



**ERCOT Finance & Audit Committee Meeting:**  
**Includes 2011 Budget Discussion**  
**7620 Metro Center Drive, Austin, Texas**  
**Met Center, Conference Room 206**  
**October 18, 2010; 12:30pm – 3:00pm\***

Item #	Agenda Item Type	Description/Purpose/Action Required	Presenter	Time
1.		Call to order Executive Session	C. Karnei	12:30pm
2.		2a. Announcement of proxies	C. Karnei	
	Decision required	2b. Approval of executive session minutes (Vote) (09/21/10)	C. Karnei	
	For discussion	2c. Internal Audit status report	B. Wullenjohn	
	For discussion	2d. Review Draft 2011 Internal Audit Plan	B. Wullenjohn	
	Decision required	2e. 2011 Internal Audit Budget and Resources (Vote)	B. Wullenjohn/ T. Doggett	
	Informative	2f. EthicsPoint Historical Metrics and Trends	B. Wullenjohn	
	Informative	2g. EthicsPoint monthly update	B. Wullenjohn	
	For discussion	2h. Quarterly private discussion with Chief Audit Executive	B. Wullenjohn	
3.	Informative	Contracts, personnel, litigation and security	Various	
		Recess Executive Session		
		<b>Convene General Session</b>		
4.	Decision required	Approval of general session minutes (Vote) (09/21/10)	C. Karnei	
5.	For discussion	Review assumptions and preliminary schedules for the 2011 annual operating budget	M. Petterson	
6.	Decision required	Nodal credit (Vote) - Oliver Wyman report on Nodal credit policy and practices - ERCOT credit status and recommendation - CWG status and recommendation	Oliver Wyman  C. Yager T. Nikazm	
7.	For discussion	Discussion of SAS 70 transition to Nodal	C. Moseley	
8.	Informative	Committee Briefs (Q&A only)	All	
9.	Informative	Future agenda items	M. Petterson	
10.		Other business	M. Petterson	
		Adjourn meeting	C. Karnei	3:00pm

*\* Background material is enclosed or will be distributed prior to meeting. All times shown in the agenda are approximate. The next Finance & Audit Committee Meeting will be held Monday, November 15, 2010, at ERCOT, 7620 Metro Center Drive, Austin, Texas 78744, in Room 206.*

Decision required
For discussion

## 4. Approval of General Session Minutes Clifton Karnei

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### **Approval of General Session Minutes**

- Vote 9/21/10

**DRAFT ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.  
MINUTES OF THE FINANCE & AUDIT COMMITTEE – GENERAL SESSION**

7620 Metro Center Drive (Room 206) – Austin, Texas 78744  
September 21, 2010

Pursuant to notice duly given, the Finance & Audit Committee (“F&A” and/or “Committee”) of Electric Reliability Council of Texas, Inc. (“ERCOT”) convened on the above-referenced date. Committee Chairman Clifton Karnei confirmed that a quorum was present and called the meeting to order at approximately **7:34 a.m.** The Committee immediately went into Executive Session, where it remained until it recessed and reconvened in General Session at **8:20 a.m.**

**General Session Attendance**

**Committee members:**

Bermudez, Jorge	Unaffiliated Board Member	Unaffiliated Board Member	Present
Crowder, Calvin	American Electric Power Service Corporation	Investor Owned Utility	Present
Dreyfus, Mark	Austin Energy	Municipal	Present
Espinosa, Miguel (Vice Chair)	Unaffiliated Board Member	Unaffiliated Board Member	Present
Fehrenbach, Nick	City of Dallas	Commercial Consumers	Not Present
Karnei, Clifton (Chair)	Brazos Electric Power Cooperative	Cooperative	Present
Zlotnik, Marcie	StarTex Power	Independent REP	Present

**Other Board Members and Segment Alternates:**

Walker, Mark	NRG Texas	Independent Generator	Present
Whittle, Brandon	DB Energy Trading	Independent Power Market Representative	Present

**ERCOT Staff and Guests:**

Adib, Parviz	Pioenergy
Anderson, Ken	Public Utility Commission of Texas (PUCT) - Commissioner
Anderson, Troy	ERCOT – Manager, Enterprise Project Portfolio
Beckham, Rebecca	ERCOT – Manager, Financial Reporting
Brandt, Adrienne	Austin Energy
Cleary, Mike	ERCOT – Chief Operating Officer
Clemenhagen, Barbara	Topaz
Delenela, Ann	ERCOT – Director, Critical Infrastructure Security
Denton, Michael	Oliver Wyman
DiPastena, Phil	ERCOT – Enterprise Risk Manager
Doggett, Trip	ERCOT – Chief Executive Officer
Doll, Laura	Unaffiliated Member – ERCOT Board of Directors
Forfia, David	ERCOT – Director, IT Infrastructure
Fox, Kip	AEP

Garcia, Diana	Maxwell Locke & Ritter
Gent, Michehl	Chairman – ERCOT Board of Directors
Hancock, Misti	ERCOT – Manager, Budget & Financial Analysis
Hobbs, Kristi	ERCOT – Manager, Market Rules
Jones, Brad	Luminant
Kolodziej, Eddie	Customized Energy Solutions
Leady, Vickie	ERCT – Senior Corporate Counsel
Lester, Suzanne	ERCOT – Executive Assistant, Finance
Magness, Bill	ERCOT – Interim Vice President and General Counsel
Morehead, Juliana	ERCOT – Associate Corporate Counsel
Moseley, Cheryl	ERCOT – Manager, ICMP
Nikazm, Tamila	Austin Energy
Oehler, Melissa	Public Utility Commission of Texas
Ogelman, Kenan	CPS Energy
Pena, Richard	CPS Energy
Petterson, Mike	ERCOT – Controller
Porter, Lea Anne	ERCOT – Director, Compensation & Benefits
Robinson, Shad	Haley & Olson
Saathoff, Kent	ERCOT – Vice President, Grid Operations and System Planning
Seely, Chad	ERCOT – Senior Corporate Counsel
Stark, Ruth	Public Utility Commission of Texas
Stauffer, Tarra	ERCOT – Paralegal
Stephenson, Randa	Luminant
Swanson, Leslie	ERCOT – Treasury Manager (contractor)
Taylor, William	Calpine
Tietjen, Darryl	Public Utility Commission of Texas
Trayers, Barry	Citigroup Energy
Walker, DeAnn	CenterPoint Energy
Wullenjohn, Bill	ERCOT – Director, Internal Audit
Yager, Cheryl	Treasurer
Zimmerhanel, A.J.	Maxwell Locke & Ritter

Chairman Karnei announced that a quorum was present and that Miguel Espinosa held a proxy for Nick Fehrenbach.

**Approval of General Session Minutes – August 17, 2010 (Agenda Item 4)**

Mr. Karnei entertained a motion to approve the August 17, 2010 General Session F&A Committee meeting minutes (“Minutes”).

**Jorge Bermudez made a motion to approve the Minutes. Marcie Zlotnik seconded the motion. The motion passed unanimously with one (1) abstention by Miguel Espinosa, who was not present at the August 17, 2010 meeting.**

**Review Results of and Accept the 2009 401(k) Audit Report (Agenda Item 5)**

Lea Anne Porter, ERCOT Director of Compensation and Benefits, introduced Diana Garcia and A.J. Zimmerhanel of Maxwell Locke & Ritter and directed the Committee to the 2009 401(k) Audit Report (“Audit Report”) contained in the meeting materials. Ms. Porter and Ms. Garcia

informed the Committee that no significant issues or adjustments were noted in the Audit Report. Ms. Garcia noted that the Audit Report was clean, and Ms. Porter stated that it would be presented for approval at the Board meeting later that day.

**Miguel Espinosa made a motion to recommend acceptance of the 2009 401(k) Audit Report to the Board. Calvin Crowder seconded the motion. The motion passed with a unanimous voice vote.**

**Recommendation of Approval of the First Priority Security Interest Agreement (Agenda Item 6)**

Chad Seely reminded the Committee that the First Priority Security Interest Agreement (Agreement) was optional for Market Participants that wished to receive favorable credit treatment under the Nodal Protocols. Mr. Seely noted that the Agreement was the final version containing stakeholder comments, and that although ERCOT could not accept all comments, he believed that it was the best agreement ERCOT could develop based on those comments received.

Mr. Seely stated that he was asking the Committee to recommend that the Board of Directors approve the Agreement as a standard form version for use under the ERCOT Protocols. Mr. Seely confirmed that future edits would not be accepted once the Agreement was approved, but that a process for modifying standard form version agreements was available. Mr. Bermudez inquired as to whether Market Participants would be penalized for not accepting the Agreement. Mr. Seely responded that if a Market Participant could not provide ERCOT with a first priority security interest by way of this Agreement, it would not have the benefit of netting current and future activities under the Nodal Protocols and therefore receiving favorable credit treatment. Mr. Seely indicated that he did not believe this treatment penalized the Market Participant; rather, it would just require the Market Participant to post more security because such activities would not be netted under the Nodal Protocols.

**Calvin Crowder made a motion to recommend that the Board of Directors approve the First Priority Security Interest Agreement as presented as a standard form version. Miguel Espinosa seconded the motion. The motion passed with unanimous voice vote.**

**Review Assumptions for Preliminary Schedules for the 2011 Annual Operating Budget (2011 Budget) (Agenda Item 7)**

Mike Petterson noted that cost was ERCOT's primary economic metric and that ERCOT was actively engaged in controlling costs to ensure that it delivered services and fulfilled obligations as efficiently and effectively as possible. Mr. Petterson then recognized Mr. Tietjen and Ms. Stark of the PUCT for their contributions and advice during preparation of the 2011 budget.

Mr. Petterson reported that ERCOT management accepted the responsibility of controlling costs, and added that a significant contributing factor to cost savings was the reduction of staff. He noted a five percent (5%) reduction in staff over the prior twelve (12) months, with further staff reductions expected in 2010-2011 throughout the implementation of Nodal.

Mark Dreyfus asked for an explanation concerning the characterization of reductions. Messrs. Petterson and Doggett noted the 2009 staffing reduction, new career opportunities, and poor performance management as factors affecting reductions. Mr. Petterson confirmed that the proposed staffing reductions were reflected in the budget forecast for the 2011 Budget. Mr.

Crowder noted that savings were captured in the 2011 Budget following staffing realignment, and inquired as to costs to achieve, and whether any such costs had been captured in the 2011 Budget. Mr. Petterson replied that ERCOT had incorporated costs associated with the reengineering and restructuring of the organization in the financial forecast for year-end 2010 as well as the preliminary 2011 Budget.

Mr. Petterson reiterated the assumption that there would be no change to the System Administration Fee (reflected as 41.71 cents per MWh), which would keep the Nodal surcharge at the current level of 37.5 cents per MWh. He added that the flat-fee scenario would require the repurposing of the Nodal surcharge, or identification and recovery of cost in 2011 from the Nodal Surcharge Fee for activity related to Nodal stabilization. Mr. Petterson told the Committee that ERCOT was working on a detailed list of costs and activities related to Nodal stabilization, and would provide it to the Committee in October 2010.

