



Nodal Program Update

Mike Cleary

Chief Operating Officer

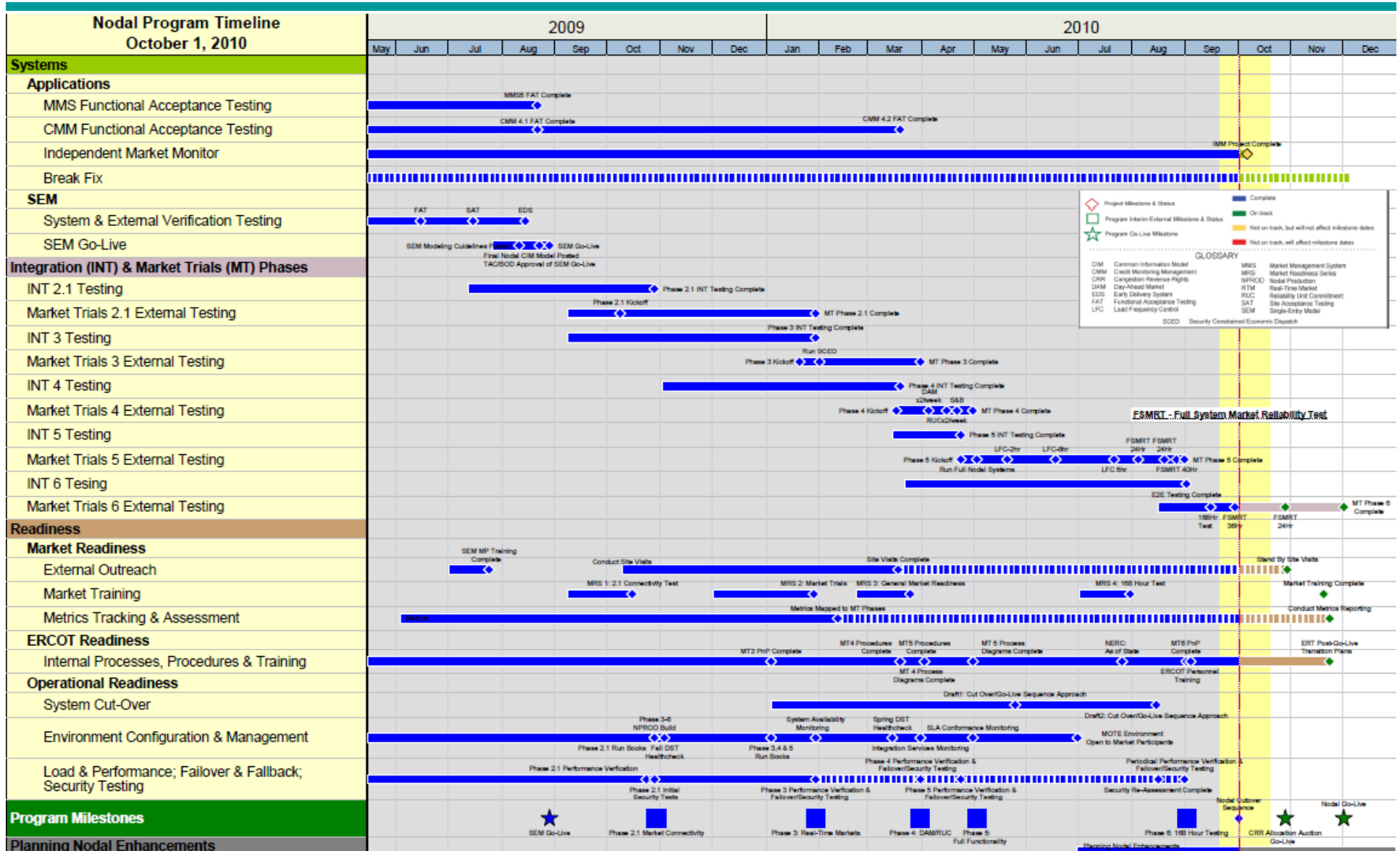
ERCOT Board of Directors

19 October 2010

Today's Agenda

- **Program Status**
- **Market Trials Overview**
- **Full Nodal Operations Go-Live**
- **Financials**
- **Appendix**

Integrated Nodal Timeline – Go-Live December 1, 2010



42 Days to Go-Live

Upcoming Milestones:

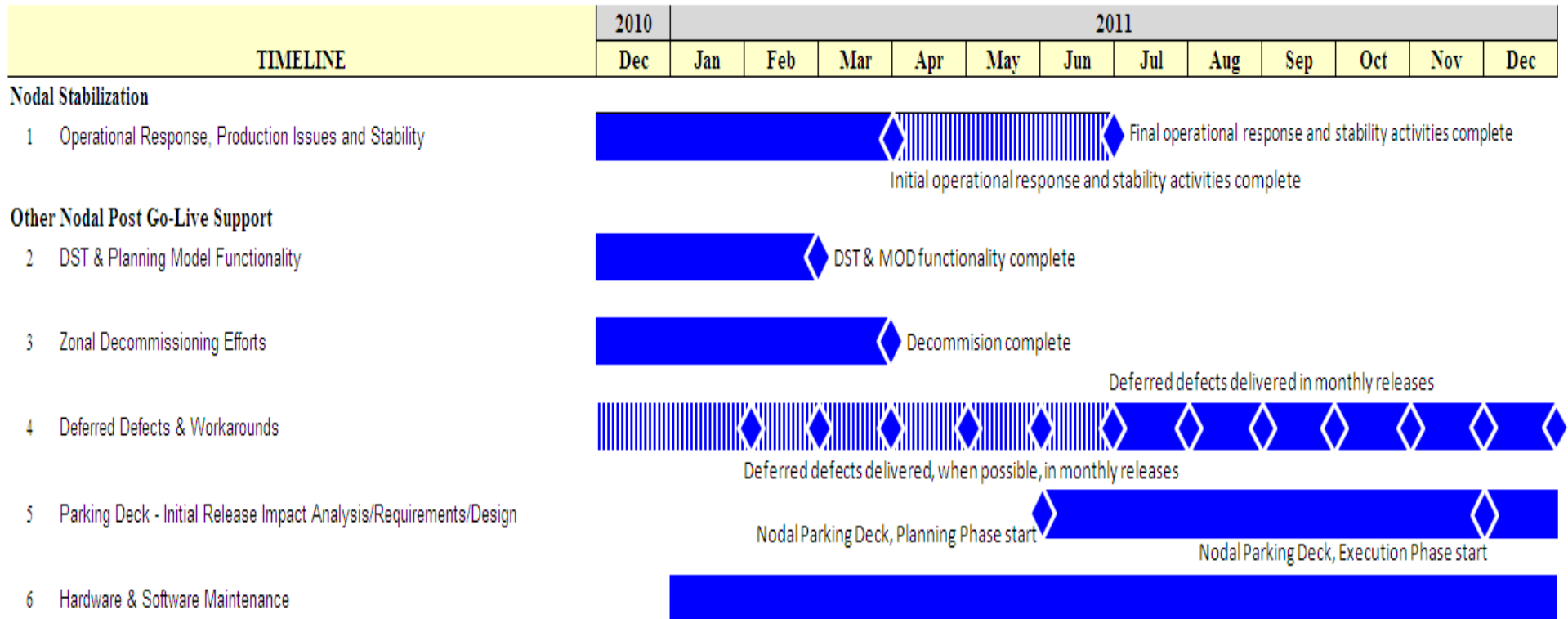
• Market Trials & Load Frequency Control(LFC)Tests:

- October 18, 2010 – October 30, 2010: ERCOT will be performing the following Market Facing Tests:
 - Day Ahead Market runs
 - DRUC and HRUC runs
 - SCED will publish LMPs and base points every five minutes during this period
- October 27, 2010 – October 28, 2010 - 24Hr LFC Test is scheduled
- November 13, 2010 – November 15, 2010 Go-Live December Monthly CRR Auction
- November 15, 2010 – November 29, 2010
 - Non-Binding: Day Ahead Market, HRUC and DRUC per protocol timelines
 - SCED will continue to publish base points and LMPs
- November 28, 2010 – November 30, 2010 LFC Test
 - Generation and Frequency Control cutover to Nodal systems

• System Cut-Over / Go-Live:

- November 30th – Execute DAM for December 1 (the first Operating Day to be binding with Nodal settlement)
 - December 1st – First Operating Day
- Planning has begun for nodal stabilization, parking deck prioritization, deferred defects, and release management scheduling for post Go-Live

Preliminary Nodal Stabilization Timeline



• ERCOT is in the early stages of finalizing the 2010/2011 nodal stabilization and post Go-Live support time-line



Market Trials Overview

Kenneth Ragsdale
Principal Market Operations

Market Trials Overview

Market Trials has been running for 37 weeks

Achievements:

- 100% of the QSEs with Resources submitted Three Part Offers (TPO) and Current Operating Plans (COPS)
- 6 Months of SCED execution and LMP generation
 - Approximately 200 hours of Load Frequency Testing
 - CPS1 score averaged 142 over the last 4 LFC tests
- DAM / RUC / WRUC
 - 110 DAM runs
 - The Last 4 LFC tests had an average State Estimator Convergence score of 99% (97% = is standard)
 - 100% of all QSEs with resources and 96% of all QSEs without resources participated in the voluntary DAM market
 - 7 of the 186 QSEs without resources opted against participating in the DAM market
- ERCOT Sponsored Training
 - 120,000 man-hours of training on nodal market rules have been completed
 - Approximately 6,500 individuals attended one or more training classes hosted by ERCOT over the past 4 years
 - 4,500 individuals affiliated with a registered Market Participant attended one or more training sessions
 - Approximately 900 ERCOT/TRE employees and 200 contractors attended one or more nodal market training course
 - Another 900 individuals not affiliated with MPs attended training
 - 300 registered Market Participants attended one or more training sessions
 - 115 Qualified Scheduling Entities (QSEs)
 - 83 Resource Entities
 - 87 Load Serving Entities (LSEs)
 - » 75 REPs and 12 NOIEs
 - 35 Transmission and Distribution Service Providers (TDSPs)
 - Over 20,000 hours of total ERCOT personnel training were completed over the past 4 years

Cut-Over Monthly Outlook – October



Functional Area

- ✓ Network Model
- ✓ Outage Scheduler
- ✓ Congestion Revenue Rights
- ✓ Credit
- ✓ MIS

MP Activities / Impacts

- CRRAH able to retrieve ACLs from CRR system each business day.
- MPs can post additional collateral until 11/08/2010 for Dec 2010 CRR Auction
- Dec 2010 CRR Model available on MIS
- Dec 2010 Monthly Auction Notice available on MIS

Key Cut-Over Activities for October 2010

- **(10/14-10/19)** CRR: ERCOT begins accepting PCRR Nominations for December Monthly Auction (updated)
- **(10/15-11/15)** Model: Network Operations Model posted to TSP Citrix location and TSPs begin validation process
- **(10/26)** CRR: ERCOT shall allocate PCRRs to NOIEs for the 2010 December Monthly Auction and publish to MIS
- **(10/26)** CRR: ERCOT shall post CRR Network Model for the 2010 December Monthly Auction to MIS
- **(10/28-11/08)** Credit: ERCOT posts ACLs daily for CRR December monthly auction to CRR
- **(10/29)** CRR: ERCOT to post December 2010 Monthly Auction Notice to MIS

