



# Nodal Program Update

Mike Cleary

Sr. VP and Chief Technology Officer

ERCOT Board of Directors

20 April 2010

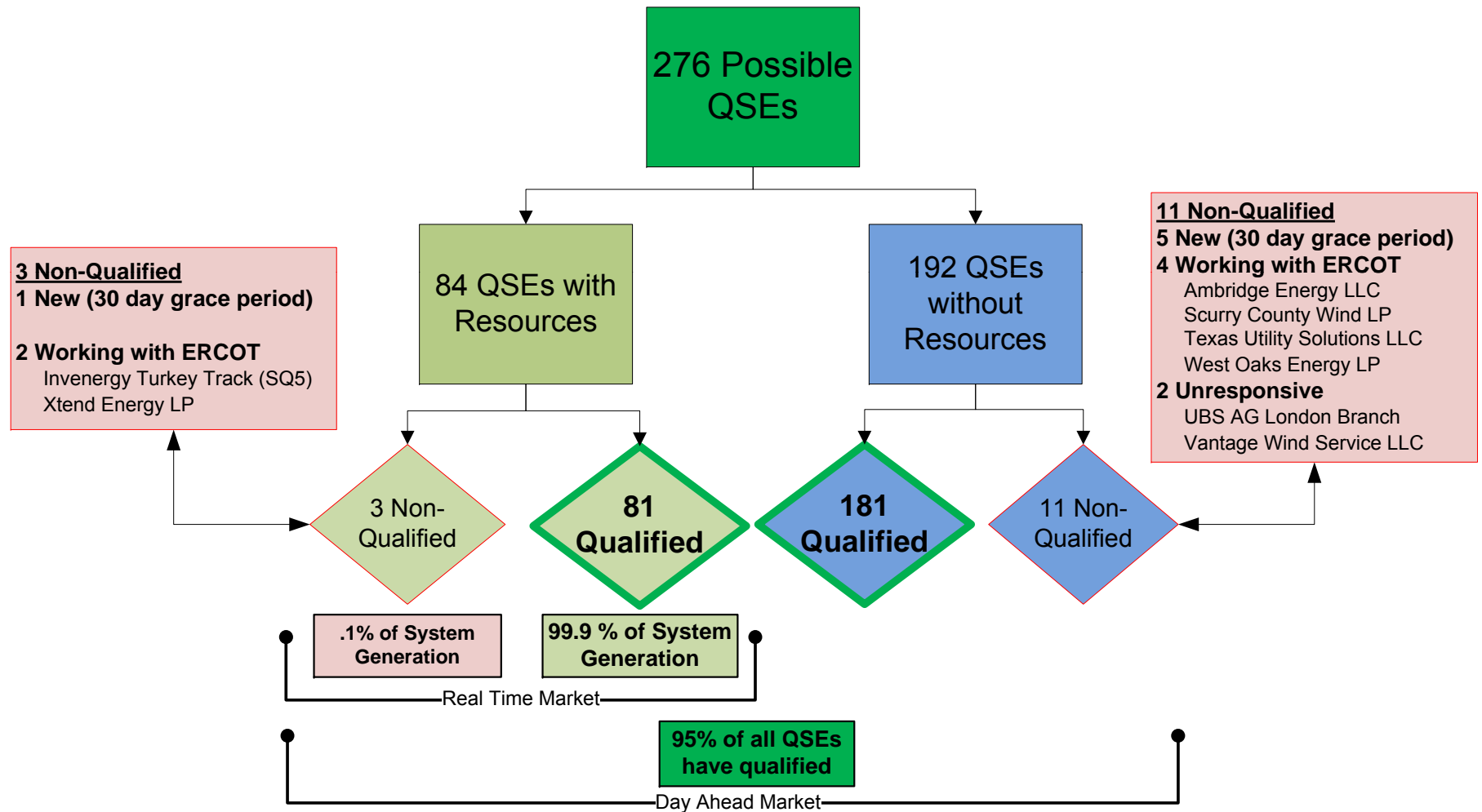
# Agenda

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

# 225 Days to Go-Live

10 Days until Phase 5: Full Functionality  
0 Items Impacting Go-Live Date



# 225 Days to Go-Live

## 10 Days until Phase 5: Full Functionality Market Quality Testing and Operational Readiness

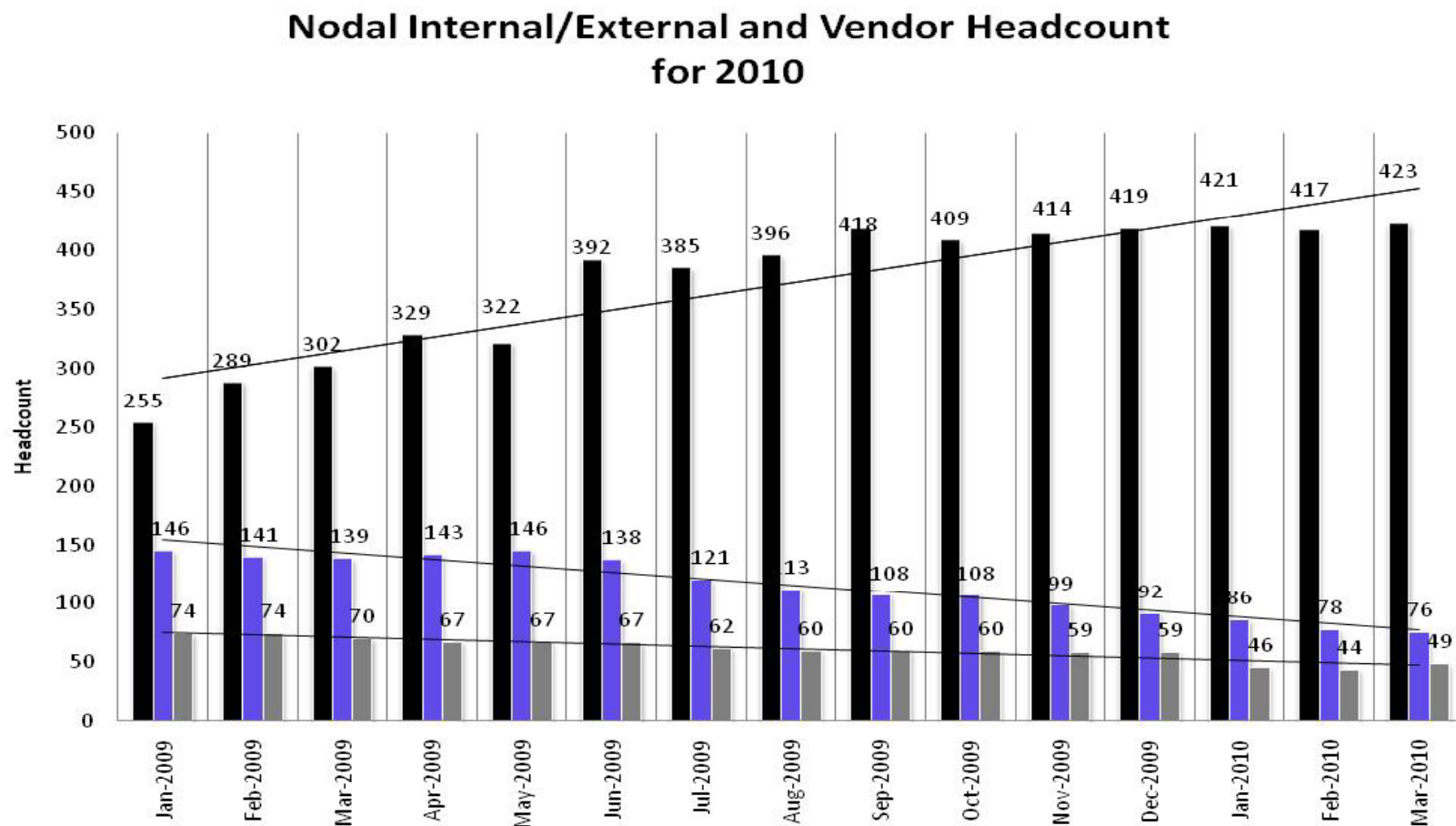
### Achievements within Market Trials:

- Market Trials has been running for 10 weeks
- Market Question topics have shifted from qualifications and participation questions to stability and operational inquiries
- Phase 2.1: Market Connectivity
  - Real Time / Day Ahead
- Qualifications
  - 95% of the QSEs have qualified
  - 99% of network model has been validated
- CRR
  - Two monthly CRR auctions have been run and invoiced
  - May auction completed on Friday, April 16<sup>th</sup>
- Phase 3.0: Real Time Markets
  - Six month LMP analysis started on March 1<sup>st</sup>
  - The \$2,250 price cap has only been reached a few times since 03/04/10
- Phase 4.0: DAM / RUC
  - Five DAM runs have been completed
  - Running twice a week
  - Strong participation from the Market Participants (179 QSEs on Thursday, April 15<sup>th</sup> )

