



Texas Nodal Market Implementation
Program Update

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Monthly Board of Directors Meeting
February 19, 2008

- **Program Status**
- **Recent Successes**
- **Key Risks**
- **Quality**
- **Schedule (168 Hour Test and impact of PRR 727 approved 1/08)**
- **Cost**
- **Questions**



Nodal Delivery status remains *amber*; key checkpoints approaching

Nodal Delivery

Scope / Quality

Green

Amber

- Nodal projects essentially have frozen changes to functionality required for the 168 hour test (9/1/2008)
- Aligned with protocols
- Test results are being managed in Quality Center and results are being used to track defects for resolution.
- Traceability documents still being drafted, effort to increase %'s
- Reports being published weekly to <http://nodal.ercot.com>

Schedule

Amber

- Key checkpoints being put in place to ensure ongoing viability of 12/1/2008
- Planning for the “168 Hour Test” less than 200 days away.
- EDS 2 is RED until probably the end of February
- Single Entry Go-Live delayed – no projected impact on Go-Live

Cost

Red

- Revised budget approved by ERCOT BOD, however we will be RED until fee filing approved.
- Preparing for revised Fee Filing with the PUC.

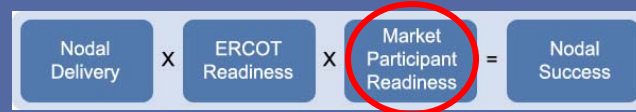
Legend

| | | | | |
|-------|---|--|---------------------|---------------------------------------|
| Red | Program is not aligned to protocols | Current product quality is not sufficient for Nodal launch | Go-live = >30 days+ | Estimate at Complete = >\$263m + 10% |
| Amber | Program is aligned to previous protocol version | Most Nodal products currently achieve quality standards | Go-live = <30 days+ | Estimate at Complete = < \$263m + 10% |
| Green | Program is aligned with current protocols | All Nodal products currently achieve quality standards | Go-live = 12/1/08 | Estimate at Complete = <\$263m |



ERCOT Readiness status remains amber, but a renewed awareness of the need for preparation is apparent

- ***Organization, Processes and Procedures, and Training show progress***
 - *Organization*
 - Completed review of Deep Dive presentations including staffing/ sizing department models for Post-Nodal implementation (2009).
 - Draft Vision, Mission, Core Values and Strategic Plan completed. Transition sponsors are assigned.
 - January Executive Readiness Survey overall indicates Amber. Key Focus Areas to work on: adequate staffing, procedures, transition planning.
 - Transition plans being documented for all key departments.
 - *Processes and Procedures*
 - Business Process Model completed to procedure level and ready to leverage for testing and validation during EDS and training.
 - Increased focus on the creation of procedures.
 - *Training*
 - Training tracking and tailoring at the department/individual level.
 - Validation of current individual training plans
- ***Concerns Remain***
 - Adequate staffing and resources for transition from project teams to employees
 - Procedures still in flux until delivery of systems
 - Completion of training in time for EDS



Market Participant status *red* overall largely due to Registration and Qualification status

- *Registration and Qualification* **[red]** - Resource Asset Registration as measured by metric MP11 not occurring as planned. The following QSEs represent resources that have not completed their registration:
 - AEP, Barton Chapel Wind, BP Energy, Austin Energy, J Aron, Tenaska
- *Engagement* **[amber]** - Based on December Market Participant NODAL Engagement Survey Results:
 - ✓ QSEs with Resources Engagement [green]
 - ✓ TDSP, QSEs without Resources and LSEs **[amber]** - due to Engagement, meaning that MPs in these segments have identified critical program areas where they feel they are behind.
 - ✓ QSEs without Resources category improved from [red] to **[amber]**.
 - ✓ 21 QSEs **[red]** - due to Engagement. Most are new entities being ramped into the program, but the following provided no Survey response:
 - Airtricity, Chain Lakes, Citadel, Clearview, DTE Energy Trading, Duke Energy Ohio, Econnergy, JPMorgan Ventures Energy, Juice Energy, Kansas City Power and Light, Liberty Power / LPT, Mirant, NM Energy, Texpo, Vantage Wind, Vega Resources, WCW International
- *Training* [green] - First pass of self-reported Training is [green] for all segments except LSEs
- *Connectivity and Telemetry* [green] - Connectivity metrics complete for most MPs. Outliers are new to the program and need to go through EDS process.

