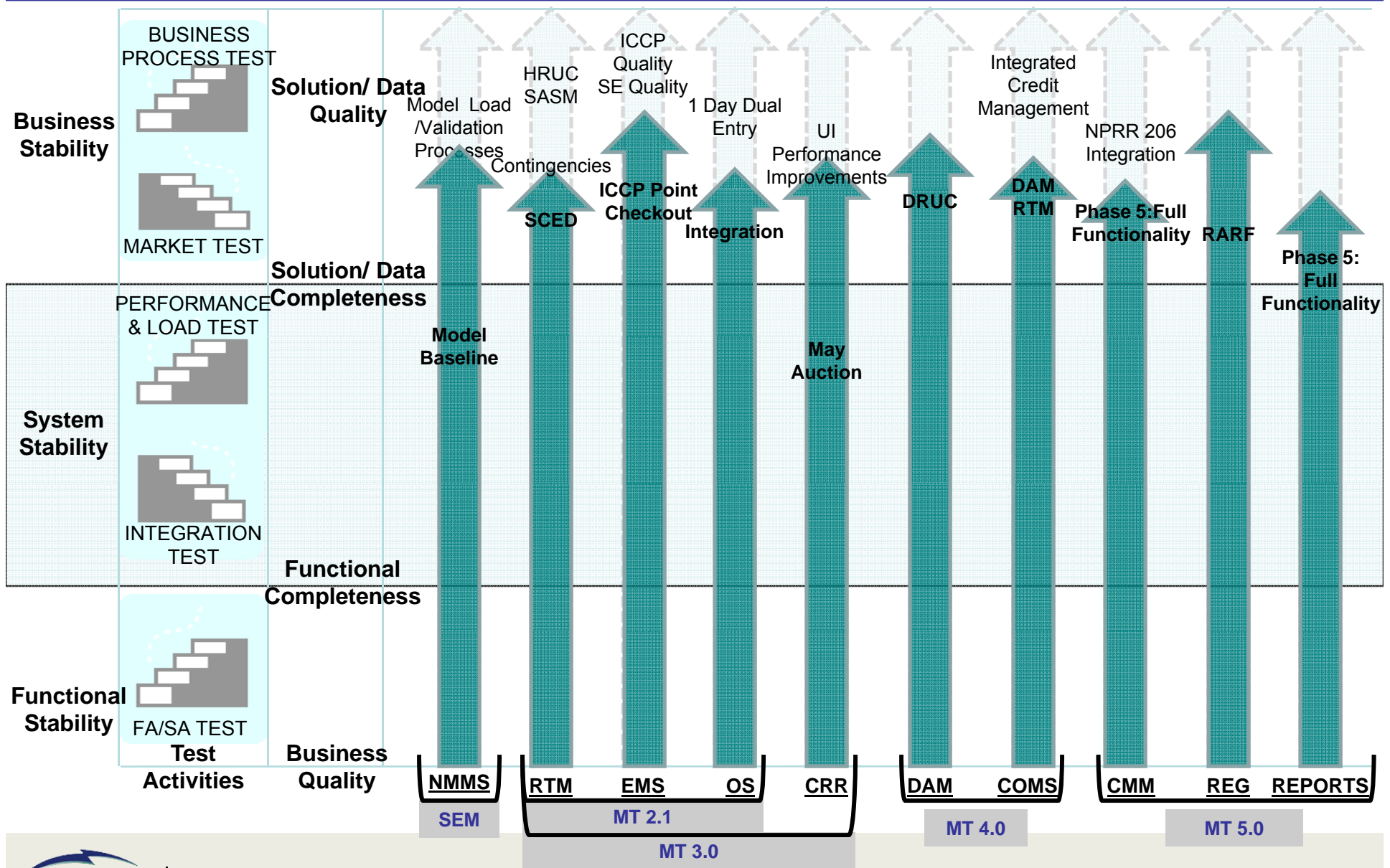
- Sept/Oct 2010– Network Modeling, Outage Scheduling
- November 2010- Go-Live CRR Auction
- December 1<sup>st</sup> - DAM/Real-Time Operations