Ms. Zlotnik asked whether the Committee would have an opportunity to review a breakdown of deferred defects. Mr. Cleary responded that his expectation was that the first three to six months following Nodal go-live will be stabilization, and significant work relating to deferred defects, parking deck items, and the like were not expected to commence until the second half of 2011. Mr. Espinosa asked that proposed usage of the \$113 million contingency fund be broken-down to provide the Committee with an overview of its components and associated costs. Mr. Cleary assured the Committee that it would receive this requested information at the October 2010 meeting. Mr. Doggett followed-up by noting that ERCOT would provide the Committee with an explicit list of the work constituting the \$20 to \$30 million of the contingency fund needed to keep ERCOT's fees flat for 2011.

Mr. Dreyfus reminded the Committee that Commission Order in Docket 36851 ("Order"), gives the Board exclusive control over \$58.6 million in the discretionary fund. Thus, he said, the Board was directed by the PUCT to spend money from the Nodal surcharge from the discretionary fund on stabilization. Mr. Dreyfus further noted the importance that the Board use said spending authority to employ its exclusive control in using discretionary funds. Mr. Doggett concurred with Mr. Dreyfus, and noted that Bill Magness indicated that ERCOT should file its acknowledgement to use the discretionary funds in accordance with the Order.

Mr. Crowder inquired about the doubling of North American Electric Reliability Corporation ("NERC") dues. Mr. Petterson noted that the NERC budget was approved by FERC and then allocated by NERC to ERCOT. It was his opinion that the increase in dues resulted from an increase in the NERC and Texas Reliability Entity, Inc. budgets.

Mr. Crowder then asked whether EMMS Development, as set forth on Page 31 of the Committee materials, was an Operations and Maintenance ("O&M") item. Mr. Petterson responded that the line item represented the dedicated onsite resources from firms that were available to provide ERCOT with proprietary software resources during the Nodal transition. Mr. Cleary further enunciated that the item referred to resources that were dedicated to ERCOT, until a particular application's end-of-life, which were available to ERCOT on an on-call basis in the event of a problem with the application. Committee members then held a lengthy discussion concerning Outside Services data, which was redeployed under the line item titled Subscriptions and Dues. Mr. Karnei recommended that this particular budget category be more clearly named.

Messrs. Doggett and Petterson agreed to provide an additional Budget Schedule at the October 2010 Committee meeting to identify the "big bucket" budget items. Mr. Karnei confirmed that

the 2011 Annual Operating Budget was on schedule for final review and discussion at the October 2010 Finance and Audit Special Meeting. It was further noted that the Committee would likely be presented with a request to recommend that the Board approve the 2011 Budget at the November 2010 meeting.

### **Nodal Credit Risk Profile and Status (Agenda Item 8)**

Cheryl Yager provided an overview of the Nodal Credit Risk Profile and status. Ms. Yager noted that there were no open defects with the Credit Monitoring and Management (“CMM”) system, and that the system was functioning as expected. She then stated that the current issue was confirming the quality of results from the market trials. To aid in that, she noted that old market trials data was removed from CMM for the 168-hour test to allow Market Participants to see what their collateral calculation would be in a go-live situation. At least some of the Market Participants that took part in the test appeared to be operating per a normal scenario and the exposures calculated for those entities were consistent with expectations, she said. Ms. Yager noted a net increase in collateral requirements due to a) increased activity and b) some high prices in the real-time market. She reiterated that ERCOT would continue to communicate with Market Participants for feedback regarding testing and any concerns they had.

Ms. Yager informed the Committee that the metrics for system readiness, process readiness, and people readiness had been met.

Ms. Yager highlighted some key points from the PJM benchmark report and answered questions. She also noted that Oliver Wyman was working on their review, which was on target for the October F&A meeting. Mr. Crowder asked whether the Oliver Wyman report could be presented to the Committee prior to the day of the October 2010 meeting. Ms. Yager responded that ERCOT expected to forward the report to the Committee with the Board materials for the October 2010 meeting a week prior to the meeting. Chairman Karnei asked Ms. Yager to circulate proposed language that the Committee might use in its recommendation for Board approval concerning credit certification. Ms. Yager assured Chairman Karnei that she would forward the applicable language to the Committee prior to the October 2010 meeting.

Ms. Yager then highlighted a couple of open items being worked on in the market. First, she noted that the CWG / MCWG was currently reviewing two parameters used in the CRR auction to hold collateral for potential ongoing liability (e.g. mark to market liability) and that she expected that the Board would see something on this at their October meeting. Ms. Yager noted that the ongoing liability was being captured in a “multiplier” and an “adder” – mechanisms for holding collateral during an auction. The multiplier was currently set at one and the adder at \$1.50. She stated that the multiplier should be set to zero, rather than one, to prevent doubling up on the collateral requirement, and that the market was discussing reducing the adder from \$1.50. Both changes could easily be made before the Nodal go-live date, she expressed. Mr. Crowder asked whether the adder was per MWh. Ms. Yager responded that she believed it was per CRR, but would provide the Committee with a clarification by the October 2010 meeting.

Ms. Yager then discussed Day-Ahead-Market (“DAM”) credit constraints and noted that a significant amount of credit was consumed during market trials on non-business days due to the current configuration in the DAM. Ms. Yager informed the Committee that the Technical Advisory Committee (“TAC”) approved a potential change to methodology in the DAM system, and also requested that Available Credit Limits (“ACLs”) be updated daily as an alternative or addition. These two recommendations were forwarded for CEO review. She noted that, based on that review, ERCOT would process ACLs daily, including non-business days, at market open

on an interim basis to ensure that credit was handled effectively on non-business days. She noted that a long-term automated solution might be considered after Nodal go-live. Chairman Karnei asked Ms. Yager to clarify credit processing and the ability for a market participant to post credit on a weekend or holiday. Ms. Yager responded that a Market Participant could not send cash on a non-business day. She noted that the DAM system held additional collateral for a level of potential risk over non-business days since the real risk was not updated until the next business day. While higher, this potential risk is predictable, she said. She added that with ACLs updated daily over non-business days, risk estimates will be better; however, overall ACL would likely be less predictable (e.g. if high prices were experienced, etc) over non-business days. She reiterated that, given the current configuration in the DAM for non-business days, ERCOT would process ACLs daily at market Go Live.

Ms. Yager then outlined how e-Factors were handled per Mr. Helton's request at the prior Board meeting. She informed the Committee that e-factors were designed to provide a degree of netting since ERCOT did not have an ability to net within the DAM. She noted that market trials have shown that entities with only load or generation derive limited benefit from the e-factors, whereas those entities that had activity on the bid **and** offer sides derive more benefit. Mr. Karnei requested that Ms. Yager follow-up with Bob Helton regarding e-Factors. Ms. Yager responded that she had, and would further follow-up with Mr. Helton that day.

Ms. Yager discussed the Oliver Wyman study. She reminded the Committee that Oliver Wyman was looking at ERCOT's credit practices, including internal processes and procedures, as well as overall credit policies. She noted that Oliver Wyman would also provide an update to their previous benchmark study. She noted that this update would be more current than the PJM benchmark, but that the scope would be more limited than the PJM study given time constraints. Mr. Crowder inquired as to whether Oliver Wyman was looking into issues such as e-factors. Mr. Denton of Oliver Wyman responded that they planned to look generally at the procedures and impact that e-factors would likely have on the amounts of collateral required for Market Participants, as well as look at the credit requirements for the CRR auction and the DAM. Ms. Yager reminded the Committee that the PJM Market Credit Comparison was published in June 2008 as an informational document containing ERCOT Zonal data. She then noted the Nodal differentials, and informed the Committee that ERCOT appeared consistent with other Independent System Operators ("ISOs"), but inconsistent in some areas with other markets generally. In Nodal, Ms. Yager stated that ERCOT validated all DAM transactions, applying a hard credit limit, whereas it appeared that other markets did not apply a hard limit for all participants (i.e., those markets did not require their participants to stay within particular credit limits). Mr. Karnei inquired about how other markets socialized residual losses and noted that ERCOT assessed residual credit losses to Market Participants. Ms. Yager confirmed that in Nodal, Market Participants would continue to share in the losses; however, the mechanism changes in Nodal, with all Market Participants (not just load) sharing in the losses. Mr. Karnei asked Ms. Yager to provide Andrew Dalton with the information as discussed.

### **Credit Work Group ("CWG") Status Update (Agenda Item 9)**

Tamila Nikazm, Vice Chair of the Credit Working Group, provided an update on ERCOT's credit readiness for Nodal go-live from CWG's perspective. Ms. Nikazm highlighted the primary open issues and concerns as follows:

1. CMM - extreme data being used in credit calculations, causing high collateral requirements. Ms. Nikazm noted that while the data was much better during the 168-hour test, there were still unusual prices during certain periods



2. DAM - use of the 95<sup>th</sup> percentile in certain credit calculations. Ms. Nikazm noted that this was a high bar, which could result in a significant amount of collateral being consumed if there were one or two days of unusual prices, which could consequently impact credit for 30 days DAM - credit consumption over non-business days in the DAM. Ms. Nikazm noted that ERCOT processing ACLs on non-business days should alleviate this concern.
3. DAM – ability to shadow DAM exposure calculation. Ms. Nikazm noted that ERCOT was working with the market to address this.
4. CRR – high collateral resulting from the current Multiplier and Adder Ms. Nikazm noted that this was being reviewed by the market.

Ms. Nikazm assured the Committee that CWG would: (a) continue to work to resolve the issues presented; (b) review and recommend solutions for any new concerns raised in Nodal trials; and (c) make a formal recommendation to the Committee as to Nodal credit readiness at the October 2010 meeting.

Mr. Karnei asked that CWG review the Oliver Wyman Report and inform the Committee at the October 2010 meeting as to whether CWG agreed and/or disagreed with Oliver Wyman's conclusions.

#### **Annual Review of Committee Charter and Structure (Agenda Item 10)**

Vickie Leady, ERCOT Senior Corporate Counsel, discussed proposed changes to the F&A Committee Charter as well as the HR&G Committee Charter. She suggested that language contained in the charters concerning the assembly of members and quorum requirements be synched for conformity. Mr. Karnei agreed that consistency was important, and asked Ms. Leady to speak with Andrew Dalton about the issue and work to coordinate the language of the charters. Chairman Karnei noted that this issue would be readdressed at the October November 2010 meetings.

#### **Quarterly Committee Education on Accounting Developments (Agenda Item 11)**

Rebecca Beckham, Manager of Financial Reporting, provided the Committee with the quarterly update on accounting developments, as requested by the Committee and recommended by ERCOT's external auditors (Ernst & Young). Ms. Beckham reviewed both proposed and implemented accounting standards, as well guidance concerning the implications of such standards upon ERCOT.