Cut-Over Monthly Outlook – November



- Functional Area**
- ✓ Settlements
 - ✓ Credit
 - ✓ Congestion Revenue Rights
 - ✓ Disputes
 - ✓ Market Management

- MP Activities / Impacts**
- Available Credit Limit is locked for CRRAHs
 - CRRAHs can submit disputes against CRR Auction Invoice via the API or MIS
 - CRRAHs can receive postings on MIS
 - QSEs can begin DAM Bid submission (15 submission items)
 - Market checkpoint calls begin to facilitate issues and readiness
 - Daily Market Conference Bridge starts 11/23

- Key Cut-Over Activities for November 2010**
- (11/8/2010 12:00pm) Credit: Collateral Posting Deadline (Dec Auction)
 - (11/8/2010 5:00pm) CRR: Credit Lock for Dec CRR Auction
 - (11/9/2010 – 11/11/2010) CRR: December CRR Auction Bid Open/Close
 - (11/12/2010) CRR: December CRR Auction Executes
 - (11/15/2010) CRR: December CRR Auction Results published
 - (11/16/2010) Settlements: December CRR Auction Invoice published
 - (11/16/2010) Disputes: Dispute submitted to ERCOT for CRR Invoice
 - (11/19/2010) Credit: Payment Due for December CRR Auction Invoices
 - (11/22/2010) Settlements: Payments to CRRAH (Dec Auction)
 - (11/23/2010) Credit: ERCOT to Release ACL (TPE and ACL Reports Available on MIS)
 - (11/23/2010) Market Submission Opens (Remaining Protocol Go-Live)
 - (11/24/2010) Model: Network Model Load
 - (11/29/2010) Credit: ERCOT to Publish ACL for the initial Day-Ahead Market execution by ERCOT

Cut-Over Monthly Outlook – December



Functional Area

- ✓ Network Model
- ✓ Settlements
- ✓ Congestion Revenue Rights
- ✓ Credit
- ✓ Market Management System

MP Activities / Impacts

- Daily Market Calls continue for issue facilitation
- Settlement Calendar Extracts (See Email for full list of postings)
- MPs receive 1st Nodal Invoice for DAM and RTM via MIS
- MPs can submit Disputes via MIS or API

Key Cut-Over Activities for December 2010

- **(12/01/10)** Nodal Program: Nodal Go-Live (Operating Day 1)
- **(12/3/2010)** Settlements: Nodal Day Ahead Market Statement & Invoice Available
- **(12/3/2010)** Disputes: Disputes submitted to ERCOT for DAM Invoice
- **(12/8/2010)** Credit: Nodal Payment Due for OD12/01/2010
- **(12/9/2010)** Credit: Nodal Payout for OD12/01/2010
- **(12/15/2010)** Model: Network Model Load
- **(12/13/2010)** Settlements: Nodal Real-Time Statement Available
- **(12/16/2010)** Settlements: Nodal Real-Time Invoice Available
- **(12/27/2010)** Credit: Nodal Payment Due for Real-Time Invoice 12/16/10
- **(12/28/2010)** Credit: Nodal Payout for Real-Time Invoice 12/16/10

Day Ahead Market

Issues	System and Data Improvements	Activities for Go-Live
<ul style="list-style-type: none"> Load Distribution Factors (LDFs) produced by the automated process delivered unacceptable results during market trials. 	<ul style="list-style-type: none"> Before the 168 hr test implemented methodology to use static LDF values During 168 hr test began using updated software that made a change so that DAM would not constrain elements serving radial load pockets. LDF methodology presented to NATF on 9/22 and 9/30 	<ul style="list-style-type: none"> LDF methodology approved by TAC in October Generating LDFs for December Continue to evaluate LDFs
<ul style="list-style-type: none"> Phase Shifter Transformers (PSTs) settings causing overloads in the DAM 	<ul style="list-style-type: none"> During 168 hr test started to identify elements to not secure and 'monitor only' due to the PSTs. Currently about 22 elements have been identified as monitor only. 	<ul style="list-style-type: none"> ERCOT is developing procedures to analyze PSTs to determine the best setting to use for minimizing overloads. 'Monitor Only' elements list will continue to be managed.
<ul style="list-style-type: none"> Consideration of System Protection Schemes (SPSs) in DAM 	<ul style="list-style-type: none"> Code migrated before 168 hr test to correct mishandling of some SPSs. 	<ul style="list-style-type: none"> Modeling Corrections and Quality Assurance will continue
<ul style="list-style-type: none"> Questionable contingencies causing overloads in DAM 	<ul style="list-style-type: none"> Automated contingency generation tool produced some invalid contingencies due to modeling issues. Teams working to review the contingencies with auto transformers. CIM Importer issue with series devices to be fixed in MMS5P10 	<ul style="list-style-type: none"> NOMCRs submitted to be implemented in the 10/15 database load
<ul style="list-style-type: none"> Not correctly modeling Generic Constraints and PCAPS not being considered in DAM 	<ul style="list-style-type: none"> Process is in place to determine and send to DAM operator the generic constraints and PCAPS predicted to be used in RT. 	<ul style="list-style-type: none"> Continue to refine the process.
<ul style="list-style-type: none"> Modeling Issues : <ul style="list-style-type: none"> Ratings Impedances, Default load values 	<ul style="list-style-type: none"> Work has been done to compare various sources of the data and to question differences with the TSPs. 	<ul style="list-style-type: none"> Modeling Corrections and Quality Assurance will continue
<ul style="list-style-type: none"> DAM performance issues related to PTP Option offers 	<ul style="list-style-type: none"> Executed non-binding survey and performed some testing to better identify solutions 	<ul style="list-style-type: none"> Exercise process to filter the full contingency list. Accelerate upgrade of hardware project

RUC / HRUC

Issues	System and Data Improvements	Activities for Go-Live
<ul style="list-style-type: none"> Poor Quality COPs <ul style="list-style-type: none"> COPS data different from Resource Plans 	<ul style="list-style-type: none"> Noticeable improvement as we progressed through Market Trials. This issue will likely be less of an issue once Nodal settlements kicks in. Operators are calling QSEs every day before DRUC run and if needed before HRUC run to correct COP issues. 	<ul style="list-style-type: none"> Pick several days in the end of October in which it is requested that the QSEs should enter COPS that reflect how they plan to cover their obligations and operate their Resources.
<ul style="list-style-type: none"> Mis-interpretation by RUC of null Start-up and Minimum Energy Offers 	<ul style="list-style-type: none"> Defect has been submitted on mishandling of null Start-up and null Minimum Energy offers. Fix deployed to NPROD 	<ul style="list-style-type: none"> Run DRUC and RUC during the last few weeks in October including the LFC test
<ul style="list-style-type: none"> MMS doesn't optimize phase shifter tap position 	<ul style="list-style-type: none"> RUC set to also "monitor only" those elements associated with the PSTs and also the RUC operators procedures instructs them to use updated PST settings Procedures in place for Shift Engineers and operators to update the phase Shifter tap position as system conditions changes 	<ul style="list-style-type: none"> Run DRUC and RUC during the last few weeks in October including the LFC test
<ul style="list-style-type: none"> Slow execution times 	<ul style="list-style-type: none"> COP data reflecting ERCOT to be short is primary reason. Continue to evaluate parameter settings that can speed up process. Procedures in place for Shift Engineers and operators to proactively take manual action to resolve unsolvable constraints 	<ul style="list-style-type: none"> Will continue to monitor
<ul style="list-style-type: none"> RUC Operator Screens usability needs improvement 	<ul style="list-style-type: none"> Work in progress and this is not critical for Go-Live. 	<ul style="list-style-type: none"> Will continue to monitor
<ul style="list-style-type: none"> RUC Operators were unable to make manual changes 	<ul style="list-style-type: none"> Resolved during 168hr test by software fix 	<ul style="list-style-type: none"> Will continue to monitor

Real Time Market

Issues	System and Data Improvements	Activities for Go-Live
<ul style="list-style-type: none"> Offers not covering entire HSL of Resource 	<ul style="list-style-type: none"> Outreach has helped. NPRR 240 is at the BOD for approval. Seen improvement of on average of 2000MWs during the LFC test NPRR 240 approved 9/21 	<ul style="list-style-type: none"> Will continue to provide insight and education to MPs
<ul style="list-style-type: none"> Poor Telemetry 	<ul style="list-style-type: none"> Significant issue during 40 hr LFC test. Should be resolved by change implemented by MPs NPRR on Resource Limit Calculator (RLC) calculation in draft should help mitigate issue. 	<ul style="list-style-type: none"> Will continue to monitor.
<ul style="list-style-type: none"> Start-up and Shut down issues 	<ul style="list-style-type: none"> Business Practices written to provide guidance. For go-live use "ONTEST" as RST for both Start-ups and Shut-downs. NPRR in progress to specify to use "ONTEST". 	<ul style="list-style-type: none"> NPRR scheduled to go to PRS to clarify the usage of on-test RESOURCESTATUS
<ul style="list-style-type: none"> Inaccurate Ratings 	<ul style="list-style-type: none"> Early LFC tests revealed inaccurate rating in the model and in some cases being telemetered. ERCOT implemented review process for binding constraints showing up in Real time. (Review contingency and ratings) 	<ul style="list-style-type: none"> Will continue to monitor and correct as required
<ul style="list-style-type: none"> Questionable Contingencies 	<ul style="list-style-type: none"> Automated contingency generation tool produced some invalid contingencies due to modeling issues. NOMCRs were submitted to correct. Teams working to review the contingencies with auto transformers. Contacted TSPs requesting verification of transformer isolation. 	<ul style="list-style-type: none"> Request to TSPs to review specific contingencies (including auto transformers) has been made. NOMCRs submitted to be implemented in the 10/15 database load Continue to review the contingencies.
<ul style="list-style-type: none"> Energy Offer Curve being rejected in Real Time. (This is a timing issue.) 	<ul style="list-style-type: none"> Known defect being investigated Fix in 10/1 NPROD migration 	<ul style="list-style-type: none"> Verify fix in NPROD in October
<ul style="list-style-type: none"> Shift factor transfer issues 	<ul style="list-style-type: none"> Resolved with code updates No issues in the 168HR test None observed during Sept 29-30 Nodal System test 	<ul style="list-style-type: none"> Will continue to monitor

Network Modeling Management System

Issues	System and Data Improvements	Activities for Go-Live
<ul style="list-style-type: none"> Multiple System restarts <ul style="list-style-type: none"> The restarts caused MP input to be lost resulting in significant delays for MP's to input Model data. 	<ul style="list-style-type: none"> Stability issue was improved with a system patch that was applied on July 1st, 2010 The last restart occurred on 9/05/2010, but not related to the original issue 	<ul style="list-style-type: none"> Continue to monitor restart activity to ensure system meets goal of 1 or fewer unscheduled restarts per week. Currently the system is meeting or exceeding the goal
<ul style="list-style-type: none"> Market Participants and ERCOT working through several items involving modeling: <ul style="list-style-type: none"> Definition of interim updates Mechanics of the Approval to Energize process for new equipment Using Outage scheduler for energizing new equipment 	<ul style="list-style-type: none"> ERCOT released the Modeling Expectations white paper and worked with the TSPs in several subcommittees to reach a market agreement Approved by NATF 	<ul style="list-style-type: none"> Continue to work with all Market Participants as it related to the Network Modeling and the TSP issues list in the various subcommittees
<ul style="list-style-type: none"> System navigation was slow <ul style="list-style-type: none"> The response time for navigating through various layers of equipment increased. 	<ul style="list-style-type: none"> Navigation performance issues improved Aug 1st (43% reduction in response time) 	<ul style="list-style-type: none"> Continue to monitor system performance and assess MP helpdesk tickets to ensure performance continues to meet expectations.
<ul style="list-style-type: none"> Slow validation times for users <ul style="list-style-type: none"> The validations which normally take 10-40 minutes were taking 20-40% longer than expected 	<ul style="list-style-type: none"> Validation performance improved August 27th (40% reduction in validation time). 	<ul style="list-style-type: none"> Continue to monitor system performance and assess MP helpdesk tickets to ensure performance continues to meet expectations.