# Nodal Internal/External and Vendor Headcount 2010





# Go-Live



# Nodal Program Risks & Issues

Risk/Issue	Impacted Milestone	Target	Category	Probability	Severity	Status
<b>Network Model Management</b> <i>Performance and availability issues around the NMMS.</i>	Program	July 2010	Schedule / Budget	Med	High	<ul style="list-style-type: none"> <li>Update given at NATF on 06/23</li> <li>Working closely with vendor to correct all issues</li> <li>Scheduled update at NAFT on 7/08</li> </ul>
<b>Market Design Assessment</b> <i>Risk around the protocol traceability project and the market results as each phase of market trials becomes active.</i>	Program	August 2010	Scope / Budget	Low	High	<ul style="list-style-type: none"> <li>Building experienced market design team to review and assess design and protocol alignment with market trials results</li> </ul>
<b>Operational Readiness</b> <i>Operational readiness of the Nodal systems and business processes are an increasing risk at this point in the program</i>	Program	September 2010	Scope / Schedule/ Budget	Med	High	<ul style="list-style-type: none"> <li>Organizational capability assessments and improvement recommendations are under review by executive management</li> <li>The PMO has and will continue to identify critical deficiencies and implement mitigation strategies to ensure delivery</li> </ul>

### **ERCOT will measure readiness by the following categories:**

- ***System Readiness*** – an evaluation of a particular system needed to support identified market activities
  - ***Process Readiness*** – an evaluation of the Processes and Procedures necessary to support identified market activities
  - ***People Readiness*** – an evaluation of ERCOT and Market Participant capabilities to support identified market activities
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- ERCOT reviewed the readiness criteria at the 6/23/10 NATF, 7/1/10 TAC and 7/8/10 NATF.
  - The 7/8/10 NATF voted to recommend to TAC that the Network Operations Model readiness criteria has been met.
  - ERCOT is requesting a vote from the 7/20/10 TAC and the 7/20/10 Board on the Market Readiness Criteria per Section 21.12.3, Notice to Market Participants of Effective Date for Nodal Protocol Provisions and Retirement of Zonal Protocol Provision.

### ***21.12.3 Notice to Market Participants of Effective Date for Nodal Protocol Provisions and Retirement of Zonal Protocol Provision***

No part of the nodal market design may start operation until all the Market Readiness Criteria for that part of the nodal market design have been met. Certification that all Market Readiness Criteria have been met must be made at least by each of the following: the Technical Advisory Committee (TAC), ERCOT and the ERCOT Board. Upon such certification, ERCOT shall issue two Notices alerting Market Participants to the effective date of Nodal Protocol sections and the retirement of Zonal Protocol sections, as applicable. ERCOT shall issue the first Notice no less than thirty (30) days prior to the effective date or retirement date, as applicable, and the second Notice no less than ten (10) days prior to the effective date or retirement date, as applicable. The Notice shall include:

- (1) The Nodal Protocol Sections to become effective; and
- (2) The Zonal Protocol Sections to be retired, if any

# Nodal Program Cutover

The table below outlines key dates and activities requiring Market Participant support

Cutover Timeline Key Dates (Aug – Oct)		
Network Operations Modeling	08/01	Begin transition plan for Network Modeling timelines
	09/01	Deadline to submit Model changes for Month of December
	10/02	Network Model built for PCRR Allocation
	10/13	Network Model built for CRR Auction
	10/15	Model complete and available for Market Participant testing
Outage Scheduling	08/13	Begin transition plan for 168 hour test and outages for December and beyond
	10/02	December Outages pulled for initial CRR Network Model
	10/13	December Outages pulled for CRR Network Model
Congestion Revenue Rights	08/13	Last day to Register for CRR Monthly Auction
	10/18	PCRR Nominations close for December Allocation
	10/20	Allocation results published / Network Model Posted
	10/21	Initial Credit Limit for CRR Auction will be available for posting