Ms. Beckham highlighted two proposals that would be in effect in 2011 and directly affect ERCOT; one of which would also affect the Committee.

1. SSAE No. 16 – *Reporting on Controls of a Service Organization*. This proposal would affect the SAS 70 audit that ERCOT receives, stated Ms. Beckham. While maintaining the same standards as in the past, the new SAS 70 standard will require ERCOT management to provide a written assertion as to ERCOT controls and the operating effectiveness thereof.
2. PCAOP Proposed Auditing Standard – *Communications with Audit Committees*. Although not fully released, Ms. Beckham noted that this proposal would try to increase the communications between the Committee and ERCOT's independent auditor. Thus, she said, the independent auditor would evaluate whether management was communicating accounting pronouncements and accounting judgments and estimates.

Mr. Karnei asked Ms. Beckham to address the proposal concerning leases. Ms. Beckham discussed an exposure draft released on August 17, 2010 concerning capital and operating leases. She stated that ERCOT held capital and operating leases, and under the proposal, the direct classification of leases would be eliminated, and every lease would be classified on the balance sheet. The effect would be a change in presentation, rather than a change in ERCOT's overall net assets, she noted.

Ms. Beckham then provided the Committee with a summary of accounting judgments that were applied in the third quarter of 2010, but went into effect in the second quarter. The most notable, she mentioned, was related to the presentation of revenue and expense related to ERCOT's Electric Reliability Organization ("ERO") billing on behalf of NERC and Texas Reliability Entity ("TRE"). The revenue and expense should be presented as gross, rather than net, since TRE is a separate entity, Ms. Beckham said. Overall, no impact would be shown on ERCOT's net income or assets, but a change in the way the revenue and expenses look would be seen, she advised. Mr. Karnei and Ms. Beckham agreed that there were few judgments that would affect ERCOT's financial statements.

### **Committee Briefs (Agenda Item 12)**

Mr. Karnei noted an increase in the number of Market Participants from July to August, and asked whether the increase was based on Nodal. Ms. Yager responded in the affirmative.

Ms. Yager further stated that ERCOT was in the process of opening additional investment accounts in preparation for Nodal go-alive and in anticipation of having additional cash that will be posted.

### **Future Agenda Items (Agenda Item 13)**

Mike Petterson noted the full agenda for October. Chairman Karnei suggested that the October 2010 meeting focus on budget and credit. The Committee agreed to move the review of Ernst & Young to the November 2010 meeting.

The following items were identified as Future Agenda Items:

1. Standing Internal Audit agenda items
2. Review assumptions and preliminary schedules for the 2011 annual operating budget
3. Annual review of Committee Charter and structure
4. Standing Nodal Credit Status
5. Review of investment strategy
6. Committee briefs
7. Future Agenda Items

### **Other Business (Agenda Item 14)**

None.

**Adjournment**

Mr. Karnei adjourned the meeting at approximately **9:42 a.m.**

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Juliana Morehead  
Associate Corporate Counsel

DRAFT

## 5. Review Assumptions and Preliminary Schedules for the 2011 Annual Operating Budget: Mike Petterson

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- Recap prior budget preparation discussions
- Summarize current budget preparations
- Review budget activity planned for November
- Answer questions regarding detailed budget work papers

## 5. Review Assumptions and Preliminary Schedules for the 2011 Annual Operating Budget: Recap Prior Discussions

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- Cost consciousness coupled with recent financial performance relating to the Nodal Program enable a scenario where ERCOT would need no change in fees for 2011
  - System Administration Fee remains at \$0.4171 per MWh
  - Nodal Surcharge remains at \$0.3750 per MWh
  - “No fee change” scenario assumes using \$25.2 million of the \$113 million Board Discretionary Fund in 2011 for charges directly related to nodal post go-live charges.
    - \$11.9 million of the \$25.2 million is for recurring annual charges that will be incurred as an ERCOT base operating cost starting in 2012
    - \$13.3 million of the \$25.2 million is one-time project charges that will be incurred only in 2011

5. Review Assumptions and Preliminary Schedules for the 2011 Annual Operating Budget: Summarize Current Status

Proposed Post Go-Live Charges by Category	Amount (\$000s)
Nodal Market Stabilization Project	\$ 11,264
Hardware and Software Systems License and Maintenance	7,820
"Parking Deck" Initiatives	3,250
Deferred Defects and Workaround Processes	2,550
Decommissioning Efforts	307
Total	\$ 25,191

5. Review Assumptions and Preliminary Schedules for the 2011 Annual Operating Budget: Summarize Current Status

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- If use of Nodal Program Board Discretionary Funds for proposed post go-live charges in 2011 is not acceptable, ERCOT's resource requirements may necessitate request to increase the System Administration Fee from \$0.4171 per MWh to \$0.4725 per MWh for 2011.

## 5. Review Assumptions and Preliminary Schedules for the 2011 Annual Operating Budget: Summarize Current Status

Line	Expense / Revenue Description	2011 Budget: using Board Discretionary Funds	Proposed Post Go-Live Charges	2011 Budget: without using Board Discretionary Funds
1	Expenses			
2	Staffing	\$ 69,947	\$ -	\$ 69,947
3	Hardware and software systems	9,861	7,820	17,681
4	Outside Services	2,973	4,080	7,053
5	Facilities	10,156		10,156
6	Financing	29,715		29,715
7	Other	<u>13,481</u>	-	<u>13,481</u>
8	Subtotal - Expenses	136,133	11,900	148,033
9	Project Expenditures (40 percent revenue funding)	<u>16,759</u>	<u>5,316</u>	<u>22,075</u>
10	Total - Expenses and Project Expenditures	152,892	17,216	170,108
11	Less Other Revenue and Interest Income	<u>23,426</u>	-	<u>23,426</u>
12	Cost to be Recovered from the System Administration Fee	\$ 129,466	\$ 17,216	\$ 146,682
13	GWh	310,410	310,410	310,410
14	ERCOT System Administration Fee	\$ 0.4171	\$ 0.0555	\$ 0.4725

	Net	Funding Factor	Gross
Proposed post go-live charges: Annual, recurring expenses	\$ (11,900)	na	\$ (11,900)
Proposed post go-live charges: One-time project expenditures	(5,316)	40%	(13,291)
Total	<u>\$ (17,216)</u>		<u>\$ (25,191)</u>