Credit

Issues	System and Data Improvements	Activities for Go-Live
<p><u>CMM (Core) Credit</u></p> <ul style="list-style-type: none"> • Large exposure and credit calls in the market <ul style="list-style-type: none"> • Some Market Participants experienced swings in collateral calls within the market 	<ul style="list-style-type: none"> • In conjunction with the 168-hour test, ERCOT reset Market Trials data that was causing the core credit calculation to be high <ul style="list-style-type: none"> • Provided CPs that were behaving “normally” during the 168-hour test an opportunity to see what their credit calculation would be after “go live” 	<ul style="list-style-type: none"> • Review 168-hour activity with CPs, individually and within MCWG and CWG, as needed.
<p><u>DAM Credit Constraint</u></p> <ul style="list-style-type: none"> • Available credit on non-business days <ul style="list-style-type: none"> • When DAM was run over the weekend in August, a significant amount of credit was consumed • Concern by market with transparency into the step by step consumption of credit within DAM 	<ul style="list-style-type: none"> • ERCOT credit staff to update ACLs on non-business days 	<ul style="list-style-type: none"> • ACLs will be updated on non-business days with a manual workaround until an after Go-Live automated solution is implemented • ERCOT staff is reviewing options to provide additional information
<p><u>CRR Credit Constraint</u></p> <ul style="list-style-type: none"> • Two parameters (the Multiplier (M) and Adder (A)) used in the auction to collateralize initial mark to market are under review 	<ul style="list-style-type: none"> • Anticipate a request to change at least the Multiplier at the Oct BOD meeting to correct for understanding of how the parameter is used in CRR system 	<ul style="list-style-type: none"> • Review at TAC on Oct 7th

Reports & Extracts

Issues	System and Data Improvements	Activities for Go-Live
<ul style="list-style-type: none"> QSE Ancillary Services Capacity Monitor report on the MIS <ul style="list-style-type: none"> Values reported for AS responsibilities different from the values observed in the source system 	<ul style="list-style-type: none"> The report is not active at this time, release data is not yet established <ul style="list-style-type: none"> The report needs to be validated by business in iTest before it can be released in Production. Still working to get an estimate for the nprod delivery date 	<ul style="list-style-type: none"> Complete validation
<ul style="list-style-type: none"> Two Credit reports are not functioning <ul style="list-style-type: none"> Future Credit Exposure for CRR PTP Options (FCEOPT) Detail Report Future Credit Exposure for CRR PTP Obligations (FCEOBL) Detail Report 	<ul style="list-style-type: none"> NPRR 241 allows ERCOT to not provide these reports and/or allows ERCOT to provide an extract instead. NPRR 241 approved by the board 9/21 	<ul style="list-style-type: none"> ERCOT is working on an extract of the data
<ul style="list-style-type: none"> Some reports have errors, such as: <ul style="list-style-type: none"> Forecasted Temp. Adj. Dynamic Ratings Duplicate Data: Each timestamp row of data is duplicated 	<ul style="list-style-type: none"> ERCOT has open defects on the report <ul style="list-style-type: none"> Duplicate data issue has been resolved Fix for duplicate data resulted in an additional defect for a broken sort order for this report This fix is still in development 	<ul style="list-style-type: none"> Complete and implement sort order fix Complete validation
<ul style="list-style-type: none"> Missing intervals for posting Real Time SPPs 	<ul style="list-style-type: none"> Development is currently working on a solution to update the retry logic and change the scheduling of the report to account for missed report postings when pricing data is available. 	<ul style="list-style-type: none"> Fix to be developed and implemented. Report to go back through itest and business validation
<ul style="list-style-type: none"> Dashboards are not yet on in NPROD 	<ul style="list-style-type: none"> The dashboard defects are currently in itest 	<ul style="list-style-type: none"> Complete validation

Settlement & Billing, Metering, and Data Aggregation

Issues	System and Data Improvements	Activities for Go-Live
<ul style="list-style-type: none"> • Generation Resource Base Point Deviation Charge defects and known issues: <ul style="list-style-type: none"> • TELHSLFLAG Bill Determinant (Defect): The exemption logic for units during startup is inaccurately exempting resources, based on the data being provided to settlements • TWTG Bill Determinant (Defect): the calculation for TWTG is not built per protocol; it is performing a simple average of the telemetered generation over the settlement interval, rather than doing a time-weighted average based on SCED intervals • IRR Base Point Deviation Settlement (Known Issue): While the system is built per protocol, the protocol formulas are inappropriately resulting in charges to IRR during non-curtailment intervals, and do not charge IRR during intervals of negative prices. • AABP Bill Determinant (Known Issue): While the system is built per protocol, when there are short SCED intervals the AABP formula, as defined, can calculate an overstated Adjusted Aggregated Base Point which may result in a charge to the QSE 	<ul style="list-style-type: none"> • Various protocol revisions provide improvements: <ul style="list-style-type: none"> • NPRR 273, Allow use of the ONTEST Resource Status to Indicate Resource Startup, Shutdown, and Test Operations. This NPRR allows settlements the ability to use the ONTEST status to give exemptions for Base Point during startup and shutdown. The ONTEST status can be leveraged as an efficient and effective resolution to the TELHSLFLAG defect and has been proposed by some in the market as a more desirable approach to this exemption. This solution only requires a minor system change (as opposed to the corrections required for the original TELSHSLFLAG logic/design.) The change is ready in a test environment and is pending board approval. • Draft Base Point Deviation NPRR at QMWG. While still under discussion, this NPRR focuses on an interim solution that can be achieved for go-live, and includes grey-box protocol changes that will support a better long-term solution. This draft NPRR addresses the known issues regarding protocol direction for IRR Base Point Deviation settlement and the AABP formula. • Given the tolerances that are built into the Base Point Deviation, the variance between the TWTG as currently calculated and per protocols should not be material enough to result in a Base Point Deviation charge. This issue will be contemplated during in QMWG discussions and work on the draft Base Point Deviation NPRR. QSEs have the opportunity to dispute the charge type if the TWTG defect actually causes the QSE to incur a charge. 	<ul style="list-style-type: none"> • Continue to provide market support for NPRR 273 discussions. Continue to work with the market to identify interim and long-term options for Base Point Deviation settlement protocol revisions. • If an NPRR is not implemented before Go-Live, use dispute process to resolve mis-calculations (if any).
<ul style="list-style-type: none"> • Quick Start resource participation and settlement (known issue): NPRR 272, Definition and Participation of Quick Start Generation, includes revisions that provide for SCED dispatch of quick start units. The changes merit additional changes within settlement to provide Base Point Deviation exemptions. 	<ul style="list-style-type: none"> • ERCOT staff has discussed this NPRR at both WMS and PRS. The proposed settlement change to provide an exemption for Base Point Deviation is minor and will be addressed pending board approval. 	<ul style="list-style-type: none"> • Continue to provide market support for NPRR 272 discussions.

Defect Summary (slide 1 of 3) [as of 10-01-10]

System	Defects to be resolved by Go-Live	Deferred Defects	Comments
MMS	Total : 17	Total: 63	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> 17 Defects to be resolved by 11/05 <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> 51 Deferred defects require a workaround, 48 workarounds in place and exercised. 3 in progress to complete by 10/05
EMS	Total: 19	Total: 347	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> 19 Defects to be resolved by 11/05 <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> 119 Deferred defects require a workaround, 116 workarounds in place and exercised. 3 in progress to complete by 10/05
COMS	Total: 2	Total: 62	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> 2 Defects to be resolved by 10/17 (test completion on 10/08, must migrate on Retail Outage Cycle) <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> 34 Deferred defects require a workaround, all 34 workarounds in place and exercised
CMM	Total: 1	Total: 51	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> 1 Defect to be resolved by 10/08 <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> 12 Deferred defects require a workaround, all 12 workarounds in place and exercised

Defect Summary (slide 2 of 3) [as of 10-01-10]

System	Defects to be resolved by Go-Live	Deferred Defects	Comments
MIS	Total: 24	Total: 9	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> 24 Defects to be resolved by 10/15/2010 <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> 2 Deferred defects require a workaround, both workarounds in place and exercised
NMMS	Total: 0	Deferred: 10	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> None <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> 9 Deferred defects require a workaround, all 9 workarounds in place and exercised
OS	Total: 1	Total: 125	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> 1 Defect to be resolved by 10/08 <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> 39 Deferred defects require a workaround, all 39 workarounds in place and exercised
CRR	Total: 3	Total: 5	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> 3 Defects to be resolved by 10/08 <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> 3 Deferred defects require a workaround, all 3 workarounds in place and exercised

Defect Summary (slide 3 of 3) [as of 10-01-10]

System	Defects to be resolved by Go-Live	Deferred Defects	Comments
EIP	Total: 4	Total: 62	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> 4 Defects to be resolved by 10/15 <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> 7 Deferred defects require a workaround, all 7 workarounds in place and exercised
CDR	Total: 16	Total: 7	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> 16 Defects to be resolved by 10/15 <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> 4 Deferred defects require a workaround, all 4 workarounds in place and exercised
EIS	Total: 17	Total: 8	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> 12 Defects to be resolved by 10/15 5 defects to be resolved by 11/19 <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> 5 Deferred defects require a workaround, all 5 workarounds in place and exercised

Update on Telemetry and Offer Curves

- **Configuring Alarms to identify offenders and assign priorities.**
- **Investigating how to convert errors to market incentives.**
- **Continue to review data from last LFC test**
 - No large errors seen

Update on the Potomac Economics Market Assessment

	Market Reform	Potomac Economics
Category 1 <i>Needs Fixing Now (before market start)</i>	PTP Options in the DAM (computational)	PTP Options in the DAM (computational) Load Zone Modeling (DAM LDFs)
Category 2 <i>Likely to Need Fixing Soon (after market start)</i>	Load Zone Modeling/Pricing Ancillary Service Deliverability CRR Derating	CRR Derating Intermittent Renewable Resource SCED Curtailment Flag
Category 3 <i>Must be Fixed Over Time (within a few years)</i>	Scarcity Pricing	SCED: (1) Real-time Co-optimization of Energy and Reserves (2) Operating Reserve Demand Curves (3) SCED Look-Ahead Ancillary Service Deliverability
Category 4 <i>Watch and Be Ready (if/when fix is needed)</i>	Settlement at Shadow Prices RUC and RUC Clawback SCED and 2-Step Mitigation	Settlement at Shadow Prices RUC and RUC Clawback 2-Step Mitigation Load Zone Pricing PTP Options in the DAM (price convergence) DAM Transmission Constraint Shadow Price Caps

Update on the Potomac Economics Market Assessment

Issue	Category	Mitigating Action
PTP Options in DAM (Computational)	Potomac 1 Market Reform 1	Tested PTP options in Dam trials. Install new hardware.
Load Zone Modeling/Pricing	Potomac 1 Market Reform 2	Radial load pocket code and Static LDFs .
Ancillary Service Deliverability	Market Reform 2 Potomac 3	Short term - Monitor and manage in the control room through HRUC and operator analysis and direct QSEs as necessary to other resources when issues occur. Medium term – Review procurement history and identify problems. Long term – Potential real time optimization with deliverability check. If needed.
CRR Derating	Potomac 2 Market Reform 2	Monitor CRR deratings in DAM During Market Trials CRR market appeared to be undersubscribed
Scarcity Pricing	Market Reform 3	Monitor prices and behavior along with planning reserves, and new interconnect agreements . Continue to track the peaker net margin.