### Upcoming Milestones for Market Trials:

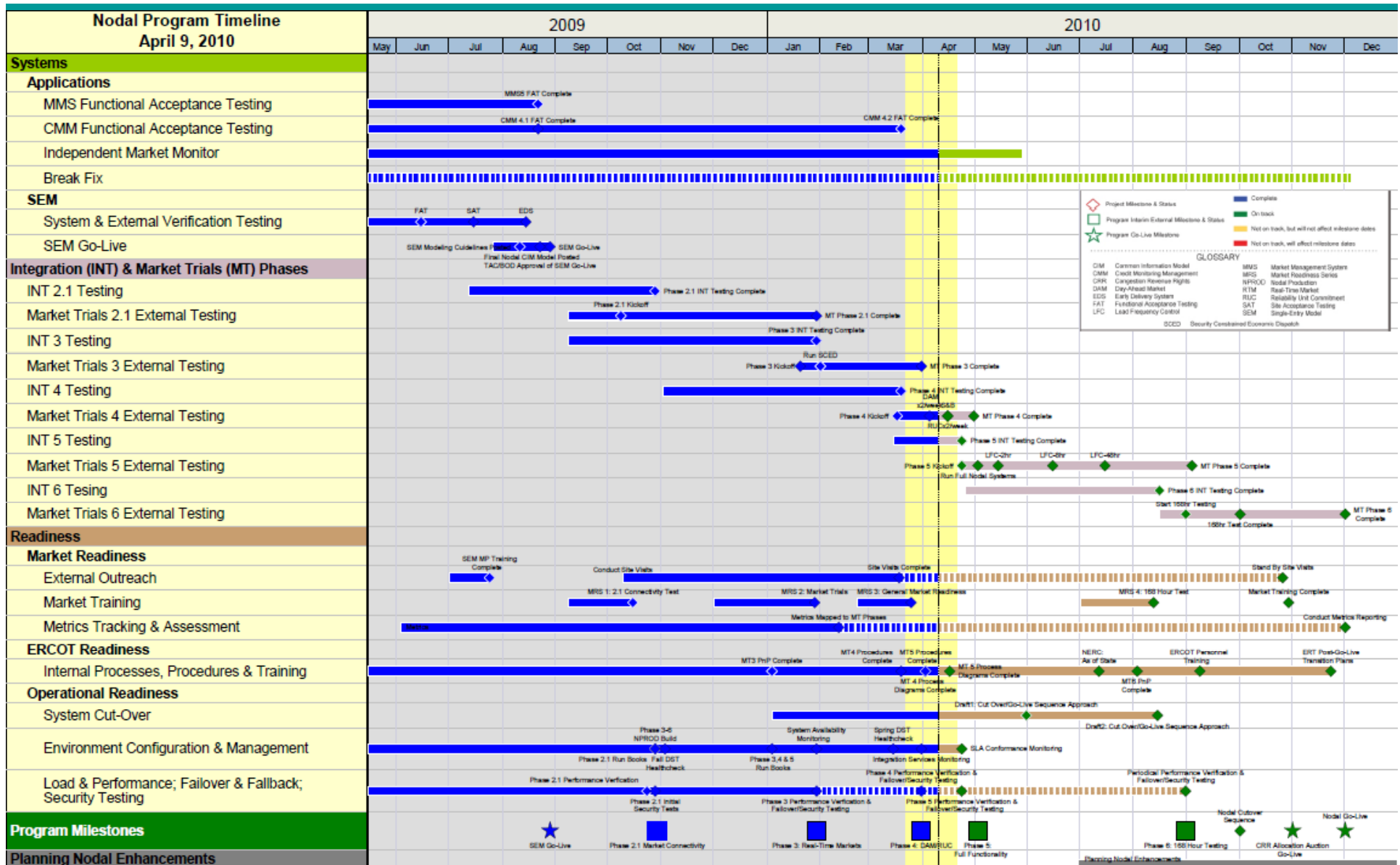
- HRUC
- DAM Settlement
- Reporting support for DAM/RUC/SAS
- Phase 5: Full Functionality
- CMM Module
- DAM / RUC 5x/wk
- 168 HR Test
- System Cut-Over

# Nodal Internal/External and Vendor Headcount 2010



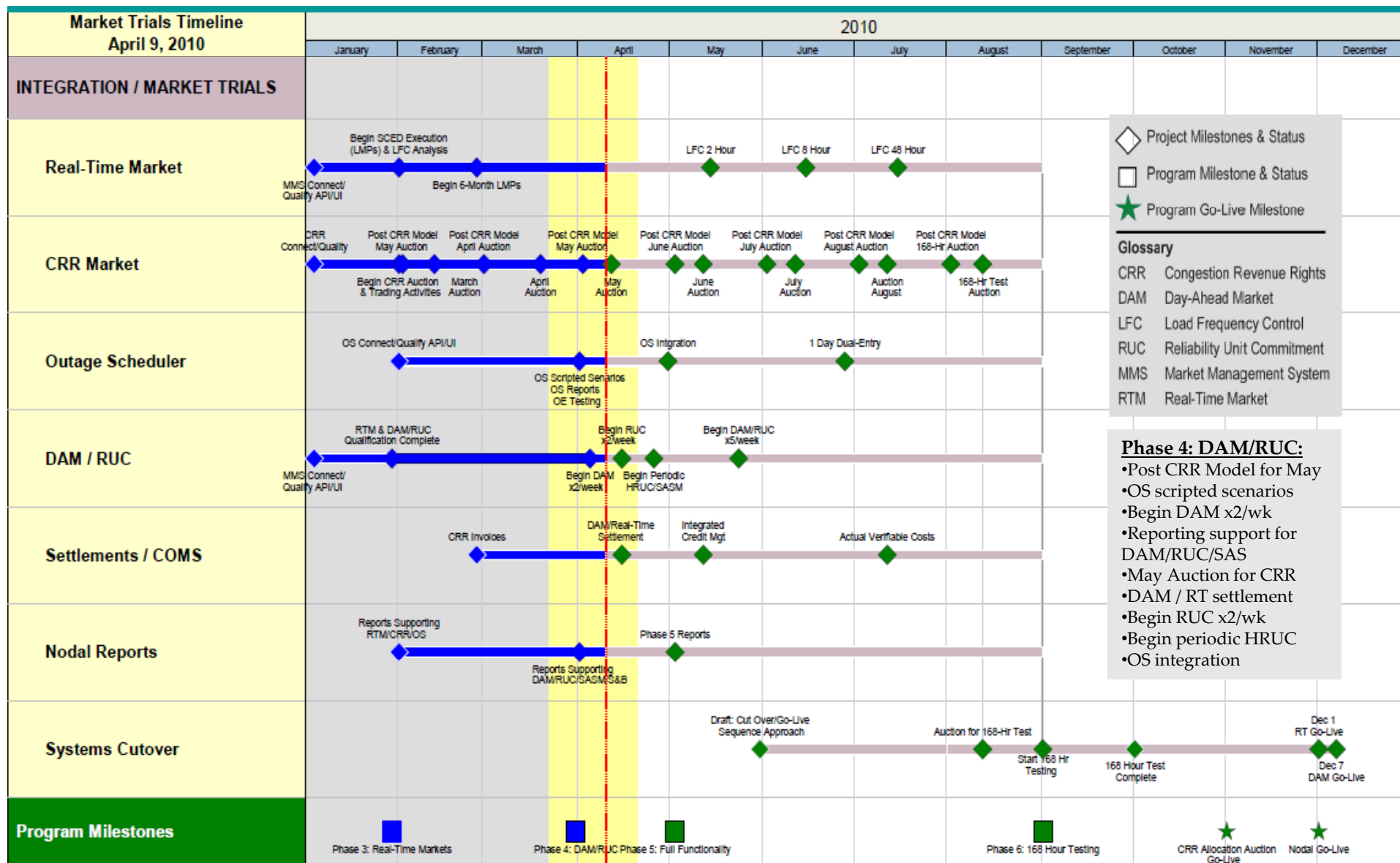
	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10
■ ERCOT Employees	255	289	302	329	322	392	385	396	418	409	414	419	421	417	423
■ Contingent Labor	146	141	139	143	146	138	121	113	108	108	99	92	86	78	76
■ Vendor Labor	74	74	70	67	67	67	62	60	60	60	59	59	46	44	49

# Integrated Nodal Timeline – Go-Live December 1<sup>st</sup>, 2010



20 April 2010

# 2010 Market Trials Timeline – Go-Live December 1<sup>st</sup>, 2010



# 225 Days to Go-Live

## DAM Summary

- **Market Trials 4.0: DAM/RUC:**
  - Thursday April 1<sup>st</sup>, for Operating Day Friday April 2<sup>nd</sup>
    - 112 QSEs participated in the first DAM / 100% Self Arranged
    - MWs ranged from 21,000 - 24,800/Hr
    - Prices ranged from \$24.60 - \$36.06/Hr
  - Tuesday April 6<sup>th</sup>, for Operating Day Wednesday April 7<sup>th</sup>
    - 80% Forecasted Load / 50% Self-Arranged
    - 150 QSEs participated in the DAM
    - MWs ranged from 19,738 - 22,860/Hr
    - Prices ranged from \$21.79 - \$29.00/Hr
  - Thursday April 8<sup>th</sup>, for Operating Day Friday April 9<sup>th</sup>
    - 120% Forecasted Load
    - 153 QSEs participated in the DAM
    - MWs ranged from 24,723 – 29,595/Hr
    - Prices ranged from \$25.24 - \$34.54/Hr