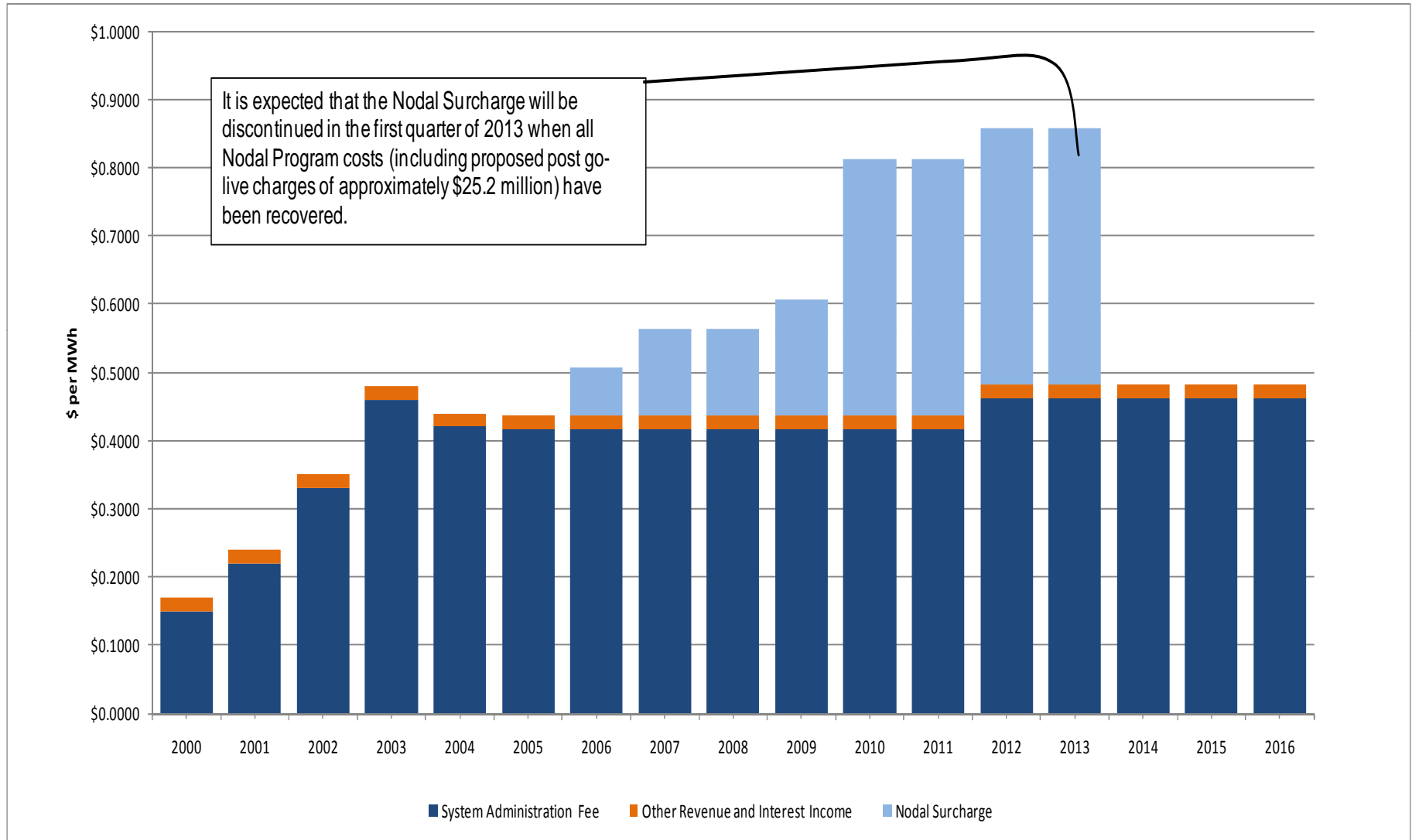


## 5. Review Assumptions and Preliminary Schedules for the 2011 Annual Operating Budget: Summarize Current Status

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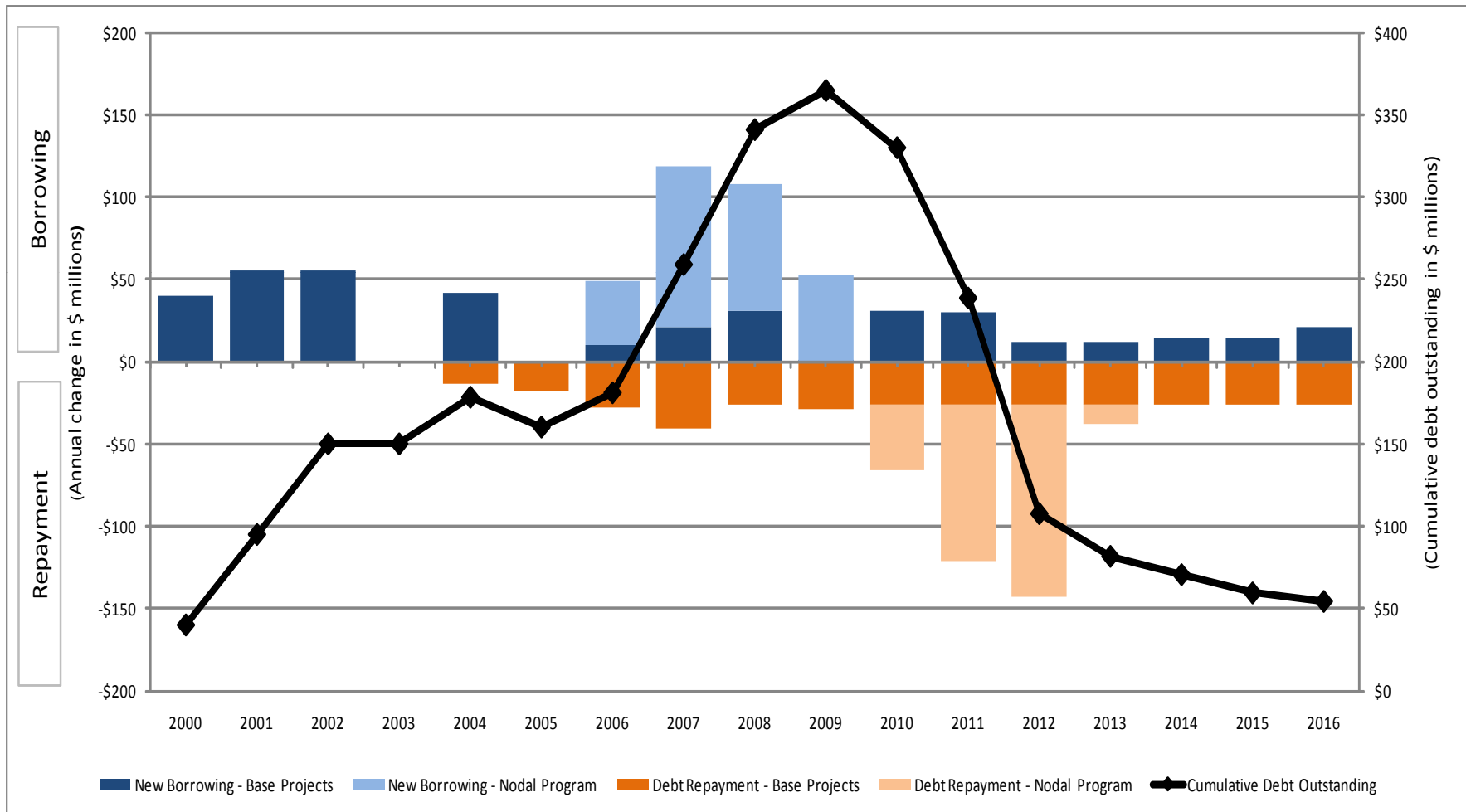
- System Administration Fee is projected to be \$0.46-\$0.47 per MWh for the period 2012-2016. Factors contributing to the projected fee increase include:
  - Incremental hardware and software license and support costs relating to nodal market systems
  - Incremental vendor service expenses relating to nodal market systems
  - Non-recurring events reflected in the 2011 budget
    - 2010 favorable financial variance
    - 2009 sales tax refund receipts
- Nodal Surcharge is projected to be \$0.375 per MWh until Nodal Program costs (including \$25.2 million of proposed post go-live charges) are fully recovered in early 2013.

## 5. Review Assumptions and Preliminary Schedules for the 2011 Annual Operating Budget: Summarize Current Status



## 5. Review Assumptions and Preliminary Schedules for the 2011 Annual Operating Budget: Summarize Current Status

- Substantial debt repayment planned for 2011 -2016



## 5. Review Assumptions and Preliminary Schedules for the 2011 Annual Operating Budget: 2011 Budget Schedule

Action	Date
<b>Finance and Audit Committee Meeting</b> Discuss and Review preliminary 2011 Budget/PPL Status and Budget Assumptions	20-Jul-10
<b>Finance and Audit Committee Meeting</b> Discuss and Review the 2011 Budget/PPL Status and Budget Assumptions	17-Aug-10
<b>Finance and Audit Committee Meeting</b> Prepare and Present the 2011 Preliminary Budget/PPL (Courtesy Copy to all Board Members)	21-Sep-10
<b>Finance and Audit Committee Meeting and Public Input Meeting</b> Discuss and Review the 2011 Budget and PPL (Courtesy Copy to all Board Members)	18-Oct-10
<b>Finance and Audit Committee Meeting</b> Obtain 2011 Budget Recommendation	15-Nov-10
<b>Board of Directors Meeting</b> Seek Board Approval of the 2011 Budget and PPL -Vote	16-Nov-10

## 5. Review Assumptions and Preliminary Schedules for the 2011 Annual Operating Budget

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### **Workpapers and Appendices**

# ERCOT Fiscal Year 2011 Budget

## Revenue Requirements - Assumes No Use of Nodal Discretionary Funds

(in Thousands)

Line	(\$ Thousands)	2009 Actual	2010 Budget	2010 Forecast	2011 Preliminary Budget	2012 Projected Budget	2013 Projected Budget	2014 Projected Budget	2015 Projected Budget	2016 Projected Budget
1	ERCOT O&M Expense									
2	Labor	51,508	59,012	52,332	69,947	68,485	70,197	71,952	73,751	75,595
3	Equipment & Tools	799	1,227	825	881	887	905	924	944	963
4	Outside Services	9,416	9,915	9,962	7,053	7,201	7,352	7,507	7,664	7,825
5	Utility, Maintenance, & Facilities	6,966	6,773	7,216	10,156	9,848	9,079	9,269	9,464	9,663
6	Hardware & Software License & Maint.	9,337	9,101	9,000	17,681	18,052	18,431	18,818	19,213	19,617
7	Employee Expenses	1,031	1,552	1,037	1,021	1,042	1,064	1,086	1,109	1,132
8	NERC Dues	2,141	2,462	8,295	11,975	12,226	12,483	12,745	13,013	13,286
9	Other Expenses	4,511	5,211	5,095	6,413	6,517	6,624	6,733	6,844	6,957
10	Subtotal - O&M Expense	85,710	95,253	93,762	125,126	124,259	126,136	129,035	132,002	135,039
11	Debt Service - Interest	2,718	5,272	2,539	3,515	3,163	2,847	2,562	2,306	2,076
12	Debt Service - Principal	26,137	26,137	26,137	26,200	26,200	26,200	26,200	26,200	26,200
13	Revenue Funded Projects	17,464	18,520	21,637	22,075	8,000	8,000	10,000	10,000	8,000
14	Protocol Services	639	1,500	787	2,466	2,246	2,293	2,342	2,391	2,441
15	Market Monitoring	2,300	2,300	2,417	2,700	2,800	2,900	3,000	3,100	3,200
16	Total Revenue Requirement	134,969	148,982	147,279	182,082	166,669	168,376	173,139	175,999	176,955
17	Less: Other Revenue	5,693	5,626	12,139	15,981	16,713	15,868	15,728	16,045	16,369
18	Less: Interest Income	51	81	5	-	-	-	-	-	-
19	Less: Extraordinary Item Revenue	705	12,760	18,570	5,000	-	-	-	-	-
20	2010 Carryforward	-	-	(14,420)	14,420	-	-	-	-	-
21	Revenue Rqmt from System Admin Fee	\$ 128,519	\$ 130,515	\$ 130,984	\$ 146,681	\$ 149,956	\$ 152,509	\$ 157,411	\$ 159,954	\$ 160,587
22	GWh	308,126	312,922	314,000	310,410	319,926	330,145	337,237	342,793	347,770
23	% GWh Growth	2.2%	1.6%	0.3%	-0.8%	3.1%	3.2%	2.1%	1.6%	1.5%
24	ERCOT System Administration Fee	\$ 0.4171	\$ 0.4171	\$ 0.4171	\$ 0.4725	\$ 0.4687	\$ 0.4619	\$ 0.4668	\$ 0.4666	\$ 0.4618
25	Debt Funded Projects	14,059	27,780	32,455	33,112	12,000	12,000	15,000	15,000	12,000
26	Total Base Project/Data Center/Facility Capital	31,523	46,300	54,092	55,187	20,000	20,000	25,000	25,000	20,000
27	Total ERCOT Spending Authorization	149,028	176,762	179,734	215,194	178,669	180,376	188,139	190,999	188,955
28	Note:									
29	Schedule reflects no use of Nodal discretionary funds in the 2011 Preliminary Budget.									

**ERCOT Fiscal Year 2011 Budget**  
**Revenue Requirements Comparison 2011 vs. 2010**  
(in Thousands)

Line	(\$ Thousands)	2010 Budget	2011 Preliminary Budget	Variance	Explanations
1	<b>ERCOT O&amp;M Expense</b>				
2	Labor for Base Operations	59,012	69,947	(10,935)	Increase of 76 FTEs with plan to decrease by 15 FTEs due to efficiencies gained throughout the year \$6.1M; Reward and Recognition program reduced by \$.3M; Separation Benefits estimated at \$.3M; Interns cost included at \$.2M; Credit allocations eliminated \$4.6M
3	Equipment & Tools	1,227	881	346	Reduction in costs for office supplies, equipment maintenance, and non-capitalizable hardware indirectly related to reduction in employee and contractor headcount
4	Outside Services	9,915	7,053	2,862	\$4.1M increase for fixed cost proprietary vendor support; \$3.5M reduction for staff augmentation; \$2.1M eliminated services primarily in System Planning and Financial Services; \$1.7M savings for cost reductions; \$.2M recategorized to Other; \$.1M for Web-based training and courier services new for 2011
5	Utility, Maintenance, & Facilities	6,773	10,156	(3,383)	\$1.7M increase related to addition of Bastrop and TCC3 locations; \$1.5M increase resulting from discontinuation of facilities credit allocation from Nodal and Texas RE
6	Hardware & Software License & Maint.	9,101	17,681	(8,580)	Increase by \$7.8M for support of Nodal applications and equipment
7	Employee Expenses	1,552	1,021	531	Reduced from \$2,100 average for 739 positions to \$1,747 average for 584 positions; lower average based on 2010 spending trend
8	NERC Dues	2,462	11,975	(9,513)	Increase due to Texas RE budget increase following the divestiture in mid 2010
9	Other Expenses	5,211	6,413	(1,201)	Property tax increased by \$1.1M attributable to the additional building in Taylor (TCC3) and in Bastrop (BCC)
10	<b>Subtotal - O&amp;M Expense</b>	<b>95,253</b>	<b>125,126</b>	<b>(29,874)</b>	
11	Debt Service - Interest	5,272	3,515	1,757	Savings resulting from several factors including lower debt balances, utilization of TCR auction receipts, to the extent available, in lieu of borrowing from the revolver credit facility, and lower-than-budgeted interest rates.
12	Debt Service - Principal	26,137	26,200	(63)	
13	Revenue Funded Projects	18,520	22,075	(3,555)	Driven by Nodal post go-live project
14	Protocol Services	1,500	2,466	(966)	Updated estimates for third party performance of protocol services and transition costs from Texas RE
15	Market Monitoring	2,300	2,700	(400)	Contractual increase of \$.2M and Nodal program no longer cost sharing \$.2M
16	<b>Total Revenue Requirement</b>	<b>148,982</b>	<b>182,082</b>	<b>(33,100)</b>	
17	Less: Other Revenue	5,626	15,981	10,355	Increase due to Texas RE budget increase following the divestiture in mid 2010; Revenue from CREZ reactive study and DOE grant were not included in the 2010 budget
18	Less: Interest Income	81	-	(81)	
19	Less: Extraordinary Item Revenue	12,760	5,000	(7,760)	Decreased amount of sales tax refund to use for 2011
20	2010 Carryforward	-	14,420	14,420	Anticipated favorable 2010 budget-to-actual variance to be utilized in 2011
21	Revenue Rqmt from System Admin Fee	\$ 130,515	\$ 146,681	\$ (16,166)	
22	GWh	312,922	310,410	(2,512)	
23	% GWh Growth	1.6%	-0.8%	-0.8%	
24	<b>ERCOT System Administration Fee</b>	<b>\$ 0.4171</b>	<b>\$ 0.4725</b>	<b>\$ (0.0555)</b>	
25	Debt Funded Projects	27,780	33,112	(5,332)	
26	Total Base Project/Data Center/Facility Capital Spending	46,300	55,187	(8,887)	
27	<b>Total ERCOT Spending Authorization</b>	<b>176,762</b>	<b>215,194</b>	<b>(38,432)</b>	