# Network Operations Modeling – Go Live

System Readiness	Planned Completion	Status
SEM Go-Live	8/31/09	Complete
TSP Model Validation (Metric MP14C)	4/30/10	Complete
Model Change Request Tools Support Market Updates	Ongoing	Green
Regular Model Loads into Market Trials Systems	Ongoing	Green
8 Hour LFC Test Executed w/ Network Model from NMMS	6/17/10	Complete
Process Readiness		
Network Operations Change Request Timeline Transition Plan established	6/03/10	Complete
Network Modeling Procedures Ready	8/01/10	Ongoing
Market Rules – Protocol Transition Plan for September	7/23/10	In Progress

# Network Operations Modeling – Go Live

People Readiness	Planned Completion	Status
ERCOT Staff Support of Market Trials	Ongoing	Green
ERCOT Staff Trained on System and Processes	6/22/10	Green
Market Participant Training Delivered	7/29/09	Green
Readiness Review and Approval		
NATF Review	6/23/10 7/08/10	Complete
ERCOT Management Approval	6/30/10	Complete
TAC Approval	7/20/10	
BOD Approval	7/20/10	
30 Day Market Notice	7/30/10	
10 Day Market Notice	8/20/10	

## For Board of Directors Consideration - NMMS

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### **Motion for Board of Directors consideration:**

- *The ERCOT Board of Directors certifies that the Network Operations Modeling Market Readiness Criteria have been met*

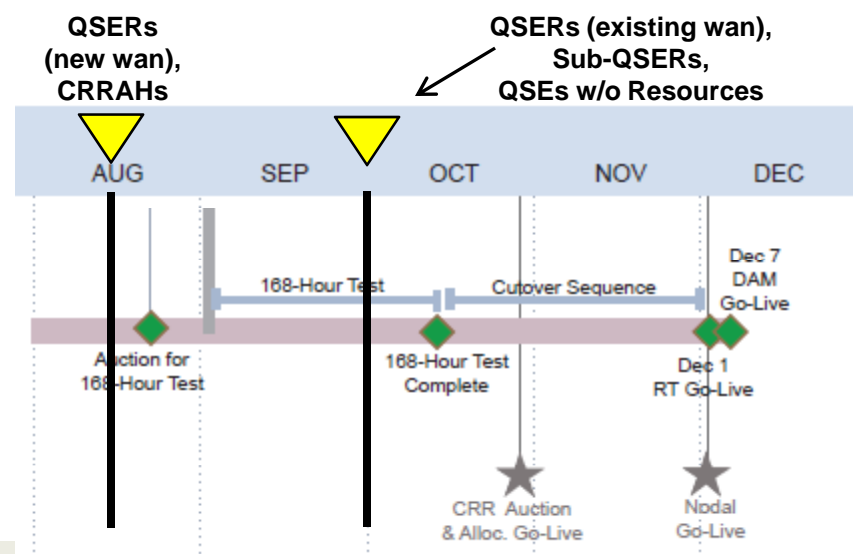


# Reminder – Nodal Registration Cutoff – QSEs and CRRAHs

- **Scope**
  - What is the cutoff date for QSEs and CRRAHs to begin registration for Nodal Go-Live (based on ERCOT resource availability)?
- **Registration must begin by these dates to be qualified for Nodal Go-Live**
  - **August 13<sup>th</sup>, 2010**
    - QSEs with Resources with a new WAN connection \*
    - CRRAHs (to be qualified for the 10/13 PCRR nomination and for the 11/11 December 2010 CRR Auction) \* ~
  - **October 1<sup>st</sup>, 2010**
    - QSE with Resources using a Nodal qualified service provider \*
    - QSEs without Resources \*
    - Sub-QSEs using a Nodal qualified parent QSE \*
- **Mechanics**
  - Qualification will follow the Nodal production qualification process and all testing will be done in the MOTE environment
  - MPs that want to begin registration past these deadlines will be examined on a case-by-case basis
  - Nodal Metric MP22 will measure progress of new entrants

\* QSE Application or CRRAH Application must be submitted, which includes Credit Application

~ Doesn't include NOIE Allocation Eligibility Form, which must be submitted by 6/30 for CRRAHs eligible for PCRRs