# 225 Days to Go-Live

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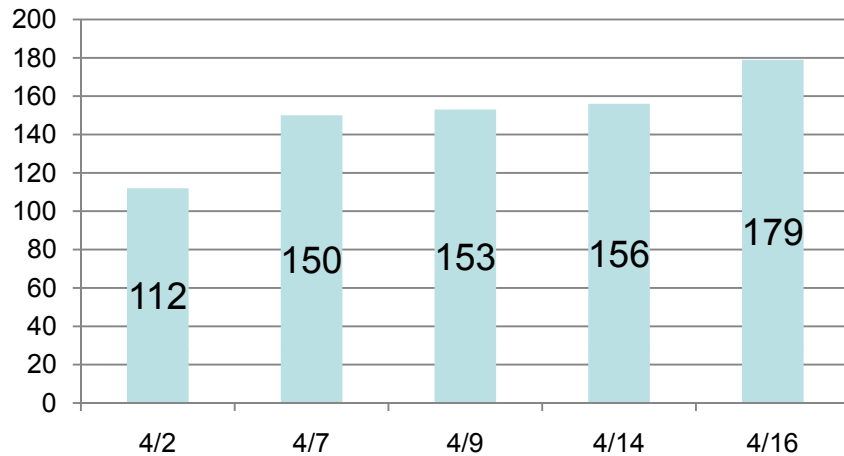
## DAM Summary

- **Market Trials 4.0: DAM/RUC:**
  - Tuesday April 13<sup>th</sup> for Operating Day Wednesday April 14<sup>th</sup>
    - 80% Forecasted Load / 50% Self-Arranged
    - 156 QSEs participated in the first DAM
    - MWs ranged from 15,709 – 20,445/Hr
    - Prices ranged from \$21.67 - \$32.42/Hr
  - Thursday April 15<sup>th</sup>, for Operating Day Friday April 16<sup>th</sup>
    - 120% Forecasted Load / 50% Self-Arranged
    - 179 QSEs participated in the DAM
    - MWs ranged from 24,976 – 30,446/Hr
    - Prices ranged from \$20.83 - \$36.45/Hr

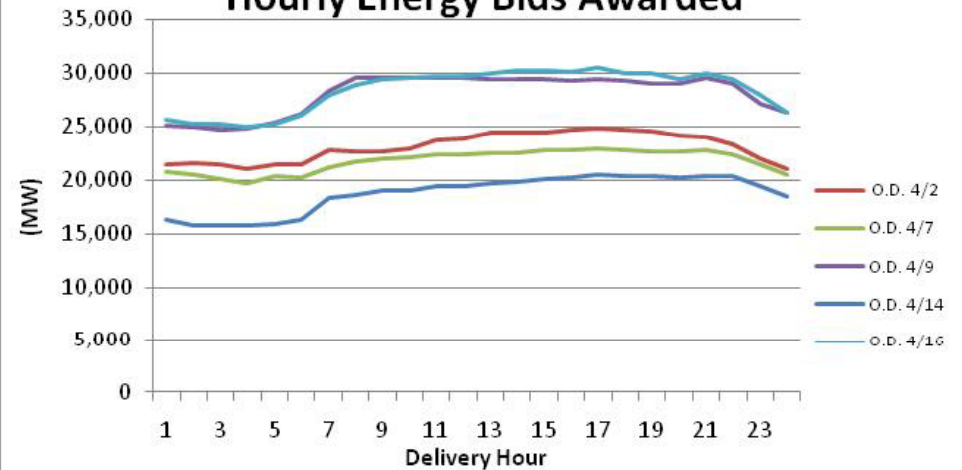
# 225 Days to Go-Live

## DAM Summary

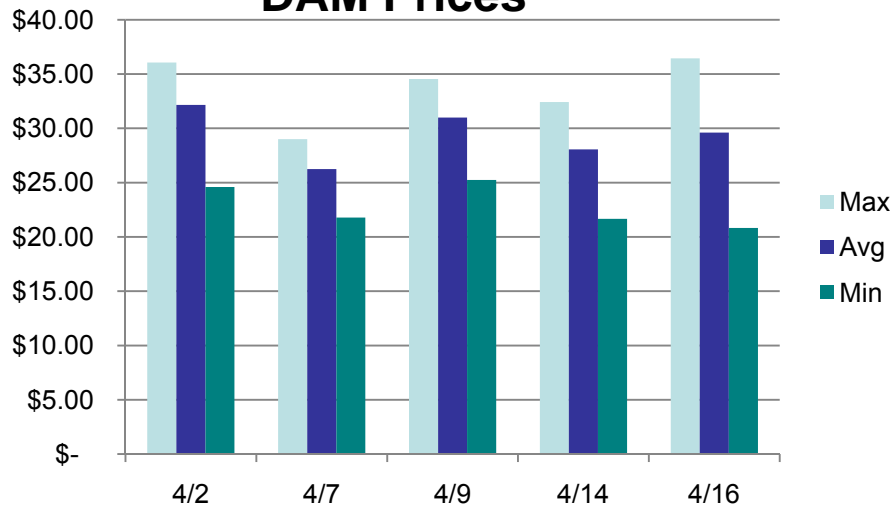
### QSE Participation



### Hourly Energy Bids Awarded



### DAM Prices



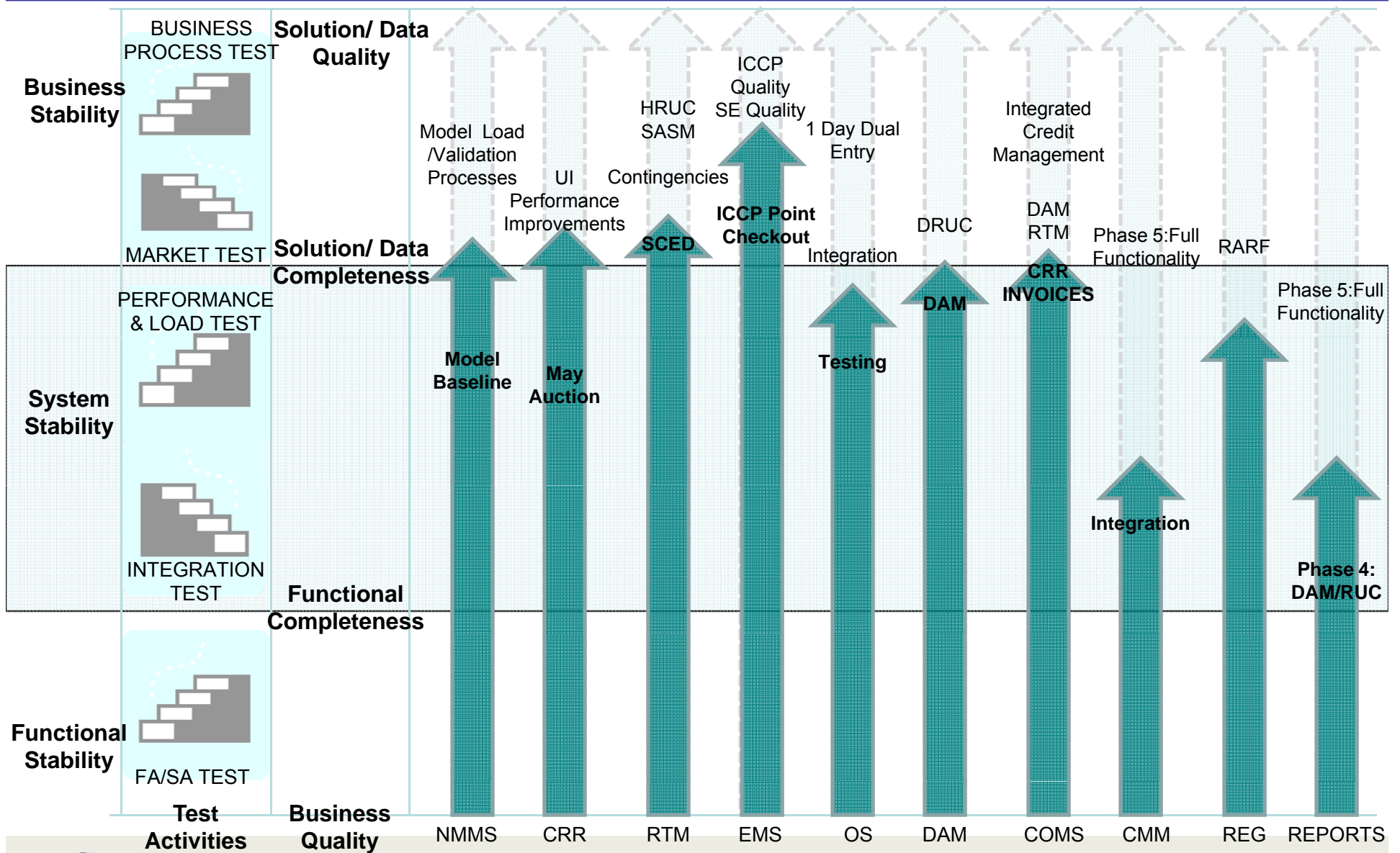
### Issues with DAM:

- Encountered a known issue where MMS cannot handle multiple Load Resources mapped to a single Load point in the model (4/13, 4/15)
- MMS UI availability / performance (4/1, 4/6)
- OS UI performance issues (4/6)