**ERCOT Fiscal Year 2011 Budget**  
**Summary of Estimated Income Sources**

Line	Description	Protocols Reference	Calculation/Rate/Comment	2011 Preliminary Budget		2012 Projected Budget	2013 Projected Budget	2014 Projected Budget	2015 Projected Budget	2016 Projected Budget
				\$	%					
1	ERCOT system administration fee	9.7.1	\$0.4171 per MWh	\$ 146,681,274	90.0%	\$ 149,956,833	\$ 152,509,055	\$ 157,411,324	\$ 159,954,405	\$ 160,586,986
2	NERC Electric Reliability Organization fee	NA	A federally mandated, pass-through charge established to recover an amount approved by FERC for the ERCOT region's share of the annual operating costs of the Electric Reliability Organization.	11,974,880	7.0%	12,226,352	12,483,106	12,745,251	13,012,901	13,286,172
3	Private wide-area network fees	9.7.6	Recovery of a portion of expended costs. Actual cost of using third party communications network, initial equipment installation cost not to exceed \$18,000, and monthly network management fee not to exceed \$865.	2,208,221	1.0%	2,254,594	2,301,940	2,350,281	2,399,637	2,450,029
4	Generation interconnection study fees	NA	• Security screening study fee • Modeling fee	263,025	0.0%	263,025	263,025	263,025	263,025	263,025
5	Grant Funding	NA	Department of Energy	1,165,213	1.0%	1,599,091	450,050	-	-	-
6	Blackstart Training		Cost Sharing	32,500	0.0%	32,500	32,500	32,500	32,500	32,500
7	Interest income	NA	Computed based on assumed bank rates and deposit balances	-	0.0%	-	-	-	-	-
8	Membership dues	NA	\$2,000 for corporate members and \$500 for associate and adjunct members	320,000	0.0%	320,000	320,000	320,000	320,000	320,000
9	Map sale fees	NA	\$20 - \$40 per map request	1,000	0.0%	1,000	1,000	1,000	1,000	1,000
10	Qualified scheduling entity application fee	9.7.5	\$500 per entity	7,500	0.0%	7,500	7,500	7,500	7,500	7,500
11	Competitive retailer application fee	9.7.5	\$500 per entity	7,500	0.0%	7,500	7,500	7,500	7,500	7,500
12	Mismatched schedule processing fee	9.7.4	\$1 per mismatched event	1,000	0.0%	1,000	1,000	1,000	1,000	1,000
13	Voluminous copy fee	NA	\$0.15 per page in excess of 50 pages	-	0.0%	-	-	-	-	-
14	Late fees	9.4.6	Wall Street Journal prime interest rate plus two (2) percent	-	0.0%	-	-	-	-	-
15										
16		Total		<u>\$ 162,662,113</u>	100.0%	<u>\$ 166,669,395</u>	<u>\$ 168,376,675</u>	<u>\$ 173,139,381</u>	<u>\$ 175,999,468</u>	<u>\$ 176,955,712</u>

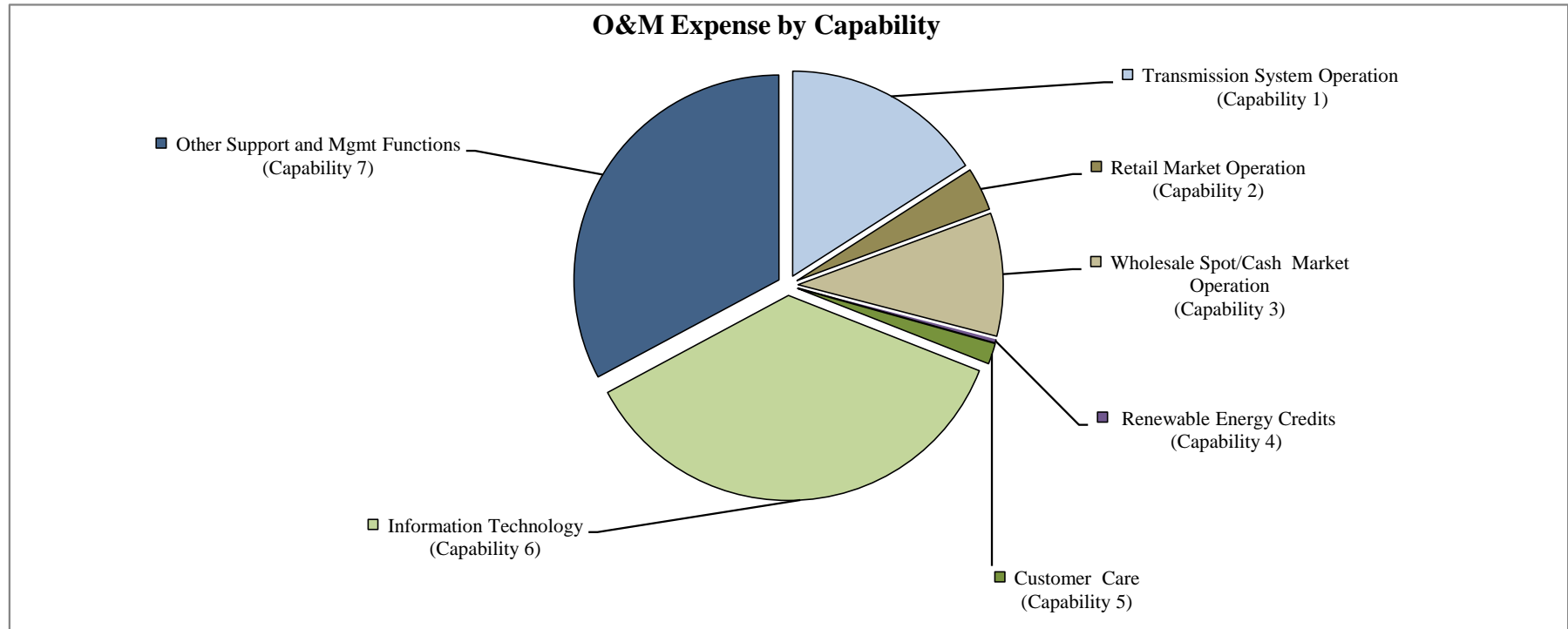
17  
18 Note:  
19 In addition to the items listed above, ERCOT also collects a Nodal market surcharge which is currently \$0.3750 per MWh. The Nodal Surcharge will remain in effect until the costs of implementing the Nodal Program, as approved by the  
20 Public Utility Commission of Texas, are fully recovered.



# ERCOT Fiscal Year 2011 Budget

## O&M Expense by Capability

(in Thousands)



Line	(\$ Thousands)	Transmission System Operation (Capability 1)	Retail Market Operation (Capability 2)	Wholesale Spot/Cash Market Operation (Capability 3)	Renewable Energy Credits (Capability 4)	Customer Care (Capability 5)	Information Technology (Capability 6)	Other Support and Mgmt Functions (Capability 7)	Total
1	ERCOT O&M Expense								
2	Labor for Base Operations	\$ 17,609	\$ 3,290	\$ 10,952	\$ 353	\$ 1,971	\$ 20,941	\$ 14,831	\$ 69,947
3	Equipment & Tools	22	7	15	0	2	320	514	881
4	Outside Services	-	815	148	-	-	4,401	1,689	7,053
5	Utility, Maintenance, & Facilities	1	1	0	-	-	3,727	6,427	10,156
6	Hardware & Software License & Maint.	1,079	39	773	-	54	15,411	325	17,681
7	Employee Expenses	293	39	88	14	16	271	300	1,021
8	NERC Dues	-	-	-	-	-	-	11,975	11,975
9	Other Expenses	922	73	169	-	24	205	5,020	6,413
10	Total - O&M Expense	\$ 19,926	\$ 4,263	\$ 12,145	\$ 368	\$ 2,066	\$ 45,277	\$ 41,082	\$ 125,126