## Next 60-days of Classes/Workshops

Course	Start Date	Location
Market Settlements 301	July 6	ERCOT Met Center (Austin)
ERCOT 101 for Wind Generation	July 12	Norris Conference Center (Houston)
Generation 201	July 13	Norris Conference Center (Houston)
Transmission 101	July 13	CenterPoint Energy (Houston)
Outage Scheduler	July 15	CenterPoint Energy (Houston)
Load Serving Entity 201	July 20	Optim Energy (Dallas)
Congestion Revenue Rights	July 21	Optim Energy (Dallas)
ERCOT Nodal 101	July 26	First Choice (Dallas)

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

## Next 60-days of Classes/Workshops - continued

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Course	Start Date	Location
Generation 101	July 27	Calpine (Houston)
Transmission 101	August 3	ERCOT Met Center (Austin)
Basic Training Program	August 10	Calpine (Houston)
ERCOT Nodal 101	August 10	ERCOT Met Center (Austin)
Market Settlements 301	August 17	City of Garland Fire Administration Building (Dallas)

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

# RED/AMBER Metrics Summary

## Market Participant Metrics

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
<b>Market Participant Metrics</b>									
MP15(B) CRR Connectivity Qualification	Red	CRRAHs	Even weighting	94.2%	0.0%	0.0%	5.8%	Successful submission CRR transactions	66/74 CRRAHs qualified. Greater than 5% RED.
MP16 DAM Participation	Amber	QSEs	Even Weighting	78.6%	6.6%	12.6%	1.1%	Participation in 50% of the Day-Ahead Market runs	143/182 QSEs w/o Resources

## ERCOT Metrics

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
<b>ERCOT Metrics</b>									
EMO9(A) State Estimator Convergence	Amber	ERCOT	N/A	N/A	95.44	N/A	N/A	State Estimator converges 97% of runs during a monthly test period.	95.44% Convergence for State Estimator for the month of May.
EMO9(B) RTCA Modeling Differences	Red	ERCOT	N/A	N/A	N/A	84.33%	N/A	95% of load tap setting values matched between Zonal/Nodal	84.33% Match for transformer tap settings. 1430 transformers in Nodal.



# Monthly Financial Review

Mike Petterson  
Controller  
20 July 2010

# Monthly Financial Review

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**Financials to be provided before Board of Directors meeting.**

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# Questions?

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# Appendix



# Nodal Program Risks & Issues: Definitions

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## 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