Update on the Potomac Economics Market Assessment

Issue	Category	Mitigating Action
Settlement at shadow Prices	Market Reform 4 Potomac 4	Monitor during market cutover, create graphs and determine whether or not this is occurring with a frequency that justifies a make whole payment NPRR proposal.
RUC and RUC clawback	Potomac 4 Market Reform 4	Monitor volumes (i.e. number of RUC units and determine whether units are participating in the DAM market and/or self scheduling
SCED and two step mitigation	Market Reform 4 Potomac 4	This issue is somewhat linked to scarcity pricing and we will utilize some of the same monitoring that is planned for the scarcity concern.
Intermittent Renewable Resource curtailment flag from SCED	Potomac 2	Monitor the curtailments and performance and review the need for a curtailment flag post go live.
DAM Transmission Constraints Shadow Price Caps	Potomac 4	Do not bind on constraints that do not have generation dispatch solutions (i.e. radial load pockets). Do not bind on constraints with mitigation plans.



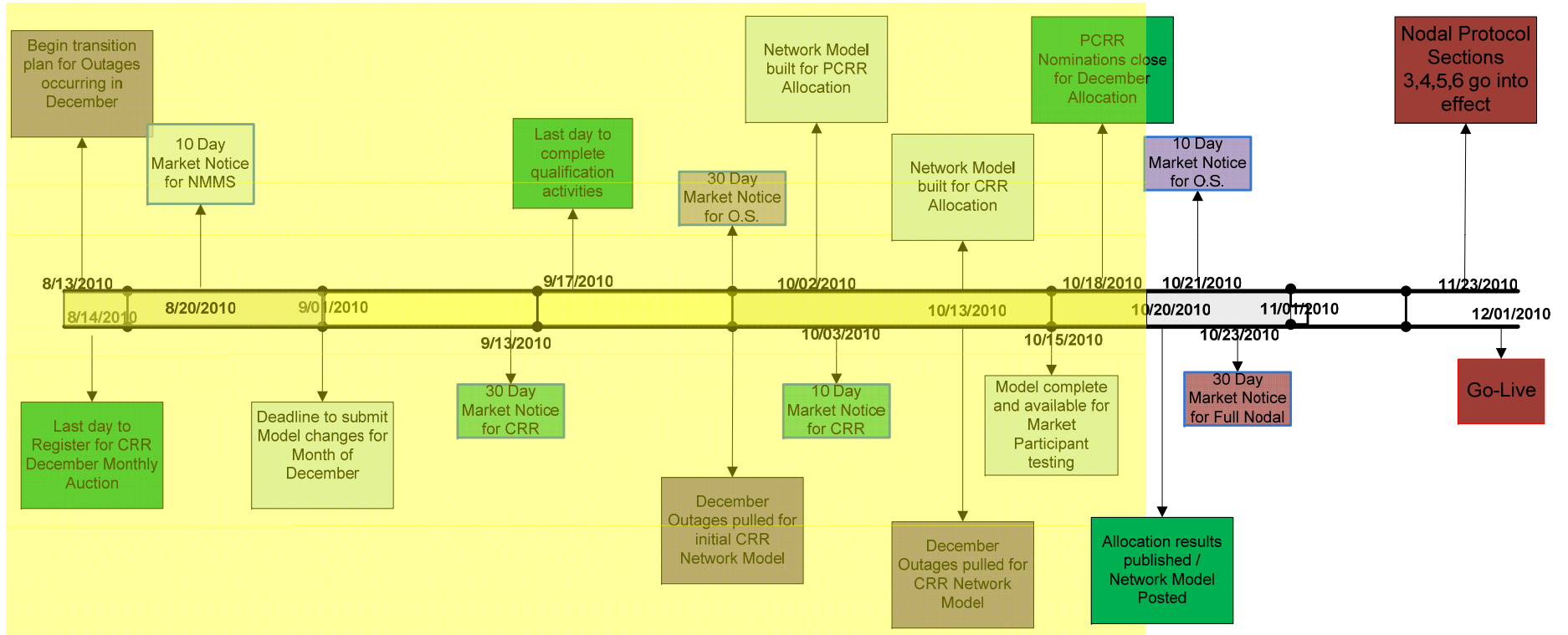
Nodal Go-Live Update

Review of Full Nodal Operations Go-Live Items

Kenneth Ragsdale
Principal Market Operations

Nodal Program Cutover Schedule: NMMS, OS, and CRR

The table below outlines key dates and activities for Nodal cutover



Nodal Program Communications

Readiness Signoff Schedule		
Network Operations Modeling	06/30	ERCOT Management Readiness Signoff
	07/01	TAC Approval
	07/20	Board of Directors Approval
	07/30	30 Day Market Notice sent
	09/01	Nodal Protocol Section 3.10 goes into effect
Congestion Revenue Rights	08/04	ERCOT Management Readiness Signoff
	08/05	TAC Approval
	08/17	Board of Directors Approval
	08/30	30 Day Market Notice sent
	10/01	Nodal Protocol Section 7 goes into effect
Outage Scheduling	08/04	ERCOT Management Readiness Signoff
	08/05	TAC Approval
	08/17	Board of Directors Approval
	10/01	30 Day Market Notice sent
	11/01	Nodal Protocol Section 7 goes into effect
Full Nodal Operations	10/01	ERCOT Management Readiness Signoff
	10/07	TAC Approval
	10/19	Board of Directors Approval
	10/23	30 Day Market Notice sent
	11/23	Nodal Protocol Sections 3,4,5,6 go into effect as well as all other unimplemented Protocol Sections

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

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

ERCOT plans to review the Market Readiness Criteria at NATF and subsequently request a vote from TAC per Section 21.12.3, Notice to Market Participants of Effective Date for Nodal Protocol Provisions and Retirement of Zonal Protocol Provision

System Readiness – evaluation of the Nodal system to support the market design

- ***Core system functionality delivered***
 - Protocol required system functionality available for market testing
- ***System Integration delivered***
 - System to system integration delivered to support Market Timeline and Business Processes
- ***Known defects resolution plan***
 - All ‘Must fix prior to go-live’ defects have a resolution plan in place
- ***Active Readiness Metrics***
 - Current status of Readiness Metrics

Readiness Methodology

Process Readiness – evaluation of the Processes and Procedures necessary to support the market design

– ***Procedures complete***

- ERT project procedures to support business processes complete

– ***System cutover transition plan established***

- ERCOT and Market Participant business activities required for transitioning into Go-Live have been established and communicated.

– ***Market rules transition communicated***

- Nodal and Zonal Protocol effective / retirement dates identified and communicated for Market Participant review

People Readiness – evaluation of ERCOT employee readiness and Market Participant knowledge to support the market design

– ***ERCOT staff supporting Market Trials***

- ERCOT Business teams supporting system execution, problem resolution, and market questions

– ***ERCOT staff trained on System and Processes***

- ERCOT Business teams training status based on identified ERT training metrics

– ***Market Participant Training delivered***

- ERT external training classes and web based training provided by the Nodal training project

MMS – Day Ahead, Adj. Period, RT Market – Readiness Update

System Readiness	Planned Completion	Status
MMS System release to Market Trials	02/01/10	Complete
Market Submission Connectivity Qualification (MP3)	08/31/10	Complete
Real-Time Market Daily Participation (MP15A)	09/30/10	Complete
Generate LMP's for 6 months (MO5)	09/30/10	Complete
Verify SCED Price Validation (MO4)	09/30/10	Complete
DAM Participation (MP16)	09/30/10	Complete
Generate Day-Ahead LMPs (MO9)	09/30/10	Complete
Verify DAM Price Validation (MO8)	09/30/10	Complete
DRUC Execution (MO10)	09/30/10	Complete
Verify Supplemental Ancillary Services Market (MO3)	09/30/10	Complete
Process Readiness		
Day Ahead, Adjustment Period and RTM Procedures	8/31/10	Complete
MMS Day Ahead & Real Time Price Validation Procedures	8/31/10	Complete
Nodal Protocol Transition Plan Updated for DAM, RUC, SASM, SCED	7/29/10	Complete
People Readiness		
ERCOT Staff Support of Market Trials	09/30/10	Complete
ERCOT Staff Trained on System and Processes	08/27/10	Complete
Market Participant Training Delivered	09/15/10	Complete

EMS – Real-Time Operations Readiness Update

System Readiness	Planned Completion	Status
EMS System Release to Market Trials	02/01/10	Complete
Verify ACE Performance (EMO5)	04/21/08	Complete
Individual LFC Testing (EMO6)	05/31/10	Complete
Telemetry / ICCP System Failover (N2)	09/22/10	Complete
Telemetry Compliance (MP6 SCED/SE)	06/02/10	Complete
Validate Telemetry / SE ISM / Data Accuracy (E3)	09/30/10	Complete
State Estimator Standards Performance (EMO9)	09/30/10	Complete
RTCA Zonal to Nodal Modeling Differences (EMO9)	09/30/10	Complete
RTCA CSC Zonal to Nodal Comparison (EMO9)	09/30/10	Complete
Verify Voltage Support Functionality (EM02)	09/10/10	Complete
Anomalous/Auto-Disabled Telemetered Points (EMO10)	09/30/10	Complete
Telemetry Alarm Processing (N1)	09/30/10	Complete
Process Readiness		
RT Operations Business Procedures	8/31/10	Complete
Nodal Protocol Transition Plan Updated for RT Operations	7/29/10	Complete
People Readiness		
ERCOT Staff Support of Market Trials	09/30/10	Complete
ERCOT Staff Trained on System and Processes	09/03/10	Complete
Market Participant Training Delivered	09/15/10	Complete

S&B – Settlements and Billing, Metering, and Data Aggregation Readiness

System Readiness	Planned Completion	Status
S&B System release to Market Trials	05/01/10	Complete
Verify RTM Settlement Statements (CO5)	09/30/10	Complete
Verify RTM Settlement Invoices (CO6)	09/30/10	Complete
Verify DAM Settlement Statements (CO3)	09/30/10	Complete
Verify DAM Settlement Invoices (CO7)	09/30/10	Complete
Verify CRR Auction Invoices (CO8)	09/30/10	Complete
Settle Market for 7 days and provide appropriate extracts (CO1)	08/25/10	Complete
Verify Dispute Process (CO2)	09/30/10	Complete
Zonal/Nodal Coordinated Settlement Operations (CO4)	09/08/10	Complete
Process Readiness		
Settlements and Billing Procedures	8/24/10	Complete
Nodal Protocol Transition Plan Updated for Settlements and Billing	7/29/10	Complete
People Readiness		
ERCOT Staff Support of Market Trials	09/30/10	Complete
ERCOT Staff Trained on System and Processes	07/30/10	Complete
Market Participant Training Delivered	09/15/10	Complete