# **ERCOT Fiscal Year 2011 Budget**

## **Labor Workpapers**

**ERCOT Fiscal Year 2011 Budget**

**Staffing by Capability with Comparison to Study Recommendations**

Line	Capability/Group/Service	Comparison to Study				Comments
		Study	ERCOT Service Total	ERCOT Group Total	Variance by Group	
1	<b>1 TRANSMISSION SYSTEM OPERATION</b>					
2	<b>1.1 System Planning</b>	35.00		34.97	(0.03)	
3	1.1.1 Transmission Adequacy Assessment	-	10.08	-	-	
4	1.1.2 Transmission Planning	-	17.78	-	-	
5	1.1.3 Interconnection Planning	-	0.82	-	-	
6	1.1.4 Generation/Resource Adequacy Assessment	-	3.92	-	-	
7	1.1.5 Generation & Load Planning	-	2.37	-	-	
8	<b>1.2 Transmission Connection Management</b>	8.51		5.15	(3.36)	1 Generation Interconnection policing efforts not an ERCOT function.
9	1.2.1 Connection Analysis/Studies	-	3.05	-	-	
10	1.2.2 Connection Scheduling	-	-	-	-	
11	1.2.3 Connection Oversight & Management	-	2.10	-	-	
12	1.2.4 Connection Commissioning	-	-	-	-	
13	<b>1.3 Grid Security Management</b>	23.00		27.08	4.08	2 Unable to reach study recommendation - Extensive workarounds must be eliminated before staffing efficiencies can be achieved. Efficiencies achievement estimate - 1.1.2012
14	1.3.1 Transmission Reliability Assessment	-	6.91	-	-	
15	1.3.2 Security/Contingency Analysis	-	14.92	-	-	
16	1.3.3 Security Coordination	-	3.01	-	-	
17	1.3.4 System Restoration Planning	-	1.06	-	-	
18	1.3.5 Ancillary Services Requirement Determination	-	1.18	-	-	
19	<b>1.4 Outage Coordination/Planning</b>	10.00		10.08	0.08	
20	1.4.1 0	-	8.14	-	-	
21	1.4.2 Resource Outage Coordination/Planning	-	1.94	-	-	
22	<b>1.5 Real-Time System Control</b>	27.51		27.21	(0.30)	
23	1.5.1 Monitor and Control Transmission Network	-	10.67	-	-	
24	1.5.2 Monitor and Control Interconnectors	-	2.00	-	-	
25	1.5.3 Instruct and Monitor Facilities	-	4.02	-	-	
26	1.5.4 Frequency Control (Facilities Real-Time Control)	-	10.52	-	-	
27	1.5.5 Manage System Restoration	-	-	-	-	
28	<b>1.6 Scheduling &amp; Dispatch</b>	-		-	-	Dispatching a function of real-time control today, but will not be necessary in Nodal market.
29	1.6.1 Facilities Scheduling (inc. Unit Commitment)	-	-	-	-	
30	1.6.2 Facilities Dispatch (Energy & Ancillary Services)	-	-	-	-	
31	1.6.3 Interconnection Scheduling	-	-	-	-	

**ERCOT Fiscal Year 2011 Budget**

**Staffing by Capability with Comparison to Study Recommendations**

Line	Capability/Group/Service	Comparison to Study				Comments
		Study	ERCOT Service Total	ERCOT Group Total	Variance by Group	
32	<b>1.7 Forecasting</b>	5.00		5.86	0.86	1 Function of greater importance in ERCOT region than other ISOs
33	1.7.1 Load Forecasting	-	5.26	-	-	
34	1.7.2 Wind Forecasting	-	0.60	-	-	
35	<b>1.8 Operational Testing and Performance Management</b>	3.01		5.46	2.45	1 Increased emphasis on testing and performance management offsets
36	1.8.1 Generator Commissioning Testing	-	-	-	-	
37	1.8.2 Generator Operational Testing	-	1.13	-	-	
38	1.8.3 Generator Black Start Testing	-	0.50	-	-	
39	1.8.4 Generator Performance Assessment	-	1.40	-	-	
40	1.8.5 Load-Participation Performance Assessment	-	2.43	-	-	
41	<b>1.9 Commercial Management</b>	1.00		0.60	(0.40)	
42	1.9.1 Manage Interconnection Capacity Rights Reservation	-	0.60	-	-	
43	1.9.2 Manage Interconnection Capacity Rights Trading	-	-	-	-	
44	1.9.3 Ancillary Services Procurement (Non-Market)	-	-	-	-	
45	1.9.4 Transmission Loss (Adjustment) Factor Determination	-	-	-	-	
46	1.9.5 Network Code/Agreement Management	-	-	-	-	
47	1.9.6 Monitor Network Code/Agreement Compliance	-	-	-	-	
48	<b>1.10 Operational Support</b>	11.50		14.73	3.23	1 Ad hoc reporting requirements can not be eliminated. Study assumption will never be realized.
49	1.10.1 Operations Analysis and Reporting	-	5.71	-	-	
50	1.10.2 Operator Training	-	9.02	-	-	
51	<b>1.11 Compliance Monitoring &amp; Reporting</b>	20.51		21.25	0.74	
52	1.11.1 Dispatch Compliance	-	4.50	-	-	
53	1.11.2 Policy & Procedure Compliance	-	16.75	-	-	
54	<b>1.12 Standards Development</b>	-		1.50	1.50	3
55	1.12.1 Standards Development	-	1.50	-	-	
56						
57	<b>Capability 1 Totals</b>	145.04	153.89	153.89	8.85	
58						

**ERCOT Fiscal Year 2011 Budget**

**Staffing by Capability with Comparison to Study Recommendations**

Line	Capability/Group/Service	Comparison to Study			Variance by Group	Comments
		Study	ERCOT Service Total	ERCOT Group Total		
59	<b>2 RETAIL MARKET OPERATION</b>					
60	2.1 <b>Retailer Registration</b>	3.50		3.41	(0.09)	
61	2.1.1 Retailer Registration & Qualification	-	3.41	-	-	
62	<b>2.2 Customer Switching/Registry</b>	6.52		6.52	-	
63	2.2.1 Customer Choice Information Provision (Awareness Programs)	-	-	-	-	
64	2.2.2 End Customer Registration	-	1.70	-	-	
65	2.2.3 End Customer Transfer	-	4.82	-	-	
66	<b>2.3 Load Profile Determination and Management</b>	3.50		1.20	(2.30)	1 Function primarily captured in Cap. 1.7
67	2.3.1 Load Profile Customer Segment Determination	-	0.50	-	-	
68	2.3.2 Load Profile Management	-	0.20	-	-	
69	2.3.3 Load Profile Parameter Calculation	-	0.50	-	-	
70	<b>2.4 Accumulation Metering, Data Collection and Data Aggregation</b>	1.00		0.83	(0.17)	
71	2.4.1 Meter Installation	-	-	-	-	
72	2.4.2 Meter Maintenance	-	-	-	-	
73	2.4.3 Meter Registration	-	0.36	-	-	
74	2.4.4 Meter Data Collection	-	-	-	-	
75	2.4.5 Meter Data Validation & Substitution	-	0.47	-	-	
76	2.4.6 Profiled Usage Estimation	-	-	-	-	
77	2.4.7 Usage Data Aggregation	-	-	-	-	
78	<b>2.5 Interval/Smart Metering, Data Collection and Data Aggregation</b>	1.00		0.88	(0.12)	
79	2.5.1 Meter Installation	-	-	-	-	
80	2.5.2 Meter Maintenance	-	-	-	-	
81	2.5.3 Meter Registration	-	0.46	-	-	
82	2.5.4 Meter Data Collection	-	-	-	-	
83	2.5.5 Meter Data Validation & Substitution	-	0.42	-	-	
84	2.5.6 Meter Data Aggregation	-	-	-	-	
85	<b>2.6 Bulk Transfer Management</b>	0.49		0.91	0.42	
86	2.6.1 Bulk Transfer Activation	-	0.38	-	-	
87	2.6.2 Bulk Customer Transfer Management	-	0.34	-	-	
88	2.6.3 End Customer Notification	-	0.19	-	-	

**ERCOT Fiscal Year 2011 Budget**

**Staffing by Capability with Comparison to Study Recommendations**

Line	Capability/Group/Service	Comparison to Study				Comments
		Study	ERCOT Service Total	ERCOT Group Total	Variance by Group	
89	<b>2.7 Market Information</b>	2.50		2.70	0.20	
90	2.7.1 Switching Analysis and Reporting	-	1.66	-	-	
91	2.7.2 Retail Market Notice Publication	-	1.04	-	-	
92	<b>2.8 Retail Market Development</b>	6.99		6.96	(0.03)	
93	2.8.1 Policy Definition	-	0.24	-	-	
94	2.8.2 Market Design Definition	-	0.47	-	-	
95	2.8.3 Rules Definition	-	1.50	-	-	
96	2.8.4 Rules Administration	-	2.44	-	-	
97	2.8.5 Procedure Definition	-	0.97	-	-	
98	2.8.6 Procedure Administration	-	1.33	-	-	
99	<b>2.9 Market Oversight</b>	1.50		2.50	1.00	2 Efficiency realization estimated 7.1.2011
100	2.9.1 Policy/Rules Compliance	-	1.45	-	-	
101	2.9.2 Process/Procedure Compliance	-	1.05	-	-	
102	<b>2.10 Dispute Management</b>	3.01		3.06	0.05	
103	2.10.1 Dispute Management	-	3.06	-	-	
104		-		-	-	
105	<b>Capability 2 Totals</b>	<b>30.01</b>	<b>28.97</b>	<b>28.97</b>	<b>(1.04)</b>	
106						

**ERCOT Fiscal Year 2011 Budget**

**Staffing by Capability with Comparison to Study Recommendations**

Line	Capability/Group/Service	Comparison to Study			Variance by Group	Comments
		Study	ERCOT Service Total	ERCOT Group Total		
107	<b>3 WHOLESALE SPOT/CASH MARKET OPERATION</b>					
108	<b>3.1 Participant Registration</b>	2.50		6.60	4.10	
109	3.1.1 Participant Registration & Qualification Management	-	6.60	-	-	2 Web enabled registration not yet available but on Nodal Parking deck. Efficiency achieved in 1.1.2012.  3 Study did not account for LARs and EIS (technical requirements/site visits)
110	<b>3.2 Bidding, Scheduling and Pricing</b>	15.99		16.69	0.70	
111	3.2.1 Bid/Offer Receipt and Management	-	1.21	-	-	
112	3.2.2 Real-Time Market Execution (Dispatch and Pricing)	-	5.68	-	-	
113	3.2.3 Day-Ahead Market Execution (Unit Commitment/Scheduling & Pricing)	-	9.80	-	-	
114	<b>3.3 Wholesale Metering, Data Collection and Data Aggregation</b>	11.50		14.18	2.68	1 Study assumed meter registration efficiencies around EPS site approvals. Value add to the market related to settlement accuracy. Market rules change would be necessary to realize efficiencies.
115	3.3.1 Meter Installation	-	-	-	-	
116	3.3.2 Meter Maintenance	-	-	-	-	
117	3.3.3 Meter Registration	-	6.59	-	-	
118	3.3.4 Meter Data Collection	-	2.17	-	-	
119	3.3.5 Meter Data Validation & Substitution	-	2.17	-	-	
120	3.3.6 Meter Data Aggregation	-	3.25	-	-	
121	<b>3.4 Billing, Settlement &amp; Credit Management</b>	11.95		15.05	3.10	2 Rule change required relating to verifiable costs. 1 (1 FTE) Shadow Settlement efficiency (2 FTEs) If approved, efficiency achieved 1.1.2012.
122	3.4.1 Market Settlement	-	10.05	-	-	
123	3.4.2 Billing	-	2.90	-	-	
124	3.4.3 Payment Management	-	2.10	-	-	
125	<b>3.5 Credit Management</b>	6.00		6.00	-	
126	3.5.1 Credit Risk Management	-	5.00	-	-	
127	3.5.2 Treasury (Cash and Collateral) Management	-	1.00	-	-	
128	3.5.3 Financial Default Process Management	-	-	-	-	
129	<b>3.6 Market Information</b>	9.99		14.05	4.06	
130	3.6.1 Market Data Publication	-	9.25	-	-	2 Study recommends limiting ad hoc reporting and non-monitored automated reporting. Estimated efficiency achievement - 7.1.2011
131	3.6.2 Market Analysis	-	3.67	-	-	
132	3.6.3 Market Notice Publication	-	1.13	-	-	