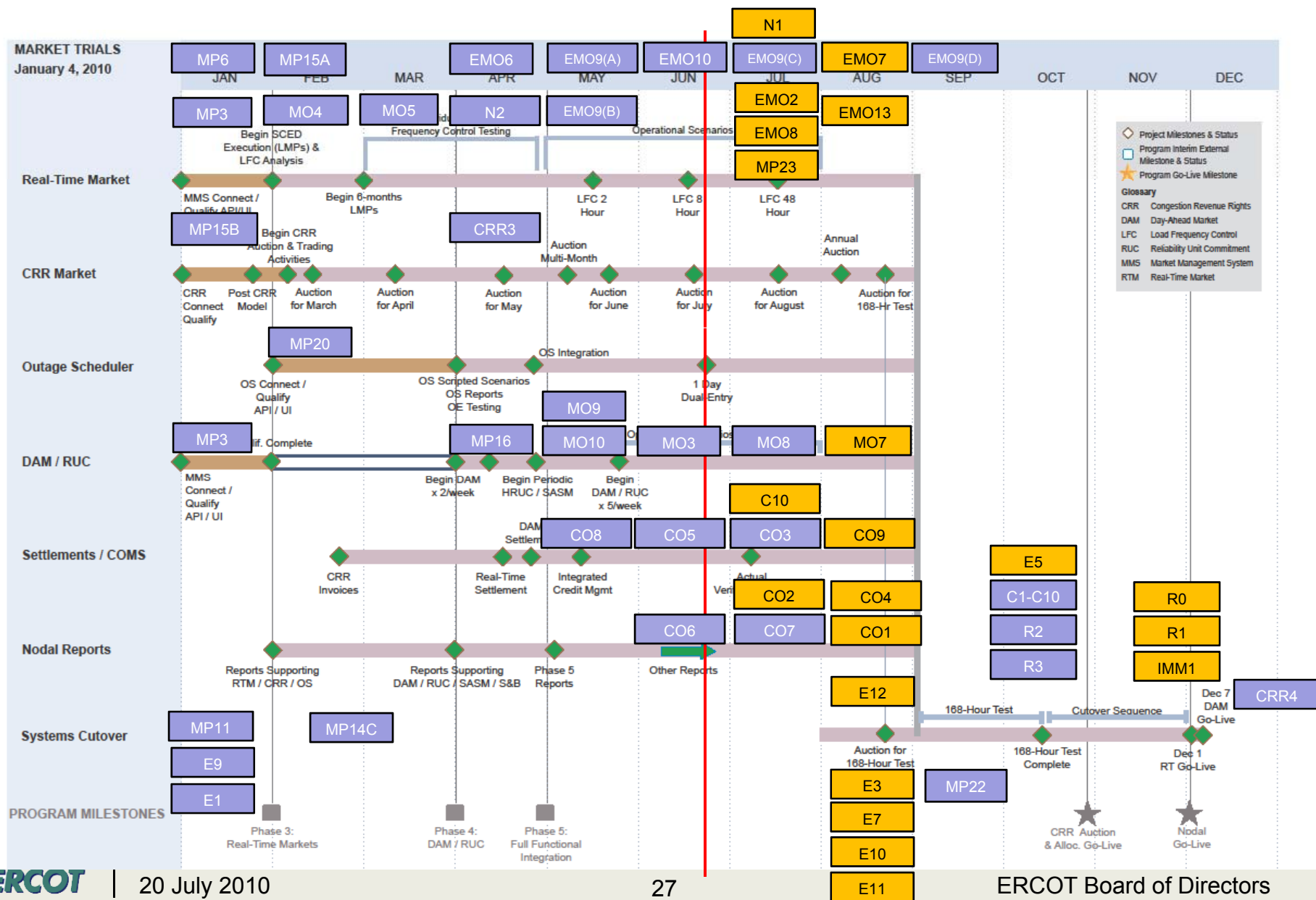
Severity	Definition
Severity 1: Data loss/critical error	Defects that render unavailable the critical functions of the system under test. These include errors such as system errors, application failures, loss of data, incorrect calculations, inability to transfer data, failure to access database, and 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

# Metrics Roadmap

**PURPLE** Timing and Design Confirmed  
**ORANGE** Timing subject to change, design in progress

New Metric



# CRR Metrics

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
<b>Market Participant Metrics</b>									
MP15(B) CRR Connectivity Qualification	Red	CRRAHs	Even weighting	90.7%	0.0%	9.3%	0.0%	Successful submission CRR transactions	68/75 CRRAHs qualified. Greater than 5% RED.
CRR3 Operation of CRR Auctions and Allocations	Green	CRRAHs	Even weighting	87.8%	0%	12.2%	0.0%	Participation in at least 1 of the last 2 auctions or allocations. > 80% total participating	58/66 CRRAHs with adequate participation in June or July auction or allocation
<b>ERCOT Metrics</b>									
CRR3 Operation of CRR Auctions and Allocations	Green	ERCOT	N/A	N/A	N/A	N/A	N/A	Auction results distributed to participants per schedule in CRR Handbook	6/21 2010 June Monthly Auction results posted to market.
	TBD	ERCOT	N/A	100%	0%	0%	0%	Allocated Revenue Rights in statistical sample = 100% accurate	Source – Sink prices = CRR Clearing prices for obligations for BOY auction. ERCOT working on similar validation process for options.
CO8 Verify CRR Auction Invoices	Green	ERCOT	N/A	100%	0%	0%	0%	CRR Auction Result for MP(n) – CRR Auction Invoices for MP(n) = 0\$	S&B validated invoices reflected awards for each CRRAH in the March, April, May, June, and July auctions, .
	Green	ERCOT	N/A	100%	0%	0%	0%	System Generated CRR Auction Invoices not posted = 0	6/22 July CRR auction invoices submitted to all 48 CRRAHs who participated