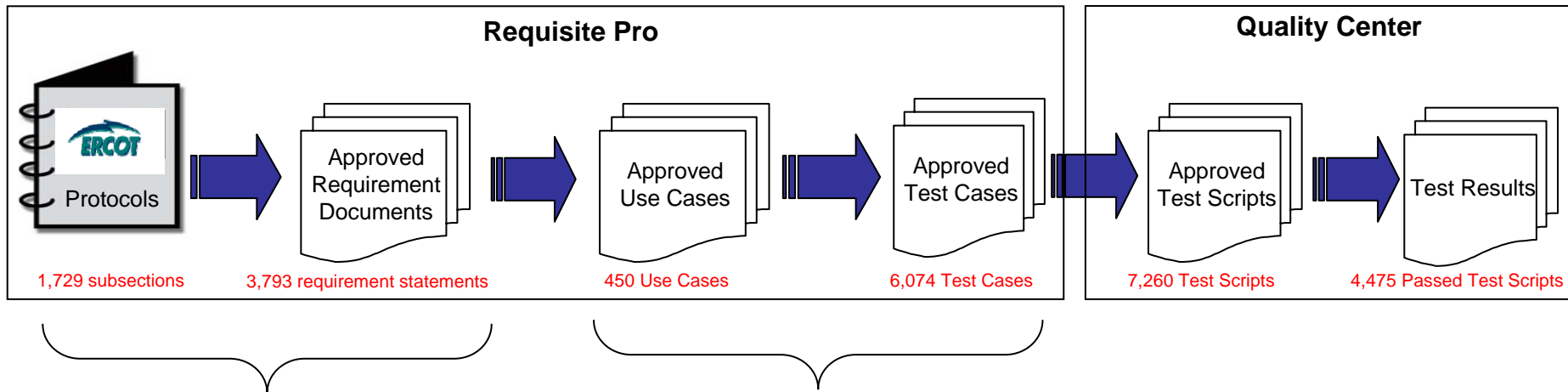
Significant progress being made on many projects...

| Project | Key achievements |
|---------------|--|
| MMS | <ul style="list-style-type: none"> The MMS 2 release has successfully exited FAT testing (includes base functionality for Day-Ahead Market, Hourly Reliability Unit Commitment (HRUC), Daily Reliability Unit Commitment (DRUC), etc.) <i>Implication:</i> Enhances confidence in last major MMS delivery in April. |
| EMS | <ul style="list-style-type: none"> State Estimator convergence is approaching its goal of 97 percent at a 15 Mw/Mvar convergence tolerance. The EMS team is monitoring issues and actively resolving problems to sustain this level of success. Lack of key EMS resources in Sep / Oct time frame is now just being recovered. <i>Implication:</i> Quality is now improving at a satisfactory rate. Vendor / Nodal is taking schedule seriously. |
| MIS-UI | <ul style="list-style-type: none"> The first version of the MMS user interface was released to EDS on 1/21 <i>Implication:</i> The project team delivered this early release to allow for usability testing and MP feedback, which will result in additional releases. This demonstrates movement towards a long standing commitment by ERCOT to provide a positive / efficient / effective user experience for MPs (control rooms, traders, etc.) |
| COMS | <ul style="list-style-type: none"> The COMS team posted prototypes of Day-Ahead Market (DAM) settlements statements on the nodal website. Market participants can view the new statements on the Readiness Center. <i>Implication:</i> MPs can start designing their systems to consume the financial information provided. |
| CRR | <ul style="list-style-type: none"> CRR started market facing EDS activities (EDS 3 R7.1) as scheduled on 2/4; no SEV 1 defects <i>Implication:</i> Market participants can now interact with CRR system (e.g., upload bids and download results); improved confidence in vendor ability to respond |