CMM – Credit Management and Monitoring – Go Live

System Readiness	Planned Completion	Status
Credit Management Integrated in Market Trials	5/3/10	Complete
Verify CMM Credit Calculations (CO10)	9/8/2010	Complete
Process Readiness		
Credit Management Procedures	8/24/10	Complete
Nodal Protocol Transition Plan Updated for Credit Management	7/29/10	Complete
People Readiness		
ERCOT Staff Support of Market Trials	09/30/10	Complete
ERCOT Staff Trained on System and Processes	08/13/10	Complete
Market Participant Training Delivered	09/15/10	Complete

MIS – Market Information System – Go Live

System Readiness	Planned Completion	Status
MIS System release to Market Trials	2/1/10	Complete
MIS Compliance Test (E12)	9/8/2010	Complete
Process Readiness		
MIS Procedures	08/25/10	Complete
Nodal Protocol Transition Plan Updated for MIS	07/29/10	Complete
People Readiness		
ERCOT Staff Support of Market Trials	09/30/10	Complete
ERCOT Staff Trained on System and Processes	08/20/10	Complete
Market Participant Training Delivered	09/15/10	Complete

Nodal – Overall Readiness Metrics

Market Participant Readiness Items	Planned Completion	Status
QSE with Resource Connectivity to EDS Environment (MP2)	09/04/08	Complete
ICCP Point to Point Telemetry Test (MP5)	09/04/08	Complete
QSE Ability to Submit Transactions via MIS (MP8)	09/04/08	Complete
QSE Ability to Submit Web Services Transactions (MP9)	09/04/08	Complete
Resource Registration (MP11)	08/25/10	Complete
Wind Generation Resources ICCP Metrological Telemetry (MP21)	09/30/10	Complete
Telemetry Quality (MP to ICCP Server) (MP23)	09/30/10	Complete
Mapping of Resource and Loads in Private Area Networks (MP18)	08/25/10	Complete
Telemetry Compliance (MP6 - TSP)	06/02/10	Complete
Market Participant Nodal Readiness Declaration (R0)	10/01/10	Complete
Independent Market Monitor		
Market Monitor Systems Capability (IMM1)	10/01/10	Complete
Validate ISM Access & Accuracy of Postings Required by the IMM (E7)	10/01/10	Complete

Nodal – Overall Readiness Metrics

ERCOT Readiness	Planned Completion	Status
ERCOT Internal Training (E1)	09/30/10	Complete
Develop Nodal Procedures (E9)	09/30/10	Complete
Develop Nodal Operating Guides (E6)	09/22/10	Complete
Validate ISM, CDR, and Lodestar Source Reporting Access & Accuracy for internal ERCOT use (E10)	09/30/10	Complete
Verify ERCOT Performance Monitoring Test Plan (E2)	09/30/10	Complete
Nodal SAS 70 Preparedness* (E5)	10/01/10	Complete
ERCOT Staffed for Texas Nodal Operations (E8)	08/25/10	Complete
Verify QSE Performance Monitoring Test Plan (E14)	09/30/10	Complete
Verify TSP Performance Monitoring Test Plan (E15)	09/30/10	Complete
Operating Personnel and Facilities Readiness (EMO13)	08/11/10	Complete
ERCOT Operating Personnel and Facilities Readiness (MO7)	08/11/10	Complete
168-Hour Test Completion (R3)	09/22/10	Complete
ERCOT Nodal Readiness Declaration (R1)	10/01/10	Complete
Develop Texas Nodal Market Launch Plan (R2)	10/01/10	Complete

* PWC completed their assessment of the Nodal Control Objectives on 6/30/10. ERCOT's Internal Audit is performing an audit to further ensure that ERCOT is ready to operate consistent with the control objectives

Nodal – Overall Readiness Metrics

Contingency Plans	Planned Completion	Status
Contingency Plan for Weekly, Daily and Hourly RUC Failure (C1)	09/30/10	Complete
Contingency Plan for DAM / LMP Failure (C2)	09/30/10	Complete
Contingency Plan for ICCP Data Failure (C3)	09/30/10	Complete
Contingency Plan for SCED Failure (C4)	09/30/10	Complete
Contingency Plans for Key Settlement and Financial Transfer Processes (C5)	09/30/10	Complete
Develop Plan for SE Failure (C6)	09/30/10	Complete
Contingency Plan for a Backup Facility (C7)	09/30/10	Complete
Contingency Plan for Portal/API Failure (C8)	09/30/10	Complete
Contingency Plan for Site Unavailability (C9)	09/30/10	Complete
Verify Single Point of Failure Recovery EMS/MMS/NMMS/CRR/COMS (C10)	09/30/10	Complete

Nodal – Overall Readiness

Readiness Signoff		
ERCOT Management Signoff	10/01/10	Complete
NATF Recommendation for TAC Approval	10/05/10	Complete
TAC Approval	10/07/10	Complete
BOD Approval	10/19/10	
30 Day Market Notice	10/23/10	
10 Day Market Notice	11/13/10	

NATF Approved Go-Live Recommendation

“Based on the observations and experience of the NATF members and the certification by ERCOT management, NATF is unaware of any outstanding issue, or collection of issues, that would prohibit TAC from voting affirmatively for the ERCOT Nodal Market Go-Live; therefore, NATF recommends approval by TAC for a December 1, 2010 go-live.

The NATF recommendation is based on our direct discussions with ERCOT and Market Trials observations. NATF acknowledges there is much that cannot be directly observed by individual Market Participants. Where not directly observed, NATF has relied on those that have direct knowledge.

NATF has reviewed with ERCOT the issues that have been reported as of October 5, 2010, as identified in the QSE and TDSP issue lists and in the ERCOT Management Readiness Certification. ERCOT currently has a plan to address each of the “Defects to be Resolved by Go-live” which includes a delivery date for the fix, a workaround or has a workaround plan in progress. NATF accepts ERCOT’s status regarding deferred issues. The NATF expects ERCOT to continue updating NATF, TAC and the Board regarding the progress of the fixes and workarounds.”

NATF Vote Totals		
		MP Segment
For	7	
Against	0	
Abstention	1	Consumer

TAC Certification of Full Nodal Systems for Go-Live

TAC voted to certify the Full Nodal systems for a December 1, 2010 Go-Live based on the October 1, 2010 ERCOT Management Readiness Certification and the October 5, 2010 Nodal Advisory Task Force (NATF) recommendation.

TAC Vote Totals		
		MP Segment
For	25	
Against	1	Consumer
Abstention	3	Cooperative (2) & Consumer

Recommended Board Resolution for Full Nodal Operations Approval

WHEREAS, Protocols Section 21.12.3, Notice to Market Participants of Effective Date for Nodal Protocol Provisions and Retirement of Zonal Protocol Provisions, provides that before a “part of the nodal market design may start operation,” a vote of the Board of Directors (Board) of the Electric Reliability Council of Texas, Inc (ERCOT) is required affirming that the “Market Readiness Criteria for that part of the nodal market design have been met”;

WHEREAS, the Section 21.12.3 certification by the Technical Advisory Committee (TAC), ERCOT staff, and the ERCOT Board of Directors regarding the satisfaction of “Market Readiness Criteria” for a particular part of the nodal market design will result in ERCOT issuing “two Notices alerting Market Participants to the effective date of Nodal Protocol sections and the retirement of Zonal Protocol sections, as applicable”;

WHEREAS, the Protocols do not define the term “Market Readiness Criteria,” and ERCOT, in conjunction with Market Participants, has developed specific metrics and a Nodal Readiness Scorecard that are used to determine the progress of specific parts of the nodal market design in meeting the criteria necessary for implementing the Nodal Protocols and starting operations;

WHEREAS, the ERCOT Board recognizes that there are issues that remain to be addressed regarding the implementation and operation of Full Nodal Operations before the Texas Nodal Market Implementation Date (TNMID), but that none of those issues should prevent Full Nodal Operations Go-Live on December 1, 2010;

WHEREAS, the ERCOT Board has reviewed the market readiness metrics documentation underlying ERCOT staff’s recommendation regarding Full Nodal Operations part of the nodal market design, and has conducted due diligence on ERCOT staff’s conclusion that the Full Nodal Operations has satisfied all of the steps necessary to make the declaration of market readiness required by Section 21.12.3, in order to authorize Full Nodal Operations Go-Live on December 1, 2010;

WHEREAS, ERCOT staff provided its Section 21.12.3 certification document, attached hereto as Exhibit A, and a list of known issues, attached hereto as Exhibit B, to TAC prior to TAC’s consideration of this issue, and on October 7, 2010, TAC voted to certify the Full Nodal systems for a December 1, 2010 go-live based on the October 1, 2010 ERCOT Management Readiness Certification and the October 5, 2010 Nodal Advisory Task Force (NATF) recommendation , attached hereto as Exhibit C;

THEREFORE be it RESOLVED, that this Resolution shall serve as the ERCOT Board’s certification that all Market Readiness Criteria have been met, for purposes of ERCOT Protocols Section 21.12.3, regarding Full Nodal Operations Go-Live on December 1, 2010.

FURTHERMORE, the ERCOT Board directs that status updates regarding outstanding issues be provided at future ERCOT Board meetings.




Nodal Go-Live Update Certified Systems Update

Kenneth Ragsdale
Principal Market Operations

NMMS Overview

Recommendation of Certification

ERCOT		NATF	
TAC		BOD	

Status / Other Issues:

- No major issues
- Stability issue resolved as of July 1st (ERCOT continues to monitor production)
- Navigation performance issues improved Aug 1st (43% reduction in response time)
- Validation performance improved August 27th (40% reduction in validation time).

Go -Live Required Defects*:

 Required For Go-Live: 0

Deferred Defects*:

 Deferred  10

* As of October 1, 2010

OS Overview

Recommendation of Certification

ERCOT		NATF	
TAC		BOD	

Status / Other Issues:

- All Full Nodal Operations issues within the TSP Issues list have either been reviewed or are resolved
- ERCOT is working with the TSPs to plan and prioritize the defects and parking deck items for post Go-Live

Go -Live Required Defects*:

 Required For Go-Live: **1**

Deferred Defects*:

 Deferred **125**

* As of October 1, 2010

CRR Overview

Recommendation of Certification

ERCOT		NATF	
TAC		BOD	

Status / Other Issues:

- The latest version of the Topology Processor application, used to create Planning and CRR model with outages, has been received from the vendor and successfully creates the network model with the included outages
- The October CRR Monthly Auction used manual workaround

Go –Live Required Defects*:

 Required For Go-Live: **3**

Deferred Defects*:

 Deferred **5**

* As of October 1, 2010



Nodal Parking Deck Items

Troy Anderson

Manager Enterprise Project Portfolio

Nodal Parking Deck – Prioritization Guidelines

Priority	Definition
Critical	Required by Statute, PUCT Order, NERC compliance or <u>critical</u> reliability of: <ul style="list-style-type: none">• Grid Operations• IT Infrastructure• Commercial Settlement
High	<u>High</u> value for a majority of market segments or ERCOT
High / Medium	<u>High</u> value to one or two segments, or <u>Medium</u> value for a majority of market segments or ERCOT
Medium	<u>Medium</u> value for only one segment

Source	Title	Priority	Approval Date
NPRR208	Registration and Settlement of Distributed Generation (DG) Less Than One MW	Critical	BoD Approved 7/20/2010
★ SCR756	Enhancements to the MarkeTrak Application	Critical	BoD Approved 7/20/2010
NPRR131	Ancillary Service Trades with ERCOT	High	BoD Approved 1/19/2010
NPRR146	ICCP Telemetry Information Submittals	High	BoD Approved 6/15/2010
NPRR181	FIP Definition Revision	High	BoD Approved 1/19/2010
NPRR207	Unit Deselection	High	BoD Approved 7/20/2010
NPRR210	Wind Forecasting Change to P50, Synch PRR841	High	BoD Approved 6/15/2010
NPRR222	Half-Hour Start Unit RUC Clawback	High	BoD Approved 7/20/2010
NPRR251	Sync of PRR845, Definition for IDR Meters and Optional Removal of IDR Meters at a Premise Where an Advanced Meter Can be Provisioned	High	BoD Approved 9/21/2010
SCR759	acLineSegment Name Length Increase in Information Model Manager	High	BoD Approved 9/21/2010

★ On Parking Deck due to resource impact only. Separately funded on 2011 PPL.