# Real-Time Metrics

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
<b>Market Participant Metrics</b>									
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	79/81 QSERS qualified
	Green	QSEs	Even weighting	98.9%	1.1%	0.0%	0.0%		178/182 QSEs qualified.
EMO6 Individual LFC Testing	Green	QSERS	Generation Ratio Share	96.9%	0%	0%	3.1%	80% of system-wide generation has completed individual QSE tests for LFC	70/73 QSERS completed their individual LFC test or provided attestation
MP15-A Real-time Market Participation	Green	QSERS	Generation Ratio Share	100.0%	0.0%	0.0%	0.0%	Weekly average of daily SCED submissions	79/79 QSERS above 95% weekly average for SCED submissions.
<b>ERCOT Metrics</b>									
MO3 Verify SASM	Green	ERCOT	N/A	100%	N/A	N/A	N/A	Multiple SASMs are successfully executed during Market Trials and the 168 hour test.	SASMs successfully run on 4/28, 4/30, 5/4, 5/6, 5/7, 5/12, 5/14, 6/9, and 6/10. No issues reported.
MO4 Verify SCED Execution Quality	Green	ERCOT	N/A	100%	0%	0%	0%	All successful SCED executions passed the post-execution price validations.	6/1 - 6/14 period - 4,035 Price Validation runs with no rule violations
MO5 Generate 6 Months of LMPs	Green	ERCOT	N/A	98.1%.	0%	1.9%	0%	95% of SCED executions completed with LMPs posted on MIS.	6/1 - 6/14 period, 3,971 out of 4,031 SCED runs with LMPs posted.
CO5 Verify RTM Settlement Statements/CO6 Verify RTM Settlement Invoices	Green	ERCOT	N/A	100%	0%	0%	0%	System Generated RT Statement Dollars-Independently Generated RT Calculation Dollars =\$0	6660 RTM Statements; 1609 RTM Invoices All validated \$\$ = system generated (with some rounding differences)
	Green	ERCOT	N/A	100%	0%	0%	0%	System Generated RT Statements/Invoices not posted = 0	6660 RTM Statements; 1609 RTM Invoices All posted on time

# Day-Ahead Market Metrics

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
<b>Market Participant Metrics</b>									
MP16 DAM Participation	Green	QSERS	Generation Ratio Share	99.0%	1.0%	0.0%	0.0%	Participation in 50% of the Day-Ahead Market runs	78/79 QSEs with Resources
	Amber	QSEs	Even Weighting	78.6%	6.6%	12.6%	1.1%		143/182 QSEs w/o Resources
CO10 Credit Calculations	6/30/2010	QSERS, QSEs	Gen Ratio Share, Even Weighting	N/A	N/A	N/A	N/A	<= 25% of MPs credit limits inconsistent with protocols	To be determined
<b>ERCOT Metrics</b>									
MO8 Verify DAM Execution Quality	Report in Progress	ERCOT	N/A	N/A	N/A	N/A		DAM executions pass the post-execution price validations	Report in progress
MO9 Generate DAM LMPs	Green	ERCOT	N/A	N/A	N/A	N/A	N/A	95 percent DAM execution as evidenced by DAM LMP postings	6/1 – 6/14 – 7/7 DAM runs execute(doesn't measure quality)
MO10 DRUC Execution	Green	ERCOT	N/A	N/A	N/A	N/A	N/A	95 percent DRUC execution	6/1 – 6/14 - 7 out of 7 DRUC runs executed (doesn't measure quality)
CO3 Verify DAM Settlement Statements/CO7 Verify DAM Invoices	Green	ERCOT	N/A	100%	0%	0%	0%	System Generated RT Statement Dollars-Independently Generated RT Calculation Dollars =\$0	4715 DAM Statements and Invoices All validated \$\$ = system generated (with some rounding differences)
	Green	ERCOT	N/A	100%	0%	0%	0%	System Generated RT Statements/Invoices not posted = 0	4715 DAM Statements and Invoices All posted on time
CO10 Credit Calculations	6/30/2010	ERCOT	N/A	N/A	N/A	N/A	N/A	ERCOT performs credit calcs for a stat. sample of MPs	To be determined