...but key risks remain

| Risk | Description | Likelihood | Impact on Go Live | Mitigation |
|--|--|------------|-------------------|--|
| EIP (Enterprise Integration Project) | <ul style="list-style-type: none"> Lack of source systems and infrastructure limits ability to validate integration points, impacts re- factoring cycle times and costs | M | M | <ul style="list-style-type: none"> Building interfaces in advance of applications delivery based on available information expecting re-factoring Testing application and integration in available, sub-optimal hardware / software environments |
| CIM (Common Information Model) | <ul style="list-style-type: none"> Uncertainty over ability to integrate CIM models may impact data and system quality and testing | M | H | <ul style="list-style-type: none"> Working with 3 main vendors on multiple iterations of development and validation of CIM import/export Investigating contingency plan to preserve April 1st start of DAM / RUC EDS trials |
| Infrastructure constraints (power, space, cooling) | <ul style="list-style-type: none"> Limits speed and scale of environment build outs, impacts development projects, integration and EDS trials | H | L | <ul style="list-style-type: none"> Prioritizing build out of environments and applications based on EDS schedule Planning active / standby EDS environment (Austin / Taylor) to eliminate short-term ITest need Building test environment in Blue Building server room Removing <u>all</u> non-essential equipment from Austin data center Compressing Nodal deployment footprint as much as possible |
| NMMS | <ul style="list-style-type: none"> Single entry model go-live may go past revised 5/31 date | H | L | <ul style="list-style-type: none"> ERCOT working with vendor to rectify defects/outstanding. issues Single entry model must be in place by July to verify go-live model |

Quality: Focus to date has been on requirements coverage of the Protocols, but traceability requires significant improvement



- Extensive coverage of the protocols in the approved requirements. (some in draft form, some not needed)
- Relatively low chance of surprises in not conforming with protocols
- Two projects need to revisit requirements (NMMS and EDW)
- At this point, only 2 “information only reports” need to be deferred to post go-live (because of MMS resource constraints)

- Documents are still being drafted and submitted for approval by the projects
- Renewed emphasis moving forward on software delivery and documentation; projects are substantially behind in providing documentation

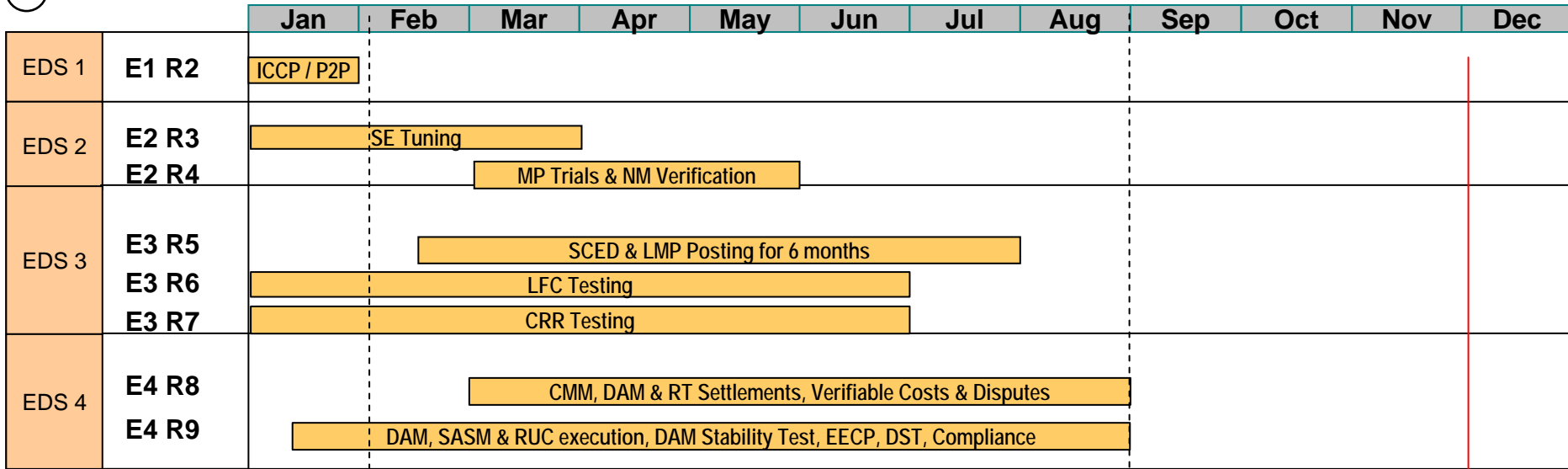
Assessment

- **Concerns**
 - Software quality needs improvement
 - Excessive high severity defects (66 Sev 1s and 2s)
 - Lengthy vendor defect turnaround cycle
 - Incomplete testing documentation
- **Mitigation**
 - More effective vendor management; increased emphasis on defect resolution