Source	Title	Priority	Approval Date
NPRR240	Proxy Energy Offer Curve	High / Medium	BoD Approved 9/21/2010
NPRR153	Generation Resource Fixed Quantity Block Offer	Medium	BoD Approved 1/19/2010
NPRR164	Resubmitting Ancillary Service offers in SASM	Medium	BoD Approved 1/19/2010
NPRR241	Aggregate Incremental Liability (AIL) Calculation and Credit Reports Publish Corrections	Medium	BoD Approved 9/21/2010
NOGRR034	Rescind Telemetry Performance Calculation Exclusions	Medium	BoD Approved 9/21/2010
SCR755	ERCOT.com Website Enhancements	Medium	BoD Approved 2/16/2010

Nodal Parking Deck – Pending

Source	Title	Suggested Priority	Current Status
NPRR219	Resolution of Alignment Items A33, A92, A106, and A150 - TSPs Must Submit Outages for Resource Owned Equipment and Clarification of Changes in Status of Transmission Element Postings	Critical	Pending at Board TAC approved 10/7/2010
NPRR244	Clarification of Other Binding Documents	High / Medium	Pending at Board TAC approved 10/7/2010
NPRR256	Sync Nodal Protocols with PRR787, Add Non-Compliance Language to QSE Performance Standards	TBD	Pending at PRS
NPRR257	Synchronization with Nodal Operating Guide Section 9, Monitoring Programs	TBD	Pending at PRS
NPRR258	Sync with PRR824 and PRR833 and Additional Clarifications	TBD	Pending at PRS
NPRR260	Providing Access to MIS Secure Area to MIS Registered Users	TBD	Tabled at PRS
NPRR272	Definition and Participation of Quick Start Generation Resources	TBD	Pending at PRS
NOGRR050	Resolution of Reporting Issues Related to NPRR219	TBD	Pending at Board TAC approved 10/7/2010

Nodal Parking Deck – Additional Items for Consideration

Title	Current Status / Description
Deferred NOGRR025 Reports	Draft NPRR in progress to gray-box reports planned for delivery after Nodal go-live
NMMS API	Functionality to be considered for post-go-live development
CRR API	Functionality to be considered for post-go-live development
MMS Multiple Network Models	Functionality to be considered for post-go-live development
Add PSS Status to RARF	Automation of manual process as a result of NPRR156
Automated Default Uplift Invoice	Automation of manual process as a result of NPRR221
EILS Enhancements	Automation of manual process
Load Participation in SCED	Functionality to be considered for post-go-live development
EMS Upgrade	Upgrade EMS system from v2.3 to v2.5/v2.6
Deferred Defects	Defects not addressed prior to go-live Approximately 700 deferred defects as of July 2010 Review underway to confirm issues and confirm acceptable workarounds

Nodal Parking Deck – Additional Items for Consideration

Title	Current Status / Description
Large Wind Power Production Ramp Forecasting Phase 2	Phase 2 of the project that built a display for ERCOT operators to indicate periods of time within the next 6 hours during which there is a high risk for a large wind power production ramp to occur
TML Transition to MIS	Upon go live, most applications that are currently available through TML will migrate to MIS and will only be accessible to MPs through the MIS portal. RMS has requested that Zonal Reports, Find ESI ID, Find Transactions, and Transaction submission be accessed through TML until MIS has had sufficient time to stabilize.
Decommission of Zonal Wholesale	After go-live of the redesigned ERCOT wholesale market, certain ERCOT systems and components that were only applicable to zonal wholesale operations will become disposable and need to be decommissioned.
Nodal Cutover Cleanup	Remove pre-go-live data from Nodal systems
Move Price Validation Tool (PVT) to a Server Application	Functionality to be considered for post-go-live development
Update Credit PFE Model (Potential Future Exposure)	Enhance PFE model to include the following risk factors: <ul style="list-style-type: none"> • Price volatility analysis for the Day Ahead Market, • Bid and offer volume analysis in the Day Ahead Market, and • Value of Congestion Revenue Rights
Automate Identification of PUNs for Reporting	NPRR202 required that Private Use Networks (PUNs) be excluded from State Estimator postings of transmission flows and voltages. This requirement is being met by adding a static table to the reporting infrastructure to store the list of known PUNs. This Parking Deck item would create a method to dynamically derive the population of PUNs for this reporting.
TSP / QSE Issue Lists	Items not addressed prior to Nodal go-live
Potomac Economics Market Assessment	Items not addressed prior to Nodal go-live



Monthly Financial Review

Mike Petterson
Controller

Nodal Financial Management Office

Current Monthly Financials

Financial Review – September 2010 Performance Forecast vs. Actual

Line	Cost Summary			Variance	
		Forecast ¹	Actual	Fav./	(Unfav.)
1	Internal Labor Costs	\$ 2.1	\$ 2.3	\$	(0.2)
2	Backfill Labor Costs	0.1	0.1		-
3	External Resource Costs	2.0	1.8		0.2
4	Software & Software Maintenance	0.3	0.2		0.1
5	Hardware & Hardware Maintenance	0.2	0.4		(0.2)
6	Other	-	-		-
7	Sub-total Direct Project Costs	\$ 4.7	\$ 4.8	\$	(0.1)
8	Allocations	0.2	0.2		-
9	Finance Charges	1.1	0.9		0.2
10	Sub-total Indirect Project Costs	\$ 1.3	\$ 1.1	\$	0.2
11	Total	\$ 6.0	\$ 5.9	\$	0.1

Amounts in Millions

Note 1: Forecast consists of re-forecast from July 1,2010 plus Q3 NCRs

Financial Review – LTD Performance through September 2010

Forecast vs. Actual

Line	Cost Summary	Forecast ¹	Actual	Variance Fav./((Unfav.)	Estimate to Complete
1	Internal Labor Costs	\$ 78.0	\$ 79.0	\$ (1.0)	\$ 5.5
2	Backfill Labor Costs	6.2	6.2	-	0.2
3	External Resource Costs	277.0	276.6	0.4	3.7
4	Software & Software Maintenance	30.1	29.8	0.3	0.9
5	Hardware & Hardware Maintenance	49.1	49.2	(0.1)	0.7
6	Other	2.2	2.2	-	0.1
7	Sub-total Direct Project Costs	\$ 442.6	\$ 443.0	\$ (0.4)	\$ 11.1
8	Allocations	22.5	22.6	(0.1)	0.6
9	Finance Charges	35.4	34.8	0.6	15.5
10	Sub-total Indirect Project Costs	\$ 57.9	\$ 57.4	\$ 0.5	\$ 16.1
11	Program Contingency Fund Unutilized	-	-	-	2.5
12	Board Discretionary Fund	-	-	-	113.6
13	Total	\$ 500.5	\$ 500.4	\$ 0.1	\$ 143.3

Amounts in Millions

Note 1: Forecast consists of re-forecast from July 1, 2010 plus Q3 NCRs



Financial Review – Program Contingency Fund

Q3 Risk Items Update

Line	Major Activities/Adjustments	Likely to Spend ¹	Risk	Approved NCRs	Unutilized Risk Funds
1.	Operational Readiness Support	H	\$ 2.0	\$0.1	\$1.9
2.	Infrastructure Hardware & Application Upgrades	H	0.5	0.2	0.3
3.	Current Open Change Requests	H	0.6	0.6	0.0
4.	Expected Nodal Change Requests	H	0.3	0.2	0.1
5.	Network Model Management	L	0.2	0.1	0.1
6.	Cutover Coordination	L	0.2	0.1	0.1
	Total		<u>\$ 3.8</u>	<u>\$1.3</u>	<u>\$ 2.5</u>

Amounts in Millions

Note 1: H – high probability risk has or will materialize, L – low probability risk has or will materialize



Quarterly Reforecast Process Update

Financial Review – Board Discretionary Fund Summary

- **The Board Approved Budget is \$643.8M**
- **Board Discretionary Fund increasing by \$4.1M to \$117.7M**
 - Direct Program Costs:
 - Estimate at Completion reforecast favorable net variance \$3.6M
 - Unutilized Q3 2010 EAC risk items \$2.5M
 - Q3 unfavorable variance (\$0.4M)
 - Program risk items for Q4 (\$2.0M)
 - Indirect Program Costs:
 - Q3 favorable finance variance \$0.6M
 - Q3 unfavorable allocations variance (\$0.1M)

Summary	
Board Discretionary Fund	Millions
Beginning balance, 7/01/10	\$113.6
Direct Program Costs (see slide 8)	3.6
Indirect Program Costs	<u>0.5</u>
Ending balance, 10/1/10	<u>\$117.7</u>

Financial Review – Program Contingency Fund

Q4 Risk Items Update

Program Risk & Changes	Major Activities/Adjustments	Program Fund	Board Fund
	Existing Program Contingency at July 1, 2010	\$ 3.8	
Approved Change Management Items Charged to Program Contingency	<ul style="list-style-type: none"> • External Resource extensions to support Market Trials and Testing (\$0.8M) • ABB Q4 Resource extension (\$.3M) • SAS and CPLEX License and maintenance (\$0.2M) • CRR Auction Related upgrades and staff backfill (\$0.2M) • INT Testing Internal Resource extensions (\$0.2M) • Other Internal Resource extensions including Development, Cutover, ect (\$0.2M) • Giveback NCRs for Internal & External Labor and IBM HW Mainenance (-\$0.4M) • EMS and OTS Vendor Funding changes (-\$0.2M) 	(1.3)	
	Close out unutilized Q3 2010 EAC Risk Items	(2.5)	2.5
Budget to Actual Variance	• Q3 Unfavorable Direct Cost Variance		(0.4)
	Removal of Dec 2010 budget (-\$2.8M) Reforecast of Q4 ETC budget using bottom-up estimates (-\$0.7)		3.5
Risk items for Inclusion in Program Contingency	<ul style="list-style-type: none"> • Operational Readiness Support • Current Open Nodal Change Request • Infrastructure Hardware Upgrades and Application Patching • Expected Nodal Change Requests • Market Design and Analysis 	0.7 0.5 0.3 0.3 0.2	(0.7) (0.5) (0.3) (0.3) (0.2)
	Total Board Discretionary Fund Giveback		\$ 3.6
	Program Contingency Fund at October 1, 2010	\$ 2.0	