**ERCOT Fiscal Year 2011 Budget**

**Staffing by Capability with Comparison to Study Recommendations**

Line	Capability/Group/Service	Comparison to Study				Comments
		Study	ERCOT		Variance by Group	
			Service Total	ERCOT Group Total		
133	<b>3.7 CRR/FTR Management</b>	6.00		6.30	0.30	
134	3.7.1 Congestion Revenue Rights Allocation	-	3.00	-	-	
135	3.7.2 Congestion Revenue Rights Auction	-	3.05	-	-	
136	3.7.3 Maintain CRR Registry	-	0.25	-	-	
137	3.7.4 Manage Secondary Trading of CRRs	-	-	-	-	
138	<b>3.8 Wholesale Market Development</b>	14.03		12.17	(1.86)	
139	3.8.1 Policy Definition	-	2.23	-	-	
140	3.8.2 Market Design Definition	-	1.70	-	-	
141	3.8.3 Rules Definition	-	1.50	-	-	
142	3.8.4 Rules Administration	-	4.22	-	-	
143	3.8.5 Procedure Definition	-	0.80	-	-	
144	3.8.6 Procedure Administration	-	1.72	-	-	
145	<b>3.9 Market Oversight/Monitoring</b>	1.99		2.36	0.37	
146	3.9.1 Policy/Rules Compliance	-	2.28	-	-	
147	3.9.2 Process/Procedure Compliance	-	0.08	-	-	
148	3.9.3 Market Surveillance	-	-	-	-	
149	3.9.4 Trade Surveillance	-	-	-	-	
150	<b>3.10 Dispute Management</b>	3.99		4.70	0.71	2 Dispute process rule change required for staffing efficiency. Estimated change 1.1.2012
151	3.10.1 Dispute Management	-	4.70	-	-	
152						
153	<b>Capability 3 Totals</b>	<b>83.94</b>	<b>98.09</b>	<b>98.09</b>	<b>14.15</b>	
154						



**ERCOT Fiscal Year 2011 Budget**

**Staffing by Capability with Comparison to Study Recommendations**

Line	Capability/Group/Service	Comparison to Study				Comments
		Study	ERCOT Service Total	ERCOT Group Total	Variance by Group	
155	<b>4 RENEWABLE ENERGY CREDITS</b>					
156	4.1 REC Definition	0.19	0.19	0.19	-	
157	4.2 Facility Accreditation	0.15	0.15	0.15	-	
158	4.3 Determine REC Obligations and Verify Compliance	0.09	0.09	0.09	-	
159	4.4 Facility Registration	0.19	0.19	0.19	-	
160	4.5 REC Issuance and Retirement	0.37	0.37	0.37	-	
161	4.6 Verify REC Validity	1.47	1.47	1.47	-	
162	4.7 REC Title Tracking	0.22	0.22	0.22	-	
163	4.8 Information Publication	0.28	0.19	0.19	(0.09)	
164						
165	<b>Capability 4 Totals</b>	<b>2.96</b>	<b>2.87</b>	<b>2.87</b>	<b>(0.09)</b>	
166						
167	<b>5 CUSTOMER CARE</b>					
168	5.1 Training & Education Delivery	3.50	2.80	2.80	(0.71)	
169	5.2 Helpdesk Management	3.00	0.55	0.55	(2.45)	
170	5.3 Account Management	8.00	12.55	12.55	4.55	
171						
172	<b>Capability 5 Totals</b>	<b>14.50</b>	<b>15.89</b>	<b>15.89</b>	<b>1.39</b>	4 Increased support work for Level 1 & 2 QSEs and CRR account holders
173						

**ERCOT Fiscal Year 2011 Budget**

**Staffing by Capability with Comparison to Study Recommendations**

Line	Capability/Group/Service	Comparison to Study				Comments
		Study	ERCOT Service Total	ERCOT Group Total	Variance by Group	
174	<b>6 INFORMATION TECHNOLOGY</b>					
175	<b>6.1 IT Application Services</b>	93.00		100.76	7.76	
176	6.1.1 Database Administration	-	11.28	-	-	1 Down 3.42 FTEs from Study - necessary for base support with minor betterments - changes to databases will be captured as projects
177	6.1.2 Corporate Applications	-	7.48	-	-	1 Down 2.53 FTEs from Study- classification adjustment
178	6.1.3 Systems Operations Applications	-	23.44	-	-	1 Up 4.69 FTEs from Study
179	6.1.4 Wholesale Market Operations Applications	-	20.17	-	-	4 Up 1 FTEs from Study because of CMM self support. Disagree with support level of wholesale transaction processing 1
180	6.1.5 Retail Market Operations Applications	-	17.45	-	-	2 Up 7.45 FTEs from Study- potential staffing efficiency possible 1.1.2012 by consolidating tasks and ross training. Testing is not included as recommended by Study
181	6.1.6 Enterprise Integration	-	7.35	-	-	Down .08 FTE from Study
182	6.1.7 Vendor Management	-	3.00	-	-	
183	6.1.8 Release Management	-	6.14	-	-	
184	6.1.9 Other Application Services	-	4.45	-	-	3 Up .45 FTEs from Study - fewer resources for Openview; however, missed capability in data extracts and reporting.
185	<b>6.2 IT Infrastructure Services</b>	46.50		53.24	6.74	
186	6.2.1 Network and Telecom Services	-	10.71	-	-	Down 1.29 FTEs from Study - combined field services, deskside support, deskside imaging, and asset management
187	6.2.2 Server Support	-	15.78	-	-	Down .15 FTE from Study
188	6.2.3 Enterprise Architecture	-	2.50	-	-	Down .74 FTE from Study
189	6.2.4 Enterprise Storage	-	10.55	-	-	1 Up 2.21 FTEs from Study
190	6.2.5 IT Security	-	11.70	-	-	3 Up 4.7 FTEs from Study - Transferred access management effort from IT.
191	6.2.6 Other IT Infrastructure Services	-	2.00	-	-	3 Capacity performance (short term); performance tuning
192	<b>6.3 IT Support</b>	15.00		14.77	(0.23)	
193	6.3.1 Help Desk	-	8.27	-	-	
194	6.3.2 Field Services	-	6.50	-	-	
195	6.3.3 Other IT Support Services	-	-	-	-	
196	<b>6.4 IT Strategy &amp; Planning</b>	6.00		6.96	0.96	
197	6.4.1 IT Strategic Planning, Budgeting	-	2.25	-	-	3 Increased for software compliance management
198	6.4.2 IT Standards	-	1.39	-	-	
199	6.4.3 Other IT Strategy & Planning	-	3.32	-	-	
200						
201	<b>Capability 6 Totals</b>	<b>160.50</b>	<b>175.73</b>	<b>175.73</b>	<b>15.23</b>	
202						

**ERCOT Fiscal Year 2011 Budget**

**Staffing by Capability with Comparison to Study Recommendations**

Line	Capability/Group/Service	Comparison to Study				Comments
		Study	ERCOT Service Total	ERCOT Group Total	Variance by Group	
203	<b>7 OTHER SUPPORT &amp; MANAGEMENT FUNCTIONS</b>					
204	<b>7.1 Executive Support</b>	4.50		4.75	0.25	
205	7.1.1 Office of the CEO	-	3.00	-	-	
206	7.1.3 Board Support	-	1.75	-	-	
207	<b>7.2 Administrative Support</b>	17.51		14.90	(2.61)	
208	7.2.1 Administrative Support	-	14.90	-	-	
209	<b>7.3 Strategy &amp; Business Planning</b>	2.00		2.00	-	
210	7.3.1 Strategy & Business Planning	-	2.00	-	-	
211	<b>7.4 Internal Audit</b>	6.00		5.75	(0.25)	
212	7.4.1 Internal Audit	-	5.75	-	-	
213	<b>7.5 Legal</b>	10.00		13.00	3.00	
214	7.5.1 Regulatory	-	5.50	-	-	
215	7.5.2 Corporate	-	7.50	-	-	2/3 Contract efficiency not realized until 1.1.2012
216	<b>7.6 Finance</b>	18.50		18.50	-	
217	7.6.1 General Accounting & Finance	-	11.50	-	-	
218	7.6.2 Purchasing & Contract Administration	-	6.00	-	-	
219	7.6.3 Payroll	-	1.00	-	-	
220	<b>7.7 Human Resources</b>	8.00		8.00	-	
221	7.7.1 Human Resources	-	8.00	-	-	1 Increase for Compensation & Benefits effort 2 Outsourcing payroll & benefits function - efficiency to be achieved by 7.1.2011.
222	<b>7.8 Facilities/Security</b>	20.00		21.30	1.30	
223	7.8.1 Facilities Management	-	16.00	-	-	3 Increased for Health & Safety Coordination
224	7.8.2 Physical Security	-	5.30	-	-	
225	<b>7.9 Stakeholder Relations</b>	6.00		7.15	1.15	
226	7.9.1 Government and Regulatory Relations	-	5.15	-	-	4 Increased reliability requirement for NERC, ERO, FERC, PUCT response/coordination
227	7.9.2 Communications	-	2.00	-	-	
228	<b>7.10 Project / Program Management</b>	5.00		8.34	3.34	1 Required staff for continuity
229	7.10.1 Project and Program Management	-	8.34	-	-	
230	<b>7.11 Internal Controls &amp; Risk Management</b>	-		5.00	5.00	
231	7.11.1 Internal Controls & Risk Management	-	5.00	-	-	1 2 Staffing Efficiency anticipated 7.1.2011  4 Risk capability not included in Study
232						
233	<b>Capability 7 Totals</b>	<b>97.51</b>	<b>108.69</b>	<b>108.69</b>	<b>11.18</b>	
234						
235						
236	<b>Totals</b>	<b>534.46</b>	<b>584.13</b>	<b>584.13</b>	<b>49.67</b>	

Note:  
 Variance explanations provided based on the following four categories:

1. Disagree with Study assumption(s)	8
2. Study assumption(s) not implemented/realized	28
3. Study missed Capability	11
4. Increased scope of work since Study performed	<u>3</u>
<b>Total</b>	<b>50</b>