1. MP16 – Metric is based on a 2 week rolling average (6/7 – 6/18 – 9 runs).
2. MP16 – 97% Load participating.

# Network Modeling Metrics

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
<b>Market Participant Metrics</b>									
MP14-C TSP Model Validation	Green	TSPs	Ownership Ratio Share	99.9%	.1%	0.0%	0.0%	Network Model data validated by TSP	24/28 TSPs have submitted model validation e-mail to ERCOT.
MP6 Telemetry Compliance with Nodal Protocols 3.10.7.5	Green	QSERs	Generation Ratio Share	100%	0.0%	0.0%	0.0%	Expected State Estimator telemetry submitted.	78/78 complete. 3502 total SE points provided
	Green	QSERs	Generation Ratio Share	100%	0.0%	0.0%	0.0%	Expected SCED telemetry submitted.	78/78 complete. 7629 SCED points provided
	Green	TSPs	Ownership Ratio Share	99.3%	0.0%	0.0%	.7%	Expected TSP telemetry per ICCP Handbook submitted	14/17 TSPs above 98% threshold for GREEN. 143 points outstanding
N2 Telemetry ICCP System Failover	Green/White only	QSERs	Generation Ratio Share	68.9%	0%	0%	31.1%	ICCP Failover test completed successfully prior to the 8-hour LFC test.	37/78 QSERs completed ICCP telemetry failover test.
MP18 Mapping of Resources and Loads in Private Use Networks	6/30/2010	QSERs	Generation Ratio Share	N/A	N/A	N/A	N/A	# of QSE(n) PUN Points Provided / # of QSE(n) PUN Points Expected	306 points across 7 QSEs with Resources. 15 points still assigned to TSP.
MP21 WGRs ICCP Meteorological Telemetry	6/30/2010	REs (only WGRs)	Registered MW Capacity Ratio Share	N/A	N/A	N/A	N/A	WGRs must meet reasonability tests for MET ICCP	To be determined
MP23 Telemetry Quality (MP to ICCP server)	6/30/2010	TSPs	Ownership Ratio Share	N/A	N/A	N/A	N/A	# of TSP(n) Suspect/Bad points provided / # of TSP(n) points total	1077 Suspect/Bad points (98.3% good quality).
	6/30/2010	QSERs	Generation Ratio Share	N/A	N/A	N/A	N/A	# of QSER(n) Suspect/Bad points provides / # of QSER(n) points total	277 Suspect/Bad points (98% good quality)

1. MP6 does not include 405 QSE CB and DSC points from TSP outreach. ERCOT is determining whether these rollback into the QSER MP6 measurement.

# Network Model Metrics

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
<b>ERCOT Metrics</b>									
EMO9(A) State Estimator Standards Performance	Amber	ERCOT	N/A	N/A	N/A	N/A	N/A	State Estimator converges 97% during monthly test period	95.44% Convergence for State Estimator for the month of May.
EMO9(B) RTCA Modeling Differences	Green	ERCOT	N/A	96.8%	N/A	N/A	N/A	95% of impedance values matched between Zonal/Nodal	97.9% match for impedances for lines and transformers. 6718 lines and transformers in Nodal.
	Green	ERCOT	N/A	96.8%	N/A	N/A	N/A	95% of dynamic line ratings matched between Zonal/Nodal	97.5% match for ratings for lines. 5288 lines in Nodal.
	Red	ERCOT	N/A	N/A	N/A	84.33	N/A	95% of load tap setting values matched between Zonal/Nodal	84.3% Match for transformer tap settings. 1430 xfrms in Nodal.
EMO10 Anomalous / Auto-Disabled Telemetered Points	Green	ERCOT	N/A	1.91%	N/A	N/A	N/A	The % of Anomalous and Auto-Disabled Measurements < 2% of Total Measurements	April Nodal 2.58% May Nodal 1.92% June Nodal 1.91%
EMO9(C) RTCA CSC Comparison	7/14/2010	ERCOT	N/A	N/A	N/A	N/A	N/A	CSC Pre-contingency SE Flows within 5% (Hourly snapshot)	Measurement establishes baseline flows on Commercial lines to indicate the significance of Psuedo modeling and multi-section lines on the SE flows.
EMO9(D) Validate Zonal and Nodal Security Analysis Results	9/8/2010	ERCOT	N/A	N/A	N/A	N/A	N/A	90% of active constraints in Zonal RTCA are also detected in Nodal RTCA	To be determined