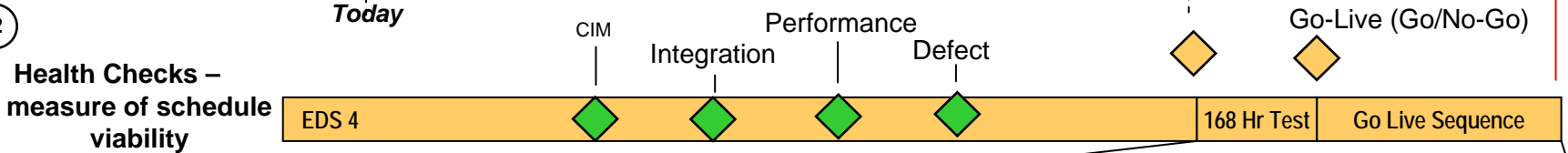
Schedule: Summary - PRR 727's market notice timeline requires teamwork from all stakeholders to achieve Go-Live date

Still targeting a 12/1/08 Go-Live date; critical path runs through EDS activities

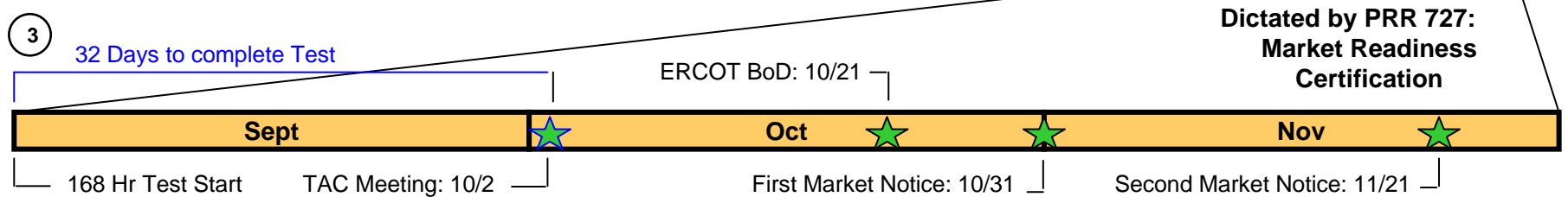
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- ***Prior to September, nearly all systems and their integration will be independently checked and tested.***
- ***The “168 Hour Test” in September will be the final Qualification test with nearly all functionality*. It will be conducted by the intended users of these systems.***

ERCOT involvement:

- Staff from ERCOT operations (business and IT) will execute the test
- Staffing will be sufficient to meet business operations and the IT production service level agreement
- Management of daily activities will occur through the ERCOT chain of command
- All defined daily tasks for Nodal will be executed
- The Nodal Program will setup a daily conference call with all MPs to go through issues
- The Nodal Program will only coordinate issue resolution if significant errors occur

Market Participant involvement:

- Staff from the MPs operations (business and IT) will execute the test
- Staffing will be sufficient to meet business operations and the production service level agreement
- Management of daily activities will occur through the MP's normal operational chain of command
- All protocol defined interactions between MPs and ERCOT will be performed according to the timeline
- Data submissions will reasonably resemble post Go-live submissions
- ICCP must be continually updated by the MPs
- The 168 Hour Test is the final Qualification test and all MPs are required to participate during the entire test

* Annual CRR auctions will be validated prior to the 168 Hour test. Some data reports/extracts will be delivered after the 168 Hour Test.

Most Nodal projects have now frozen changes to functionality required for the 168 Hour Test (9/1/2008) and subsequent Go-Live

Status:

- NMMS, EMS, CRR, COMS and MMS are in final delivery stages
- There is some tolerance for changes relating to reports i.e. EDW (within certain constraints affecting source systems) and changes will be needed to correct discovered defects in trials or acceptance testing.

Deferred items are items that cannot make the 168 Hour Test window, including:

- Items to be implemented before go-live, but after 168 Hour Test
- Items to be developed by Nodal before go-live, ready for subsequent production release
- Items to be deferred to business as usual prioritization (PPL process)