# Market Trials Phase 4 – DAM: Schedule/Key Dates

	Week 1 4/1/2010	Week 2 4/6/2010 & 4/8/2010	Week 3 4/13/2010 & 4/15/2010	Week 4 4/20/2010 & 4/22/2010	Week 5 4/27/2010 & 4/29/2010
<b>DAM / RUC / SASM</b>					
<b>Objective</b>	Connectivity / Execution	AS co-optimization	Network constrained solution	DAM + DRUC	DAM + DRUC + HRUC + SASM
<b>Network Constraints</b>	None	None	Included	Included	Included
<b>Self-Arranged AS Requested</b>	100%	50%	50%	Actual	Actual
<b>Load Bid MW Requested</b>	80/120% forecasted load	80/120% forecasted load	80/120% forecasted load	80/120% forecasted load	80/120% forecasted load
<b>Virtual Bids / Offers</b>	Up to 5 transactions totaling 50 MW/QSE/hr	Up to 5 transactions totaling 50 MW/QSE/hr	Up to 10 transactions totaling 100 MW/QSE/hr	Up to 10 transactions/ QSE/hr	Up to 10 transactions/QSE/hr
<b>PTP Obligations</b>	Up to 5 bids totaling 50 MW/QSE/hr	Up to 5 bids totaling 50 MW/QSE/hr	None	Up to 5 bids totaling 50 MW/QSE/hr	Up to 5 bids totaling 50 MW/QSE/hr (unless the bid represents QSE's load)
<b>NOIE CRR Offers</b>	Allocated CRRs only	Allocated CRRs only	None	Allocated CRRs only	Allocated CRRs only
<b>DRUC</b>	None	None	DRUC after each DAM	DRUC after each DAM	DRUC after each DAM
<b>HRUC</b>	None	None	None	None	Limited
<b>SASM</b>	None	None	None	None	Yes

# Go-Live



# Nodal Program Risks & Issues

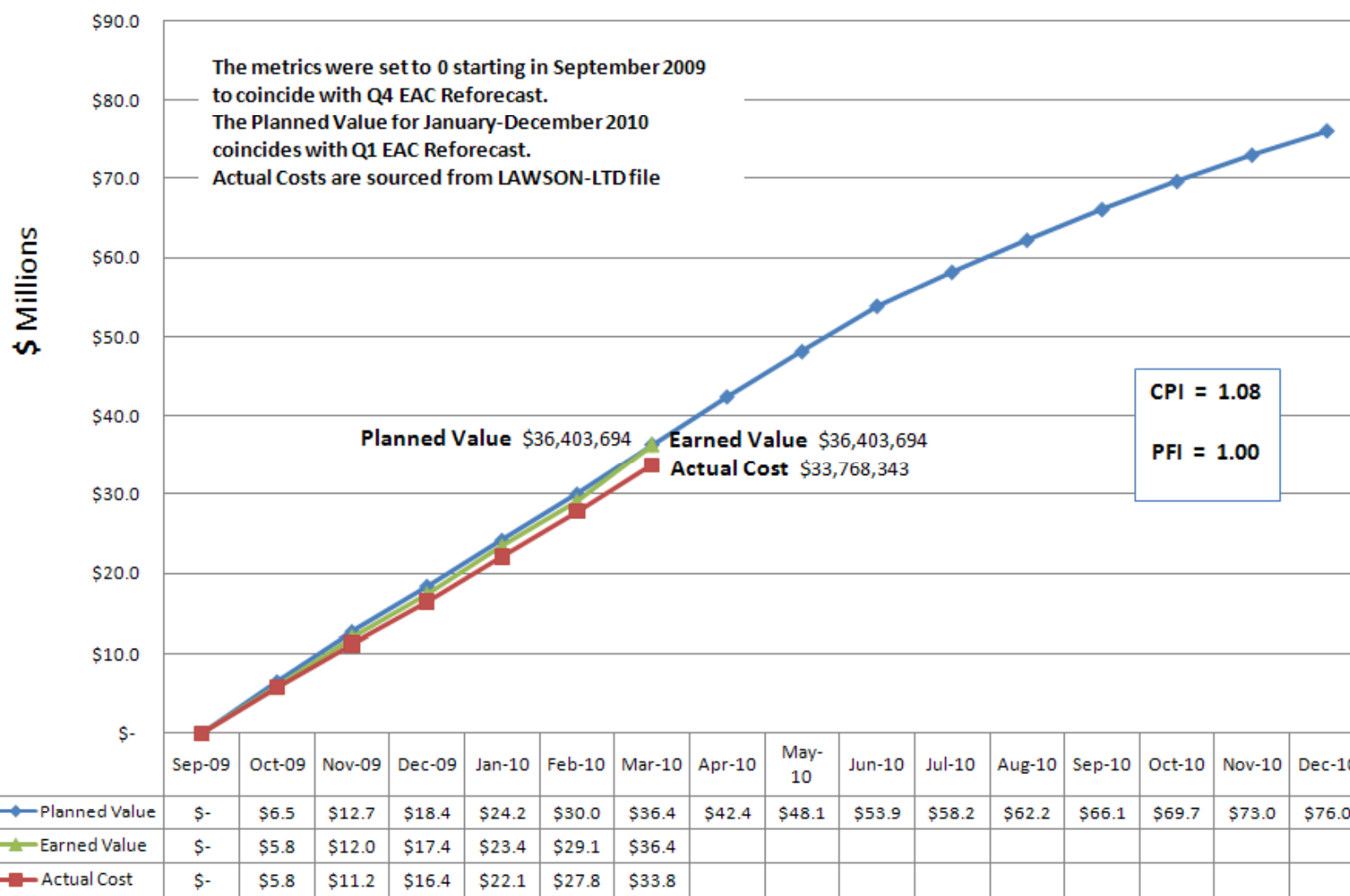
Risk/Issue	Impacted Milestone	Target	Category	Probability	Severity	Status
<b>Market Interaction Operating Level Agreements (OLAs)</b> <i>Need to determine operating level agreements associated with market interactions to assist ERCOT in establishing operational thresholds:</i>  <i>-Network Model Management</i>  <i>-DAM Sizing</i>  <i>-CRR sizing</i>  <i>-Reporting</i>	Program	April/ May 2010	Scope / Budget	High	Low	<ul style="list-style-type: none"> <li>• Phase 4 OLA definitions complete</li> <li>• Phase 5 OLA definitions drafted, pending approval</li> <li>• Regular updates to NATF and NDSWG</li> <li>• 10,000 / 10,000 submissions achieved</li> <li>• 200,000 submissions total; NATF is weighing options for possible NPRR</li> <li>• Reports continue to become available as the Market Trials activities ramp-up. Performance monitoring continues</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>



# Earned Value for the Nodal Program

## Nodal Program

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



# Participant Readiness Touch Points

2010				
	April	May	June	July
<b>Meetings</b>	<ul style="list-style-type: none"> <li>• NATF 4/6</li> </ul>	<ul style="list-style-type: none"> <li>• NATF 5/4</li> </ul>	<ul style="list-style-type: none"> <li>• NATF 6/1 and 6/29</li> </ul>	<ul style="list-style-type: none"> <li>• TBD</li> </ul>
<b>Training</b>	<ul style="list-style-type: none"> <li>• Nodal 101</li> <li>• Trans 101</li> <li>• Generation 101, 201</li> <li>• CRR – instructor-led</li> <li>• NMMS</li> <li>• Economics of LMP</li> <li>• Combined Cycle Workshop (4/28)</li> </ul>	<ul style="list-style-type: none"> <li>• Nodal 101</li> <li>• Trans 101</li> <li>• Generation 101, 201</li> <li>• CRR – instructor-led</li> <li>• NMMS</li> <li>• Economics of LMP</li> </ul>	<ul style="list-style-type: none"> <li>• Nodal 101</li> <li>• LSE 201</li> <li>• Generation 101, 201</li> <li>• Economics of LMP</li> <li>• Basic Training Program</li> <li>• Ancillary Service Workshop (<i>tentative</i>)</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> </ul>
<b>Outreach</b>	<ul style="list-style-type: none"> <li>• Standby site visits</li> <li>• TSP Validation</li> <li>• Bi-weekly TSP calls</li> <li>• Phase 4 metrics launch</li> </ul>	<ul style="list-style-type: none"> <li>• Standby site visits</li> <li>• Metrics monitoring</li> <li>• Bi-weekly TSP calls</li> <li>• MRS #4 Cutover (5/25)</li> </ul>	<ul style="list-style-type: none"> <li>• Repeat Retail Workshop (Dallas) – <i>tentative</i></li> <li>• Phase 5 Metrics launch</li> </ul>	<ul style="list-style-type: none"> <li>• Qualification assessment (MP17)</li> <li>• Standby site visits</li> </ul>
<b>Market trials</b>	<ul style="list-style-type: none"> <li>• Weekly Trials calls</li> <li>• Phase 4 Market Trials initiates</li> <li>• Phase 5 Handbooks                             <ul style="list-style-type: none"> <li>• <i>Updates to prior handbooks</i></li> <li>• <i>Credit</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Weekly Trials calls</li> <li>• 2 hr system-wide LFC test</li> <li>• Phase 5 Market Trials initiates</li> </ul>	<ul style="list-style-type: none"> <li>• Weekly Trials calls</li> <li>• 8 hr system-wide LFC test</li> <li>• Full market trials functionality</li> </ul>	<ul style="list-style-type: none"> <li>• Weekly Trials calls</li> <li>• 48 hr system-wide LFC test</li> <li>• Verifiable costs in execution</li> </ul>