# Other Readiness Metrics

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
<b>Market Participant Metrics</b>									
MP20 Outage Scheduler Connectivity Qualification	Green	QSERS	Generation Ratio Share	98.9%	0.0%	0.0%	1.1%	Successful submission of OS transactions	78/79 QSERS qualified.
	Green	TSPs	Ownership Ratio Share	99.7%	0%	0%	.3%		20/23 TSPs qualified.
MP11 Resource Registration	Green	REs	Registered MW Capacity Ratio Share	99.6%	0.0%	.4%	0.0%	Decision Making Authority form submitted, and GENMAP validated	154/157 Resources completed.
CO2 Verify Dispute Process	7/14/2010	QSERS, QSEs	Generation Ratio Share, Even Weighting	N/A	N/A	N/A	N/A	>=1 dispute submit per MP. # of unprocessed disputes by 168 = 0	To be determined
<b>ERCOT Metrics</b>									
E1 ERCOT Staff Completes Training	Green	ERCOT	N/A	100%	N/A	N/A	N/A	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	Green	ERCOT	N/A	100%	N/A	N/A	N/A	Procedures developed 1 month prior an exercised in the appropriate Market Trials Phase	All MT4 and MT5 are developed and the MT4 procedures exercised as scheduled in MT4.
EMO3 Verify Outage Evaluation System Functionality	Green	ERCOT	N/A	N/A	N/A	N/A	N/A	A test of the Outage Management Process is completed	OS to OE integration tested throughout Market Trials and reviewed at 6/23 NATF

# Participant Readiness Touch Points

2010				
	July	August	September	October
<b>Meetings</b>	• NATF 7/8	• NATF 8/19	• NATF 9/14	• NATF 10/5
<b>Training</b>	<ul style="list-style-type: none"> <li>• Nodal 101</li> <li>• Transmission 101</li> <li>• Generation 101, 201</li> <li>• Basic Training Program</li> <li>• NOIE QSE Operations</li> <li>• Settlements 301</li> </ul>	<ul style="list-style-type: none"> <li>• Nodal 101</li> <li>• Transmission 101</li> <li>• Generation 101, 201</li> <li>• Basic Training Program</li> <li>• NOIE QSE Operations</li> <li>• Settlements 301</li> </ul>	<ul style="list-style-type: none"> <li>• Nodal 101</li> <li>• Transmission 101</li> <li>• Generation 101, 201</li> <li>• NOIE QSE Operations</li> <li>• Settlements 301</li> <li>• MMS &amp; MIS GUI (Online only)</li> </ul>	<ul style="list-style-type: none"> <li>• TBD</li> </ul>
<b>Outreach</b>	<ul style="list-style-type: none"> <li>• <i>MRS #5 168 Hour Test (Tentative)</i></li> <li>• Dispute &amp; Reports Metrics</li> <li>• Standby site visits</li> </ul>	<ul style="list-style-type: none"> <li>• Standby site visits</li> </ul>	<ul style="list-style-type: none"> <li>• Standby site visits</li> </ul>	<ul style="list-style-type: none"> <li>• TBD</li> </ul>
<b>Market trials</b>	<ul style="list-style-type: none"> <li>• Weekly Trials calls</li> <li>• 48 hr system-wide LFC test</li> <li>• Verifiable costs loaded into N-Prod</li> </ul>	<ul style="list-style-type: none"> <li>• Weekly Trials calls</li> <li>• Prepare for 168 hr test</li> </ul>	<ul style="list-style-type: none"> <li>• Weekly Trials calls</li> <li>• Execute 168 hr test</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation for Nodal Go-Live</li> </ul>