Amounts in Millions



Financial Review – Program Contingency Fund

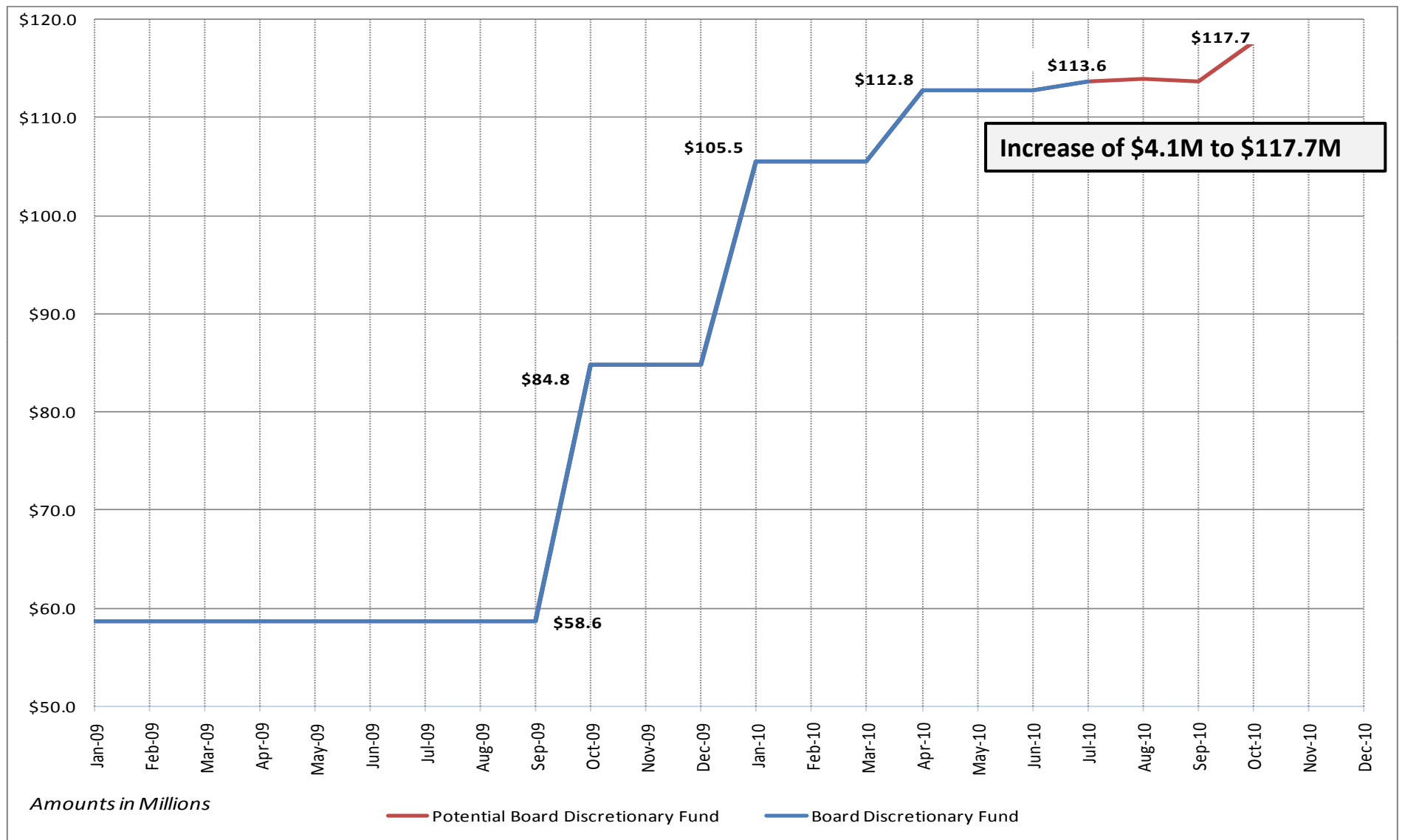
Q4 Risk Request Detail

	Program Risk & Changes	Risk	Risk Details
1.	Operational Readiness Support	\$0.5	<ul style="list-style-type: none"> • Potential staff augmentation due to attrition prior to go-live • Assumes 8 additional contractors brought in @\$250/hr monthly
2.	Infrastructure Hardware & Application Upgrades	0.5	<ul style="list-style-type: none"> • Technical architecture for performance optimization • Unplanned hardware (servers and storage) • HW/SW Maintenance true-ups
3.	Current Open Change Request	0.3	<ul style="list-style-type: none"> • Open Nodal change request and exception request estimates as of October 1, 2010 • Extension of internal and external labor
4.	Expected Nodal Change Requests	0.5	<ul style="list-style-type: none"> • Estimate based on historical change requests and future complexities. Includes risk for defect remediation and work efficiencies • ABB point –to-point for NOIE • Process improvement to limit contingency in Wholesale Market Operations
5.	Market Analysis	0.2	<ul style="list-style-type: none"> • External Resource support for market design and analysis
	Total	<u>\$2.0</u>	

Amounts in Millions



Financial Review – Board Discretionary Fund



Financial Review – Estimate At Completion

Q4 Reforecast

Line	Cost Summary	LTD Actual	Estimate To Complete	Estimated Program Total
1	Internal Labor Costs	\$ 79.0	\$ 3.6	\$ 82.6
2	Backfill Labor Costs	6.2	0.2	6.4
3	External Resource Costs	276.6	2.9	279.5
4	Software & Software Maintenance	29.8	0.6	30.4
5	Hardware & Hardware Maintenance	49.2	0.5	49.7
6	Other	2.2	-	2.2
7	Program Contingency Fund Request	-	2.0	2.0
9	Sub-total Direct Project Costs	\$ 443.0	\$ 9.8	\$ 452.8
10	Allocations	22.6	0.4	23.0
11	Finance Charges	34.8	15.5	50.3
12	Sub-total Indirect Project Costs	\$ 57.4	\$ 15.9	\$ 73.3
13	Total	\$ 500.4	\$ 25.7	\$ 526.1
<i>Supplemental Information</i>		<i>Q3 Balance</i>	<i>Giveback</i>	<i>Q3 Balance</i>
14	Board Discretionary Fund	\$ 113.6	\$4.1	\$ 117.7
15	February 2009 Approved Budget			<u>\$ 643.8</u>

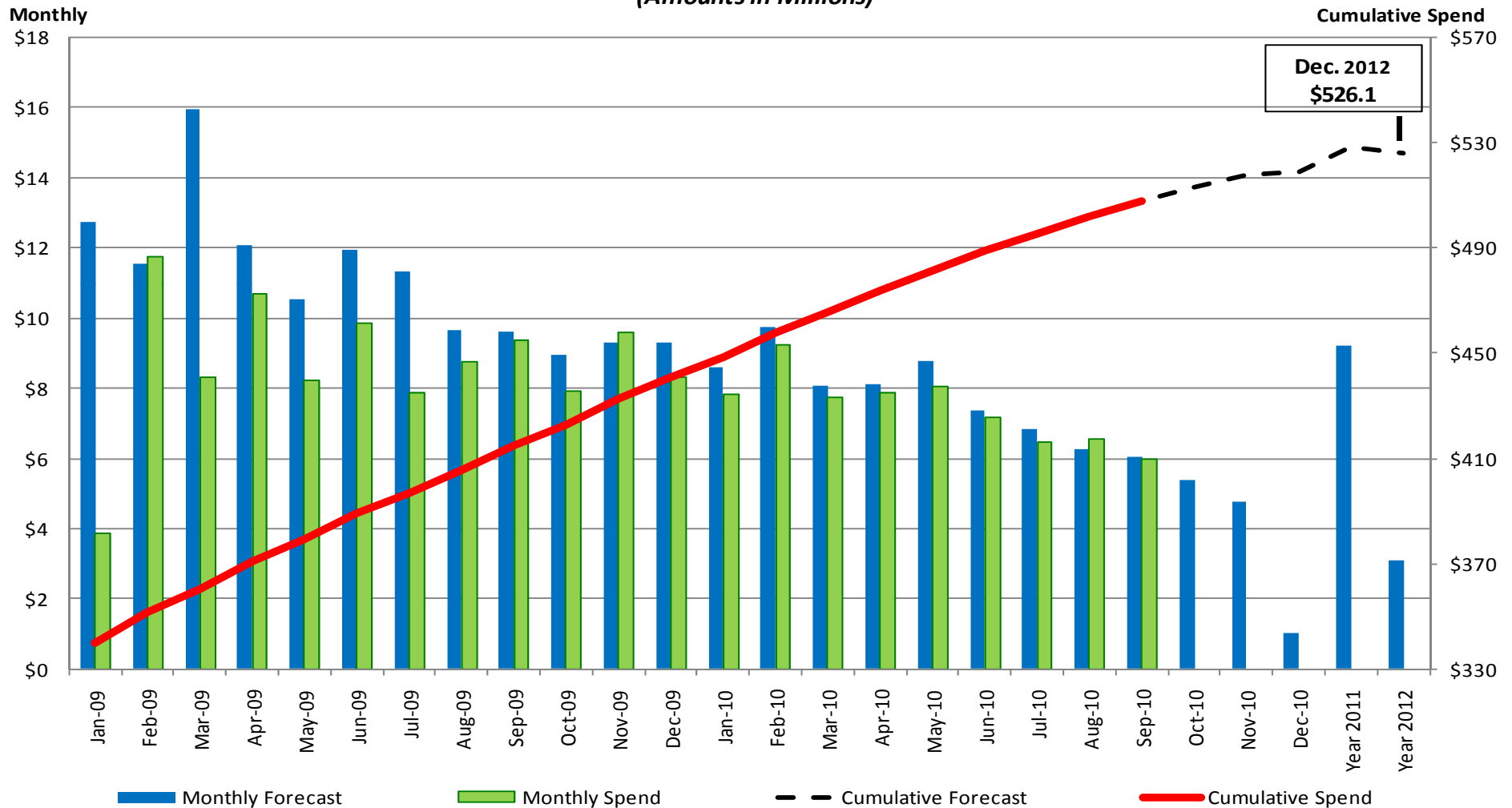
Amounts in Millions



Financial Performance

Financial Review – Program Cost Management

Monthly Budget, Forecast and Actual Analysis (Amounts in Millions)