## Next 60-days of Classes and Settlement Workshops

Course	Start Date	Location
Basic Training Program	April 19	Suez Energy (Houston)
Generation 201	April 20	Calpine (Houston)
ERCOT Nodal 101	April 26	Tenaska Power Services (Dallas)
Credit Management Workshop	April 26	ERCOT Met Center (Austin)
Congestion Revenue Rights	April 27	Hilton Garden Inn (Dallas)
Combined Cycle Workshop	April 28	ERCOT Met Center (Austin)
Credit Management Workshop	May 3	ERCOT Met Center (Austin)
Economics of LMP	May 10	Energy Plaza (Dallas)
ERCOT Nodal 101	May 10	ERCOT Met Center (Austin)
Congestion Revenue Rights	May 11	ERCOT Met Center (Austin)

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



## Next 60-days of Classes and Settlement Workshops (continued)

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Course	Start Date	Location
Transmission 101	May 18	CPS Energy (San Antonio)
Network Model Management	May 20	CPS Energy (San Antonio)
Basic Training Program	May 24	Energy Plaza (Dallas)
Generation 101	June 8	LCRA (Austin)
Generation 201	June 17	LCRA (Austin)
Basic Training Program	June 21	ERCOT Met Center (Austin)
Transmission 101	July 13	CenterPoint Energy (Houston)

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

# Nodal Outreach Program Overview Statistics

Statistics were compiled after the completion of the Outreach Site Visits. Below are statistics representing the type of Market Participants visited and their locations:

1	Total Number of Market Participant Site Visits	35
2	Total Number of Market Participants participating in Outreach, including Wind, and Retail Panels	67
3	Total number of attendees	681
4	Percentage of total generation represented by QSEs participating in site visits	96.14%
5	Percentage of total load represented by QSEs participating in site visits	91.96%
6	Total number of states visited	11 states
7	Total regions visited	Austin – 4 Houston (metro) – 11 Dallas (metro) – 5 San Antonio – 1 East Coast – 5 West Coast – 1 Midwest – 3 Florida – 1 Texas (outside metro areas) - 4

# Nodal Outreach Program Overview Statistics

Below are the percentages of each topic selected:

Topics		Percentage of Each Topic Selected
1	Nodal Program Update (mandatory topic)	Mandatory
2	Day-Ahead Market Implementation	100%
3	Real Time Operations Processes & Systems	94.29%
4	Reliability Unit Commitment Implementation	82.86%
5	Nodal Settlements and Billing Processes	74.29%
6	Congestion Revenue Rights Auction Implementation	65.71%
7	Reports and Data Extracts	45.71%
8	Telemetry & Load Frequency Control	42.86%
9	Readiness Center and Scorecard	14.29%
10	Credit Monitoring and Management (topic was made available on February 9, 2010)	11.43%
11	Wind Presentation and Discussion	One-time presentation
12	Retail Presentation and Discussion	One-time presentation

# Nodal Outreach Program Overview Statistics

- Market participants received an evaluation to complete
- Each question was given a response regarding the meeting objectives, based on a Likert scale:

4 – Strongly Agree

3 – Agree

2 – Disagree

1 – Strongly Disagree

*“Provided a great and much needed tool for ERCOT to interface with MPs to answer questions and form needed task lists. Thank all of you for this opportunity.”*

*“The program was not geared toward a QSE like [us], but rather the generation community”*

*“Today’s presentation and Q&A was a great eye opener. We have done a lot of work in preparing for Nodal, but today’s presentation clearly shows the gaps between where we are and where we need to be throughout 2010.”*

Topics	Average Response*
Readiness Center and Scorecard	3.68
Nodal Settlements and Billing Processes	3.65
Nodal Program Update	3.63
Wind Presentation and Discussion (one-time presentation)	3.63
Telemetry & Load Frequency Control	3.61
Reports and Data Extracts	3.61
Reliability Unit Commitment Implementation	3.57
Day-Ahead Market Implementation	3.56
Congestion Revenue Rights Auction Implementation	3.56
Goals and purpose of Outreach meeting are appropriate	3.55
Real Time Operations Processes & Systems	3.55
Credit Monitoring and Management	3.24
Retail Presentation and Discussion (one-time presentation)	3.12

\* Not all participants returned evaluations or answered every question.

# Active Market Participant Metrics

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
MP3 Market Submissions Connectivity Qualification	Green	QSERS	Generation Ratio Share	99.0%	1.0%	0.0%	0.0%	Successful submission of RT and DAM transactions	81/84 QSERS Qualified (includes QSEs with Load Resources).
	Amber	QSEs	Even weighting	94.3%	2.1%	1.0%	2.6%		181/192 QSEs qualified. Below 95% threshold for overall GREEN.
MP6 Telemetry Compliance with Nodal Protocols 3.10.7.5	Green	QSERS	Generation Ratio Share	99.9%	0.1%	0.0%	0.0%	Expected State Estimator telemetry submitted.	78/79 QSERS completed. 3501/3502 SE points provided (99.6%).
	Green	QSERS	Generation Ratio Share	99.9%	0.0%	0.1%	0.0%	Expected SCED telemetry submitted.	78/79 QSERS completed. 7621/7629 SCED points provided (99.1%).
	Green/White only	TSPs	Ownership Ratio Share	0.3%	0.0%	0.0%	99.7%	Expected TSP telemetry per ICCP Handbook submitted. No schedule for AMBER/RED scores	1/17 TSPs completed, all other TSPs are in review by ERCOT. ~94% TSP CB and LD points provided.
MP11 Resource Registration	Green	REs	Registered MW Capacity Ratio Share	97.7%	1.82%	.5%	0.0%	Decision Making Authority form submitted, and GENMAP validated	153/157 Resources completed.

# Active Market Participant Metrics

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
MP14-C TSP Model Validation	Green	TSPs	Ownership Ratio Share	99.4%	.6%	0.0%	0.0%	Network Model data validated by TSP	17/28 TSPs have submitted model validation e-mails to ERCOT.
MP15-A Real-time Market Participation	Green	QSERs	Generation Ratio Share	99.0%	1.0%	0.0%	0.0%	Weekly average of daily SCED submissions	75/79 QSERs above 95% weekly average for SCED submissions.
MP15-B CRR Connectivity Qualification	Red	CRRAHs	Even weighting	92.8%	0.0%	7.2%	0.0	Successful submission CRR transactions	64/69 CRRAHs qualified. Greater than 5% overall RED.
MP16 DAM Participation	Green/White Only	QSERs	Generation Ratio Share	88%	0.0%	0.0%	12.0%	Participation in 50% of the Day-Ahead Market runs	57/84 QSERs with adequate participation.
	Green/White Only	QSEs	Even Weighting	53.4%	0.0%	0.0%	46.4%		103 out of 192 QSEs with adequate participation.
MP20 Outage Scheduler Connectivity Qualification	Green	QSERs	Generation Ratio Share	98.1%	0.0%	0.0%	1.9%	Successful submission of OS transactions. AMBER/RED scores light up 4/13/2010 after OS window closes	74/78 QSERS qualified.
	Green	TSPs	Ownership Ratio Share	99.8%	0%	0%	.02%		18/25 TSPs qualified.

# Active Market Participant Metrics

Metric Name	Current Score	Applies to	Weight	Green %	Yellow %	Red %	Not Scored %	Primary Criteria	Notes
CRR3 Operation of CRR Auctions and Allocations	Green/White only	CRRAHs	Even weighting	68.1%	0%	0%	31.9%	Participation in at least one of the last two auctions or allocations. AMBER/RED scores light up 5/5/2010 after May bid window closes	49/70 CRRAHs with adequate participation in March or April Auctions or Allocations.

## **MP15-B CRR Connectivity Qualification – RED entities**

Ambridge Energy LLC – No update

Credit Suisse Energy LLC – Aware that MP15-B is RED, but wants to keep CRRAH account active

Merrill Lynch Commodities Inc – Deregistering \*

PEPCO Energy Services Inc – Deregistering \*

Velocity American Energy Master I LP – Deregistering \*

\* CRRAH will remain RED until Notice of Change (NCI) to deregister is received by ERCOT

# Active ERCOT Metrics

Metric Name	Current Score	Applies to	Percentage (if applicable)	Primary Criteria	Notes
E1 ERCOT Staff Completes Training	Green	ERCOT	100%	Training plans must be adhered to for highly impacted departments	15 out of 15 highly impacted departments are up to date with their training plans.
E9 Develop Nodal Procedures	Green	ERCOT	100%	Procedures developed 1 month prior an to the appropriate Market Trials Phase and/or procedures exercised in the current Market Trials phase.	All MT4 and MT5 are now developed and the MT3 procedures were exercised during MT3 as scheduled. MT4 procedures on target to be exercised by the end of MT4.
MO4 Verify SCED Execution Quality	Green	ERCOT	N/A	All of the successful SCED executions passed the post-execution price validations for the given reporting period.	For the 3/23 – 4/5 period, there were 4,048 * SCED intervals with no price validation error flags.
MO5 Generate 6 Months of LMPs	Green	ERCOT	95.9%	Greater than 95% of the SCED executions produced and posted LMPs for the given reporting period.	For the 3/23 – 4/5 period, 3,887 out of 4,052 SCED runs with LMP posted correctly.