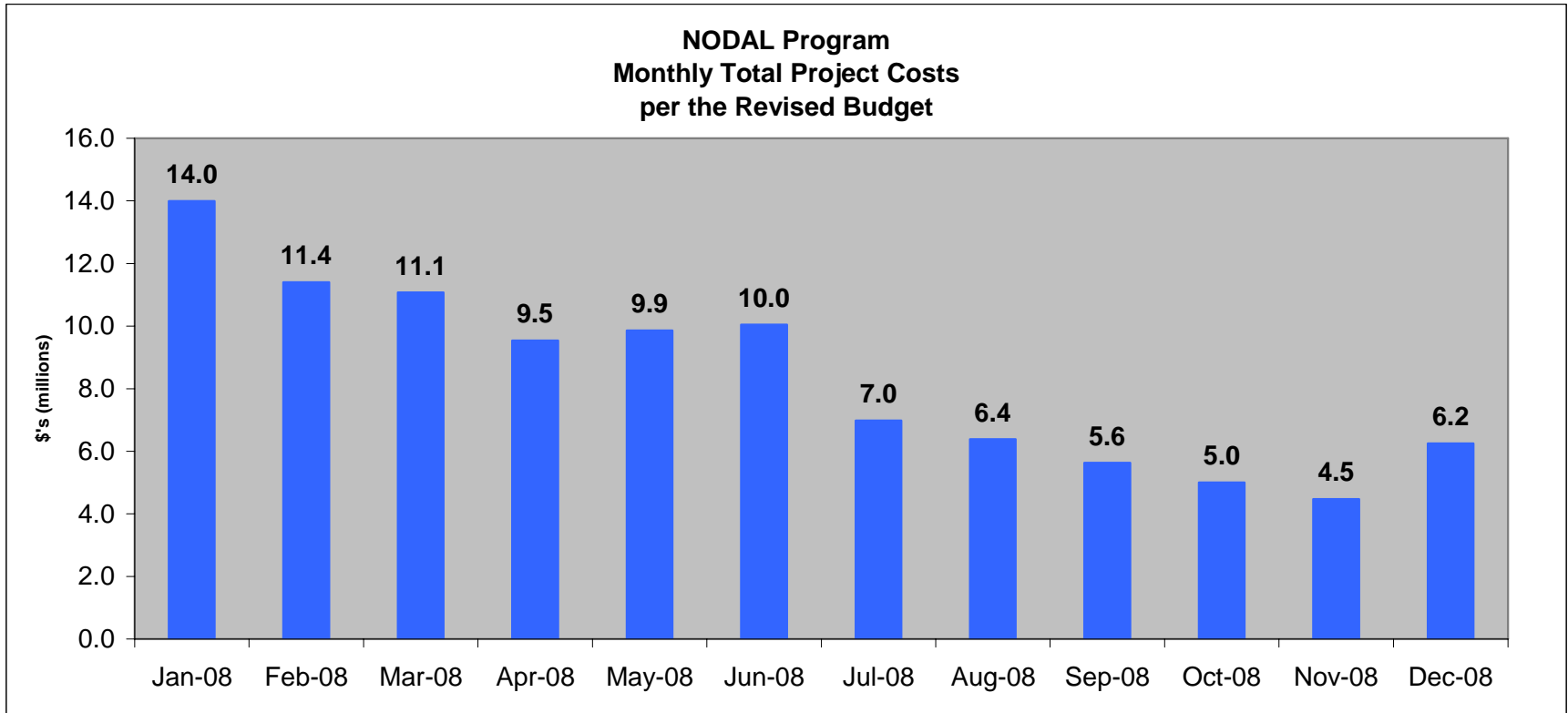
Implications on additional NPRRs

- Only changes with a systems impact deemed essential for the correct operation of the Nodal market should be considered – ***in the knowledge that their introduction may delay Go-Live***
- The process of impact analysis of all new NPRRs (including those with no system impacts) diverts Nodal Subject Matter Experts from other critical tasks
- Non-essential changes should be tabled or will be boxed in the Protocols

EAC Revised Budget and Forecast remain constant; preliminary December actuals over budget

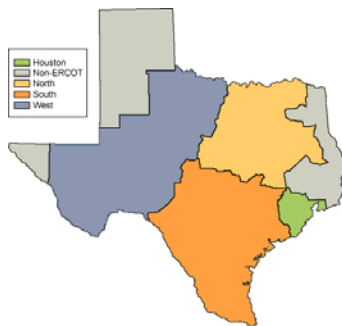
Financial year-end
updates and
estimates at
completion (EACs)
to be provided

Nodal program costs reflect concentrated activity through mid-year, then trending downward toward transition



Note: Costs exclude contingency and financing charges; spike in December expenditures reflects vendor payments (~\$4 million); total spending in 2009 is \$2.4 million of which \$2.3 million occurs in January

Questions ??



ERCOT Nodal Market Transition