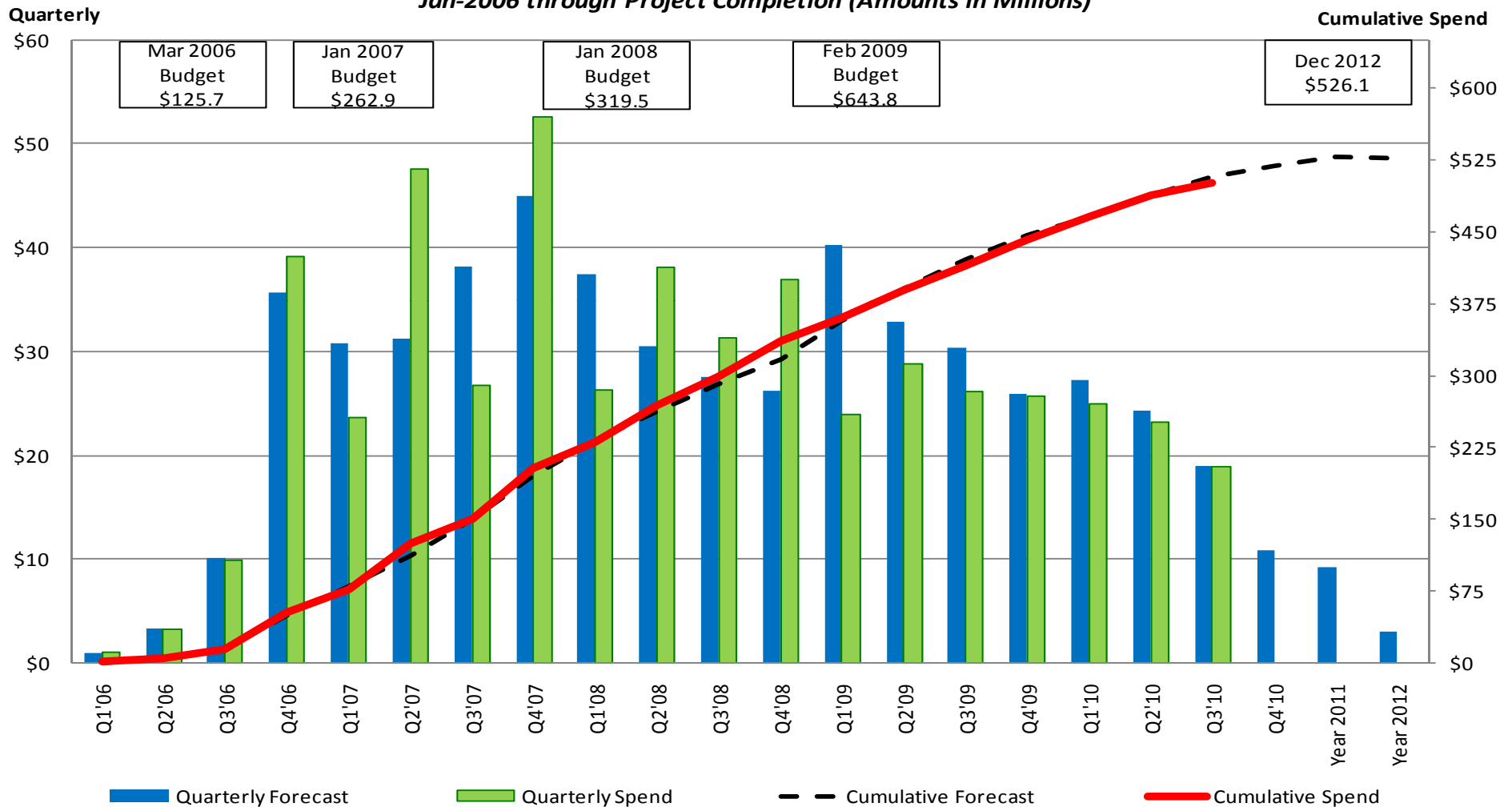
Note: Years 2011 and 2012 reflect finance charges



Financial Review – Program Cost Management

Quarterly Budget, Forecast and Actual Analysis

Jan-2006 through Project Completion (Amounts in Millions)



Note: Years 2011 and 2012 reflect finance charges



Questions ?

Appendix

MMS – Day Ahead, Adjustment Period, RT Market Overview

Recommendation of Certification

ERCOT		NATF	
TAC		BOD	

Status / Other Issues:

- Progress on the DAM performance issue concerning CRR PTP options continues to be made
 - ERCOT is planning to upgrade the hardware on which DAM runs
 - Upgraded servers are installed at ABB site and in the process of being installed at ERCOT
 - Testing of the new ERCOT servers is scheduled to begin October 18, 2010 at ERCOT
- Configuration and data corrections have greatly improved HRUC performance
- LDF methodology approved by TAC in October
- Phase Shifter Transformers (PSTs) settings causing overloads in the DAM
 - ERCOT is developing procedures to analyze PSTs to determine the best setting to use for minimizing overloads. 'Monitor Only' elements list will continue to be managed
- All required for Go-Live defects will be fixed and placed in production by no later than November 5, 2010

Go –Live Required Defects*:

 Required For Go-Live:  17

Deferred Defects*:

 Deferred  63

* As of October 1, 2010

EMS – Real-Time Operations

Recommendation of Certification

ERCOT		NATF	
TAC		BOD	

Status / Other Issues:

- State Estimator/Real-Time Contingency Analysis/Transmission Constraint Manager/LFC and interface to MMS SCED during Full System Market and Reliability Test performing as expected.
- STNET being upgraded to include current Zonal tools to support Outage Coordination and operations studies.
- All reports required by State Estimator Standards/Telemetry Standards on track for delivery.
- All remaining Required for Go-Live defects will be fixed and placed in production by no later than November 5, 2010

Go –Live Required Defects*:

Required For Go-Live: 19

Deferred Defects*:

Deferred 347

* As of October 1, 2010

COMS – Settlement & Billing, Metering, and Data Aggregation - Overview

Recommendation of Certification

ERCOT		NATF	
TAC		BOD	

Status / Other Issues:

- Statements and Invoices are being generated and published timely.
- The core S&B calculations are working properly

- There are 2 remaining go-live defects for Data Aggregation. The defects are related to transfer of owner share limits from NMMS and a performance tuning adjustment necessary for the increased volume of AMS Meters Data Aggregation. These will be resolved with the October 8, 2010 migration.

Go –Live Required Defects*:

 Required For Go-Live: 2

Deferred Defects*:

 Deferred 62

* As of October 1, 2010

CMM – Credit Overview

Recommendation of Certification

ERCOT		NATF	
TAC		BOD	

Status / Other Issues:

- In conjunction with the 168-hour test, ERCOT reset Market Trials data that was causing the core credit calculation to be unrepresentatively high
 - This provides CPs that behave “normally” during the 168-hour test an opportunity to see what their credit calculation would be after “Go-Live”
- Some concern by the market with transparency into the step by step consumption of credit within DAM still remains

•The remaining Required for Go-Live defect will be fixed and placed in production by no later than by October 8, 2010

Go –Live Required Defects*:

Required For Go-Live: **1**

Deferred Defects*:

Deferred **51**

* As of October 1, 2010

MIS – Market Information System Overview

Recommendation of Certification

ERCOT		NATF	
TAC		BOD	

Status / Other Issues:

- MIS defects of highest priority are around Extract Subscriber and Dashboards. Dashboards will be available on the MIS on 10/12 but may be static screens due to specific data sets not running outside of the NPROD environment. Extract Subscriber defects will begin their testing phase during the MIS reconfiguration downtime..

- Fixes for most of these are already developed and will be tested during the MIS reconfiguration downtime.

- All remaining Required for Go-Live defects will be fixed and placed in production by no later than by October 15, 2010

Go –Live Required Defects*:

 Required For Go-Live:  24

Deferred Defects*:

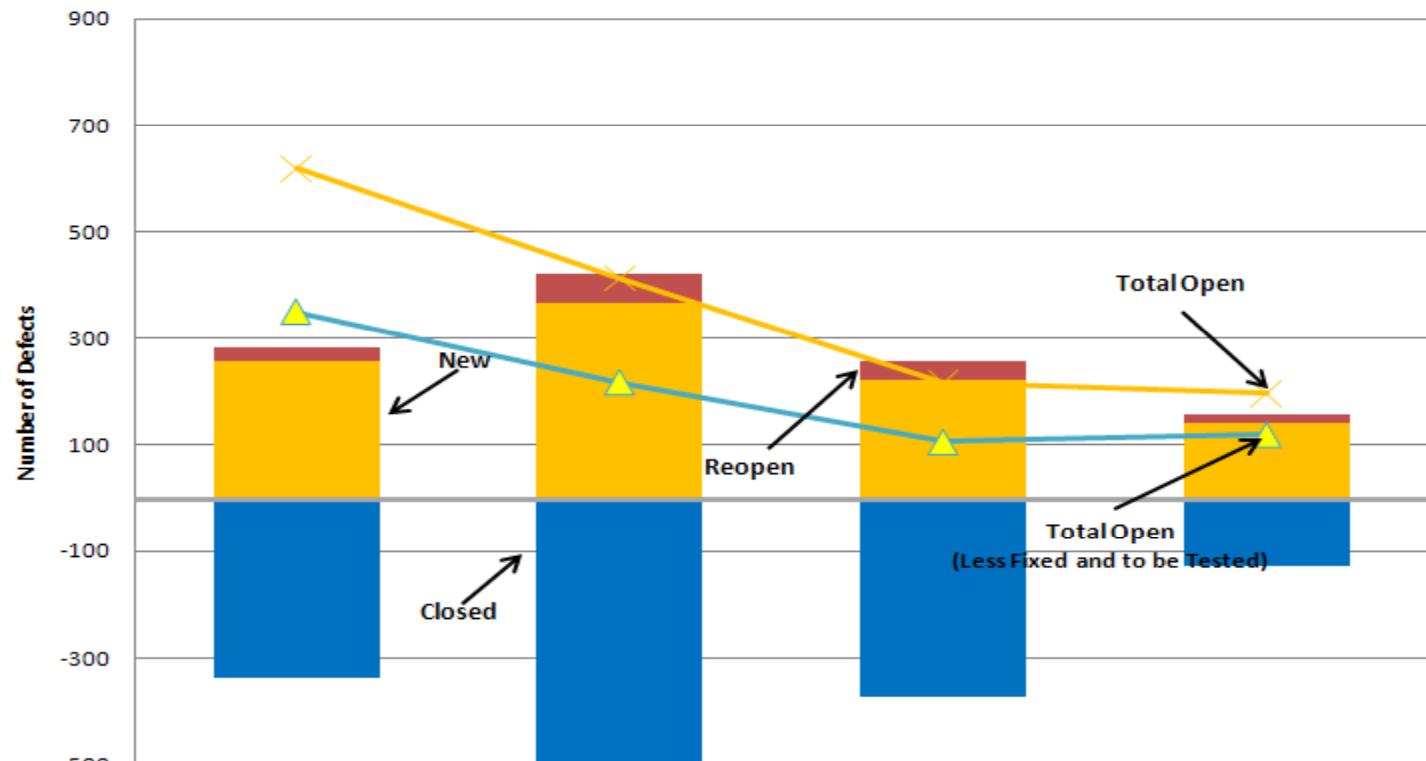
 Deferred  9

* As of October 1, 2010

Nodal Defects Trends - High Priority (Must Fix Before Go-Live)

- Defect counts decreased due to planned defect migrations into Nodal iTest.
- Primary source of Open defect counts are MMS, EMS, MIS, and EDW.
- Total active high priority defects are currently at 197.

**Nodal Defects
Total Open vs. Monthly Variation**



	June	July	August	September
Closed	-339	-531	-372	-130
Reopened	23	55	36	15
New	259	367	221	143
Total Open	618	413	216	197
Total Open - (Fixed & to be Tested)	350	218	107	121

Defects, Issues, Quality of Solution: Definitions

- **Defects:**
 - A technical error or problem between ERCOT's internal system or between ERCOT and the market
 - Deferred defects are Severity 3 defects, that have been deferred until after Go-Live, but have a confirmed workaround in place
- **Quality of Solution:**
 - Data Issues:
 - Heavily dependant on inputs
 - No significant software issues
 - On-going analysis of results and inputs
 - Performance Issues:
 - ERCOT is constantly looking to improve performance
 - Monitoring in place to detect issues
- **Known Issues / Market Facing Issues**
 - Issues uncovered during internal testing or market trials that impact Market Participants