\* Discrepancy between SCED and PVT runs due to missing input data during PVT testing.







# Monthly Financial Review

Don Jefferis

Interim Director – Nodal Financial Management Office

20 April 2010

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# Current Monthly Financials



# Financial Review – March 2010 Performance

## Approved Forecast vs. Actual

Line	Cost Summary	Forecast	Actual	Variance Fav./Unfav.)	Forecast Cumulative Variance <sup>1</sup>
1	Internal Labor Costs	\$ 2.6	\$ 2.7	\$ (0.1)	\$ (0.4)
2	Backfill Labor Costs	0.2	0.1	0.1	0.3
3	External Resource Costs	3.6	3.1	0.5	0.6
4	Software & Software Maintenance	0.3	0.2	0.1	(1.6)
5	Hardware & Hardware Maintenance	0.3	0.1	0.2	0.6
6	Other	0.1	0.1	-	-
7	CTO Contingency Fund Approved	0.3	-	0.3	2.3
8	<b>Sub-total Direct Project Costs</b>	<b>\$ 7.4</b>	<b>\$ 6.3</b>	<b>\$ 1.1</b>	<b>\$ 1.8</b>
9	Allocations	0.3	0.3	-	-
10	Finance Charges	1.1	1.1	-	0.2
11	<b>Sub-total Indirect Project Costs</b>	<b>\$ 1.4</b>	<b>\$ 1.4</b>	<b>\$ -</b>	<b>\$ 0.2</b>
12	<b>CTO Contingency Fund Unutilized</b>	-	-	-	-
13	<b>Board Discretionary Fund</b>	-	-	-	-
14	<b>Total</b>	<b>\$ 8.8</b>	<b>\$ 7.7</b>	<b>\$ 1.1</b>	<b>\$ 2.0</b>

Amounts in Millions

Note 1: Pending Contingency management disposition



# Financial Review – LTD Performance through March 2010

## Approved Forecast vs. Actual

Line	Cost Summary	Forecast <sup>1</sup>	Actual	Variance Fav./((Unfav.))	Forecast Remaining
1	Internal Labor Costs	\$ 63.4	\$ 63.8	\$ (0.4)	\$ 20.2
2	Backfill Labor Costs	5.9	5.6	0.3	1.4
3	External Resource Costs	264.8	264.2	0.6	17.7
4	Software & Software Maintenance	26.5	28.1	(1.6)	2.7
5	Hardware & Hardware Maintenance	52.7	52.1	0.6	2.6
6	Other	2.1	2.1	-	0.4
7	CTO Contingency Fund Approved	2.3	-	2.3	2.5
8	Sales Tax Refund	(7.3)	(7.3)	-	-
9	<b>Sub-total Direct Project Costs</b>	<b>\$ 410.4</b>	<b>\$ 408.6</b>	<b>\$ 1.8</b>	<b>\$ 47.5</b>
10	Allocations	20.9	20.9	-	2.0
11	Finance Charges	29.2	29.0	0.2	22.3
12	<b>Sub-total Indirect Project Costs</b>	<b>\$ 50.1</b>	<b>\$ 49.9</b>	<b>\$ 0.2</b>	<b>\$ 24.3</b>
13	<b>CTO Contingency Fund Unutilized</b>	-	-	-	<b>6.0</b>
14	<b>Board Discretionary Fund</b>	-	-	-	<b>105.5</b>
15	<b>Total</b>	<b>\$ 460.5</b>	<b>\$ 458.5</b>	<b>\$ 2.0</b>	<b>\$ 183.3</b>

Amounts in Millions

Note 1: Forecast consists of actuals through December 2009 and reforecast January, February and March



# Financial Review – CTO Contingency Fund

## Q1 Risk Items Update

Line	Major Activities/Adjustments	Likely to Spend <sup>1</sup>	Risk	Approved NCRs	Unutilized Risk Funds
1.	•External Labor Support for Delivery Assurance and Market Experts for Operational Support & Guidelines (\$2.4M) & Board directive for Organization Study (\$0.5M)	H	\$ 2.9	(\$ 0.8)	\$2.1
2.	•Infrastructure hardware upgrades and application patching	L	2.0	(0.6)	1.4
3.	•Software Licenses and Maintenance Fees	H	1.9	(1.9)	-
4.	•Current in-flight change requests within the NCR pipeline	H	1.6	(0.4)	1.2
5.	•Market Collateralization for Credit system changes and NPRRs	H	1.0	-	1.0
6.	•Business Process Monitoring scoping and requirements gathering based on other ISO implementations, Internal and External Labor support for problem analysis, monitoring configurations, tools and utilities	H	1.0	(0.2)	0.8
7.	•Network Modeling changes for loading and publishing to support NPRR	H	0.2	-	0.2
8.	•IMM Development Resources from ABB	L	0.2	-	0.2
9.	•Uncategorized Nodal Change Request •External resources for SYS, PC INT & INF	N/A	-	(0.9)	(0.9)
	Total		<u>\$ 10.8</u>	<u>(\$ 4.8)</u>	<u>\$ 6.0</u>

Amounts in Millions

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



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# Quarterly Reforecast Process Update

# Financial Review – Board Discretionary Fund Summary

- **The Board Approved Budget is \$643.8M**
- **Board Discretionary Fund increased by \$7.3M to \$112.8M**
  - Direct Program Costs:
    - Estimate at Completion reforecast favorable net variance - \$6.8M
      - Unutilized Q1 2010 EAC Risk Items – \$6.0M
      - Q1 Favorable variance - \$1.8M
    - Estimate to complete reforecast – (\$1.0)M
      - Apr.-Dec. favorable variance – \$4.3M
      - CTO risk items – (\$5.3)M
  - Indirect Program Costs:
    - Finance charge impacts - \$0.5M
      - Q1 Favorable variance - \$0.2M
    - Estimate to Completion (Apr-Dec 2010) favorable variance - \$0.1M
    - Post completion finance charge favorable variance - \$0.2M

Summary	
Board Discretionary Fund	Millions
Beginning balance, 1/01/10	\$105.5
Direct Program Costs (see next slide)	6.8
Indirect Program Costs	<u>0.5</u>
Ending balance, 4/1/10	<u><b>\$112.8</b></u>

# Financial Review – CTO Contingency Fund

## Q1 Risk Items Update

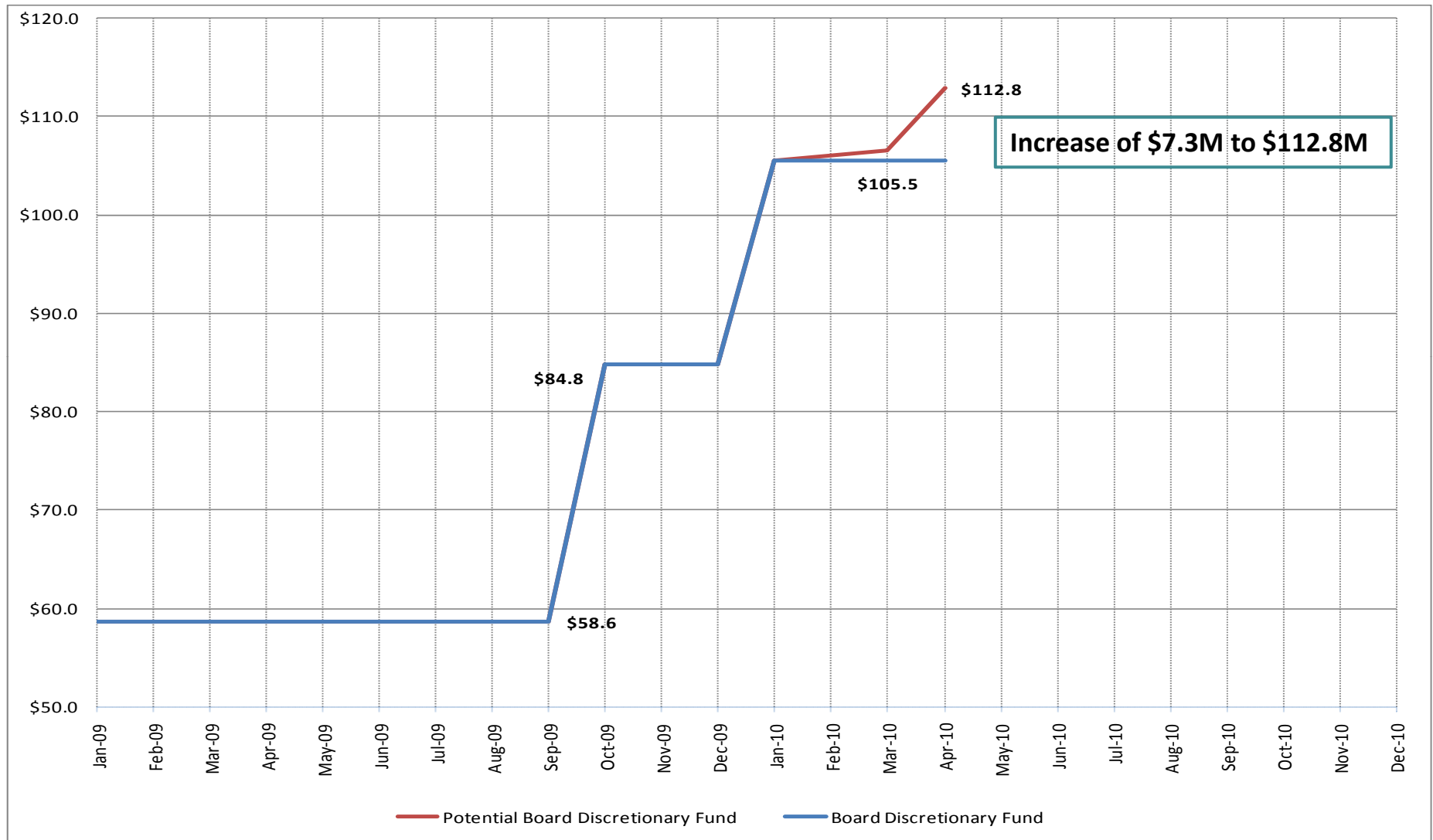
Program Risk & Changes	Major Activities/Adjustments	CTO Fund	Board Fund
	<b>Existing CTO Contingency at January 1, 2010</b>	<b>\$ 10.8</b>	
Approved Change Management Items Charged to CTO Contingency	<ul style="list-style-type: none"> <li>• NCR87 TIBCO Software (\$1.9M)</li> <li>• NCR83 Board Directive for Organizational Study (\$0.5M)</li> <li>• NCR91;76 Market Strategist; FMO Backfill (\$0.6M)</li> <li>• NCR84 Seimens Software (\$0.3M)</li> <li>• NCRs &lt;\$0.2M (\$1.5M)</li> </ul>	<u>(4.8)</u>	
	<b>Close-Out Unutilized Q1 2010 EAC Risk Items</b>	<b>(6.0)</b>	<b>6.0</b>
Budget to Actual Variance	• Q1 Favorable Variance		1.8
Estimate to Complete	<ul style="list-style-type: none"> <li>• Favorable Impact of Reforecast Apr. - Dec. 2010 <ul style="list-style-type: none"> <li>• <i>Removal of TBD External Resources</i></li> <li>• <i>De-scoping of TBD Audit Services</i></li> <li>• <i>Reduction in Backfill to Support Nodal Program</i></li> <li>• <i>Validated HW/SW Maintenance Costs</i></li> </ul> </li> </ul>		4.3
Risk Items for Inclusion in CTO Contingency (See Appendix)	<ul style="list-style-type: none"> <li>• Credit Management</li> <li>• Infrastructure Hardware Upgrades and Application Patching</li> <li>• Uncategorized Nodal Change Requests</li> <li>• External Labor Support for Market Analysis</li> <li>• Business Process Monitoring and Cutover Support</li> <li>• Current Open Nodal Change Request</li> <li>• Network Modeling Management</li> <li>• IMM Development Resources from ABB</li> </ul>	1.2 1.0 1.0 0.8 0.7 0.3 0.2 <u>0.1</u>	(1.2) (1.0) (1.0) (0.8) (0.7) (0.3) (0.2) <u>(0.1)</u>
	<b>Total Board Discretionary Fund Giveback</b>		<b><u>\$ 6.8</u></b>
	<b>CTO Contingency Fund at April 1, 2010</b>	<b><u>\$ 5.3</u></b>	

Amounts in Millions





# Financial Review – Board Discretionary Fund



Amounts in Millions



20 April 2010

# Financial Review – Estimate At Completion

## Q2 Reforecast

Line	Cost Summary	LTD Actual	Estimate To Complete	Estimated Program Total
1	Internal Labor Costs	\$ 63.8	\$ 20.1	\$ 83.9
2	Backfill Labor Costs	5.6	0.7	6.3
3	External Resource Costs	264.2	17.7	281.9
4	Software & Software Maintenance	28.1	2.0	30.1
5	Hardware & Hardware Maintenance	52.1	2.3	54.4
6	Other	2.1	0.3	2.4
7	CTO Contingency Fund Request	-	5.3	5.3
8	Sales Tax Refund	(7.3)	-	(7.3)
9	<b>Sub-total Direct Project Costs</b>	<b>\$ 408.6</b>	<b>\$ 48.4</b>	<b>\$ 457.0</b>
10	Allocations	20.9	2.1	23.0
11	Finance Charges	29.0	22.0	51.0
12	<b>Sub-total Indirect Project Costs</b>	<b>\$ 49.9</b>	<b>\$ 24.1</b>	<b>\$ 74.0</b>
13	<b>Total</b>	<b>\$ 458.5</b>	<b>\$ 72.5</b>	<b>\$ 531.0</b>

Supplemental Information		Q1 Balance	Giveback	Q2 Balance
14	Board Discretionary Fund	\$ 105.5	\$7.3	\$ 112.8
15	February 2009 Approved Budget			<u>\$ 643.8</u>

Amounts in Millions

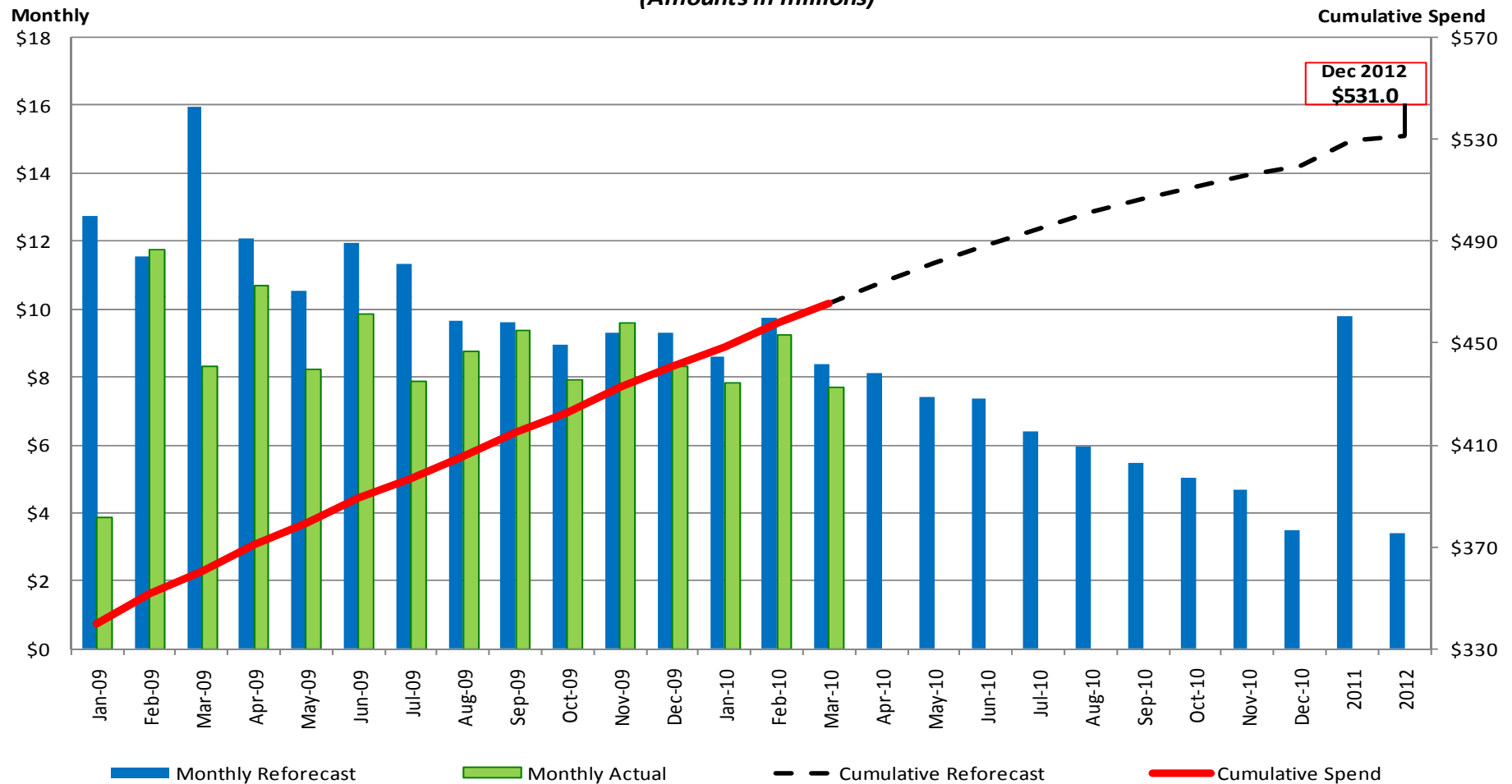


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# Financial Performance

# Financial Review – Program Cost Management 2009 and 2010 Forecast

## Monthly Budget, Forecast and Actual Analysis (Amounts in millions)



Amounts in Millions

**Note:** Years 2011 and 2012 are finance charges



20 April 2010

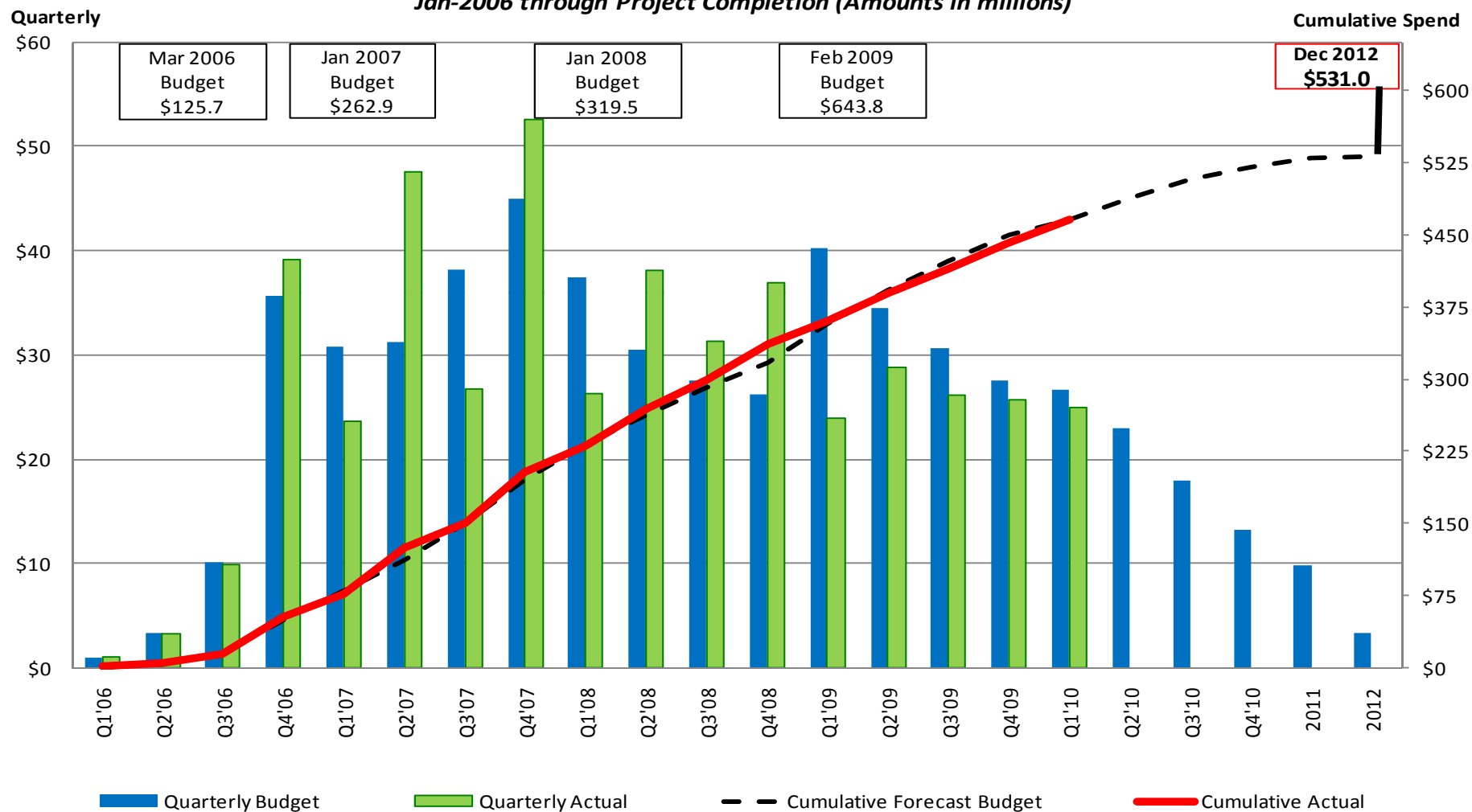
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ERCOT Board of Directors

# Financial Review – Program Cost Management 2006 to 2010 Quarterly

## Quarterly Budget, Forecast and Actual Analysis

Jan-2006 through Project Completion (Amounts in millions)



**Note:** Years 2011 and 2012 are finance charges

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# Questions?

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# Appendix

# Financial Review – Supplemental Schedule

## Q2 Reforecast - CTO Contingency Request Detail

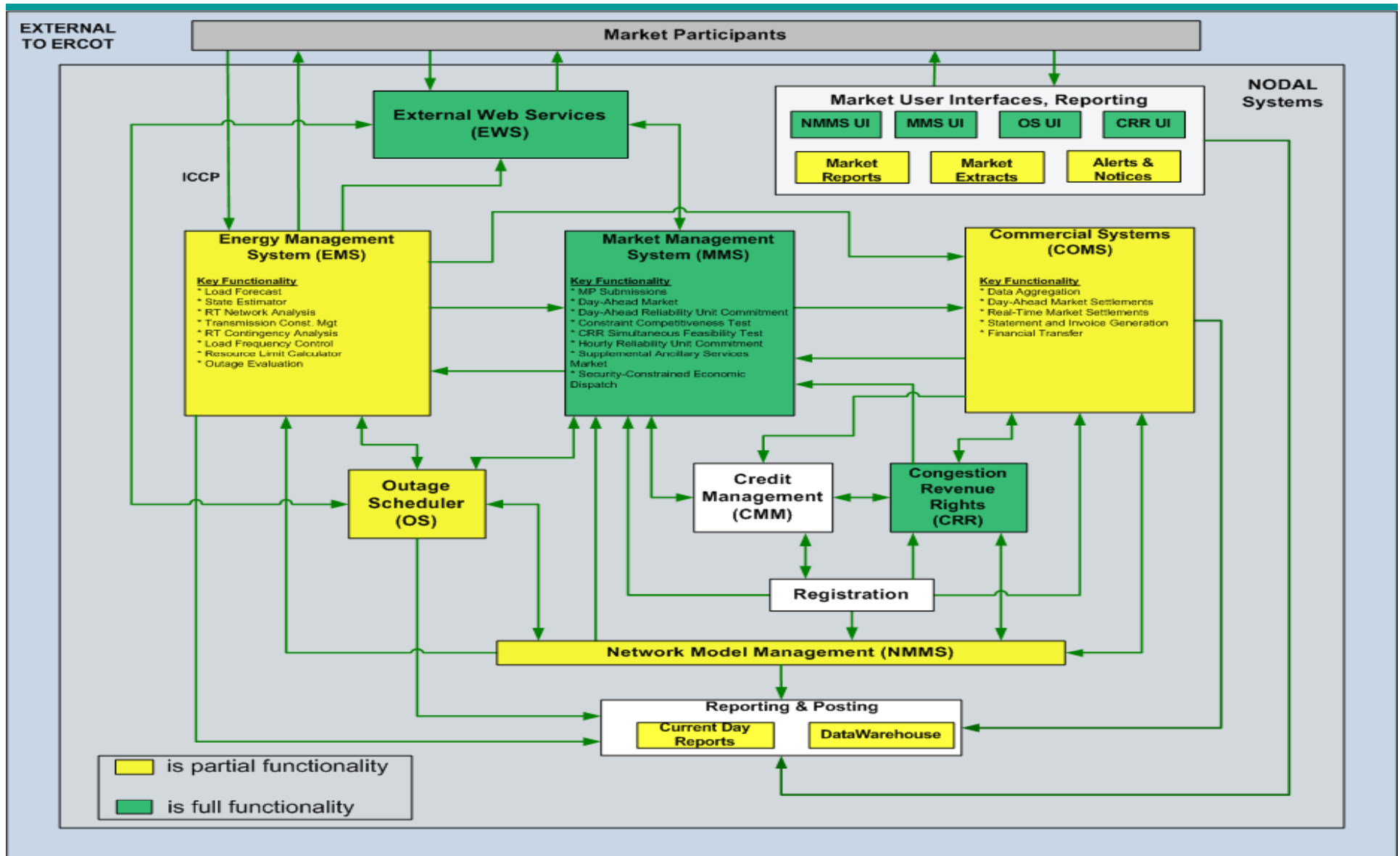
Program Risk & Changes	Risk	Risk Details
Credit Management	\$1.2	<ul style="list-style-type: none"> <li>• \$0.5M NPPR 206 (ABB Dev, Reporting, and Testing)</li> <li>• \$0.3M Potential Future Exposure Model requested from FNA</li> <li>• \$0.1M T5 TPT Break-fix and Workflow Training</li> <li>• \$0.3M Defect Resolution and Reports</li> </ul>
Infrastructure Hardware & Application Upgrades	1.0	<ul style="list-style-type: none"> <li>• \$0.5M for Unplanned Hardware (Servers and Storage)</li> <li>• \$0.5M for HW/SW Maintenance True-Ups</li> </ul>
Unauthorized Nodal Change Request	1.0	<ul style="list-style-type: none"> <li>• Estimate based on historical uncategorized change requests and future complexities. Includes risk for defect remediation and work efficiencies</li> </ul>
External Labor Support for Market Analysis	0.8	<ul style="list-style-type: none"> <li>• Additional External Market Resources of approximately 3,000 total hours</li> </ul>
Business Process Monitoring & Cutover Coordination	0.7	<ul style="list-style-type: none"> <li>• \$0.2M External resource for HP Open View</li> <li>• \$0.5M External Resources for Cutover Coordination</li> </ul>
Current Open Change Request	0.3	<ul style="list-style-type: none"> <li>• Open Nodal Change Request Estimate as of April 1, 2010</li> </ul>
Network Model Management	0.2	<ul style="list-style-type: none"> <li>• External Resource Support for Network Modeling</li> </ul>
Independent Market Monitoring (IMM)	<u>0.1</u>	<ul style="list-style-type: none"> <li>• Additional IMM External Resources of approximately 500 hours</li> </ul>
<b>Total</b>	<b><u>\$5.3</u></b>	

Amounts in Millions





# Nodal Systems Blueprint - Market Trials - Phase 4 - April 1st



# 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