# **ERCOT Fiscal Year 2011 Budget**

## **Outside Services Workpapers**

**ERCOT Fiscal Year 2011 Budget**  
**Outside Service Detail - Mandated**

<b>Line</b>	<b>Department</b>	<b>2011 Preliminary Budget</b>	<b>Description of Service(s)</b>	<b>Category</b>
1	EMMS Development	\$ 4,080,000	Resources required for defect fixes, performance issues, security patch management, etc. on proprietary and custom software critical to the Market.	Mandated
2	Retail Client Services & Analysis	814,560	PUCT mandated End User Switch and POLR notifications.	Mandated
3	General Counsel	600,000	Outside Legal Counsel: Outside Legal Services regarding litigation or areas requiring specialized legal knowledge and skills not possessed by in-house legal staff. Expert witness fees, court reporter fees, employment/employee benefits, information technology, intellectual property, security/compliance, tax/financing, governance, insurance/risk management, records management, and related items. The services are necessary to obtain expert advice on all legal issues confronting the company (e.g. Employee Retirement Income Security Act (ERISA), bankruptcy, antitrust, litigation, etc.).	Mandated
4	Board of Directors	554,000	Expenses associated with the ongoing support and administration of the Board of Directors <ul style="list-style-type: none"> <li>• Independent member compensation</li> <li>• Member replacement</li> <li>• Business expense reimbursement</li> <li>• Special meetings and retreats as necessary</li> </ul>	Mandated
5	Accounting & Financial Reporting	125,000	Annual financial statement audit: Mandatory to be compliant with Public Utility Commission of Texas (PUCT) rules. Must be performed by external auditing firm.	Mandated
6	Internal Control Management Program	86,100	SAS 70 Audit is required to be performed by an external independent certified public accounting firm.	Mandated
7	Settlements & Billing Operations	31,992	RMR Contractor to satisfy protocol requirement for audit of RMR (Zonal Protocols Section 22, Attachment F, Section 13; Nodal Protocols Section 22, Attachment B, Section 13). Cost based on historical billing.	Mandated
8	Accounting & Financial Reporting	20,000	Annual IRS form 990 review and filing: This is a required statutory audit, that has to be performed externally.	Mandated
9	Human Resources	15,000	Support for determining the Financial Accounting Standards Board (FASB) 106 Liability for post retiree medical benefits for ERCOT.	Mandated
10	Human Resources	15,000	401k Audit: Federal law requires that ERCOT include audited benefit plan financial statements with its annual Internal Revenue Service (IRS) Form 5500 filing. The benefit plan audits must be performed by an independent audit firm. Loss of the qualified tax status of the benefit plans resulting in significant liability to the company and possible ERCOT employees.	Mandated
11	<b>Subtotal - Mandated Outside Services</b>	<b>\$ 6,341,652</b>		

**ERCOT Fiscal Year 2011 Budget**  
**Outside Service Detail - Discretionary**

<b>Line</b>	<b>Department</b>	<b>2011 Preliminary Budget</b>	<b>Description of Service(s)</b>	<b>Category</b>
12	Technology Services Administration	\$ 321,360	Lawson Hosting - Lower cost to host externally, would require hardware and 3 support specialists to host internally	Discretionary
13	Human Resources	190,000	Immigration Assistance: These fees cover the specialized legal expertise in the immigration area as well as the filing fees associated with the hiring of non-US citizens. These fees are required to recruit for power engineers and certain Information Technology functions. The legal expertise in immigration is a very specialized area and ERCOT does not require a full-time position. Approximate 1/2 of the expense in this area is for legal services and the rest covers the actual fees.	Discretionary
13	Human Resources	60,000	Web Based e-Learning Program: Enables business organizations to maximize business performance through a combination of comprehensive e-learning content, online information resources, flexible learning technologies and support services. It is a 24x7 program with a course library of over 4,000 courses related to Business Development and IT. Program will be used to enhance competencies for job skills and reduce travel costs.	Discretionary
14	Human Resources	60,000	External data and compensation reviews/comparisons, as requested, for specific positions.	Discretionary
15	Facilities Management	50,000	Courier Services required for mail collection, routing and distribution in lieu of FTE	Discretionary
16	Credit Administration	30,000	Ratings service and data feed to ERCOT's new credit program for Nodal. The use of these services is contingent on the Board of Directors approving creditworthiness standards that include ratings.	Discretionary
17	<b>Subtotal - Discretionary Outside Services</b>	<b>\$ 711,360</b>		
18				
19	<b>Total - Base Operations Outside Services</b>	<b>\$ 7,053,012</b>		

**ERCOT Fiscal Year 2011 Budget**  
**Requested Outside Service Not Funded**

<b>Line</b>	<b>Department</b>	<b>2011 Preliminary Budget</b>	<b>Description of Service(s)</b>	<b>Category</b>
20				
21	Critical Infrastructure Security	\$ 300,000	EMMS Security Assessment to comply with NERC CIP 5 R4 and CIP 7 R8	Discretionary
22	Long Term Planning & Policy	200,000	Development of three-phase (PSCad or similar) models of west Texas ERCOT system to allow evaluation of sub-cycle system dynamics. Potential issues include sub synchronous interaction, sub-synchronous resonance, optimization of shunt reactive devices to support wind generation.	Discretionary
23	Mid Term Planning	175,000	Recent dynamic studies have indicated that the load models used for these studies is highly important in determining the results of those studies. Since these studies are increasingly resulting in real costs to the system (congestion, dynamic reactive devices, etc.) in the order of \$100Ms, it is important to validate the appropriateness of these models against real world response.	Discretionary
24	Internal Audit	195,000	Contract labor staff augmentation	Discretionary
25	Long Term Planning & Policy	150,000	Procurement of wind generation patterns, based on actual location of wind farms in ERCOT and actual historical weather data and assuming actual wind turbine technologies installed, for use in planning models to better understand diversity of wind patterns and likely system congestion.	Discretionary
26	Critical Infrastructure Security	150,000	Security penetration assessment of the network perimeter, email and remote access. The assessment will allow ERCOT to respond to the NERC Compliance Action Notice - 0005, Compliance Application CIP-002-3 R3	Discretionary
27	Retail Client Services & Analysis	130,000	Prepare, distribute, and collect results of market participant survey requested by Board of Directors. Perception surveys on conducted on various services offered to the market such as meeting management, website revisions, etc.	Discretionary
28	Human Resources	125,000	University Co-Op program and curriculum development: Services required to develop university curriculum, provide studies and internship programs. This service will be performed along with ERCOT staff.	Discretionary
29	Long Term Planning & Policy	100,000	Procurement of new model for analysis of Expected loss-of-load events (LOLE), assessment of target reserve margin, and expected load carrying capability of variable generation. New model would allow evaluation of the impact of transmission congestion on deliverability of generation reserves.	Discretionary
30	Physical Security	88,000	A 3-year Remote Managed Services Contract with the access control system vendor to provide patching, software upgrades, software updates, corrective procedures and planning, hardware and software specifications and procurement instructions, system network environment schematics and requirement instructions, database system layout, forms and credentials design, access level and alarm configuration. This contract would prevent system down time and possible loss of control of access to critical cyber asset areas as well as provide compliance for CIP7 R1, R3 and CIP3 R6. Currently support is being provided by a security analyst in the Critical Infrastructure Security department on an as available basis.	Discretionary
31	Human Resources	60,000	Benefits Audit(s)/Survey(s): Third party administrator to audit claims paid by benefit providers (medical, dental, vision, etc.) to make sure they are not overpaying claims. Along with benefit surveys to see if we are in line with the market. The audits/survey's do not have to be performed annual, so the estimate listed is based on a couple per year that we would rotate around.	Discretionary
32	Mid Term Planning	50,000	Dynamic studies are increasingly being used to determine system limits and determine system equipment needs. The costs of these limits and equipment is in the order of \$100Ms. It is therefore increasingly important to validate that these models accurately reflect the actual performance of units on the system.	Discretionary
33	Physical Security	50,000	External cyber vulnerability assessment of the Physical Access Control System to comply with NERC CIP Standard CIP-006 R2.2.	Discretionary
34	<b>Total Requested Outside Services Not Funded</b>	<b>\$ 1,773,000</b>		

**ERCOT Fiscal Year 2011 Budget**  
**Outside Service Detail - Mandated**

<b>Line</b>	<b>Department</b>	<b>Description of Service(s)</b>	<b>2011 Preliminary Budget</b>	<b>2012 Projected Budget</b>	<b>2013 Projected Budget</b>	<b>2014 Projected Budget</b>	<b>2015 Projected Budget</b>	<b>2016 Projected Budget</b>
1	EMMS Development	Resources required for defect fixes, performance issues, security patch management, etc. on proprietary and custom software critical to the Market.	\$ 4,080,000	\$ 4,165,680	\$ 4,253,159	\$ 4,342,476	\$ 4,433,668	\$ 4,526,775
2	Retail Client Services & Analysis	PUCT mandated End User Switch and POLR notifications.	814,560	831,666	849,131	866,962	885,169	903,757
3	General Counsel	Outside Legal Counsel: Outside Legal Services regarding litigation or areas requiring specialized legal knowledge and skills not possessed by in-house legal staff. Expert witness fees, court reporter fees, employment/employee benefits, information technology, intellectual property, security/compliance, tax/financing, governance, insurance/risk management, records management, and related items. The services are necessary to obtain expert advice on all legal issues confronting the company (e.g. Employee Retirement Income Security Act (ERISA), bankruptcy, antitrust, litigation, etc.).	600,000	612,600	625,465	638,599	652,010	665,702
4	Board of Directors	Expenses associated with the ongoing support and administration of the Board of Directors <ul style="list-style-type: none"> <li>• Independent member compensation</li> <li>• Member replacement</li> <li>• Business expense reimbursement</li> <li>• Special meetings and retreats as necessary</li> </ul>	554,000	565,634	577,512	589,640	602,023	614,665
5	Accounting & Financial Reporting	Annual financial statement audit: Mandatory to be compliant with Public Utility Commission of Texas (PUCT) rules. Must be performed by external auditing firm.	125,000	127,625	130,305	133,042	135,835	138,688
6	Internal Control Management Program	SAS 70 Audit is required to be performed by an external independent certified public accounting firm.	86,100	87,908	89,754	91,639	93,563	95,528
7	Settlements & Billing Operations	RMR Contractor to satisfy protocol requirement for audit of RMR (Zonal Protocols Section 22, Attachment F, Section 13; Nodal Protocols Section 22, Attachment B, Section 13). Cost based on historical billing.	31,992	32,664	33,350	34,050	34,765	35,495
8	Accounting & Financial Reporting	Annual IRS form 990 review and filing: This is a required statutory audit, that has to be performed externally.	20,000	20,420	20,849	21,287	21,734	22,190
9	Human Resources	Support for determining the Financial Accounting Standards Board (FASB) 106 Liability for post retiree medical benefits for ERCOT.	15,000	15,315	15,637	15,965	16,300	16,643
10	Human Resources	401k Audit: Federal law requires that ERCOT include audited benefit plan financial statements with its annual Internal Revenue Service (IRS) Form 5500 filing. The benefit plan audits must be performed by an independent audit firm. Loss of the qualified tax status of the benefit plans resulting in significant liability to the company and possible ERCOT employees.	15,000	15,315	15,637	15,965	16,300	16,643
11		<b>Subtotal - Mandated Outside Services</b>	<b>\$ 6,341,652</b>	<b>\$ 6,474,827</b>	<b>\$ 6,610,798</b>	<b>\$ 6,749,625</b>	<b>\$ 6,891,367</b>	<b>\$ 7,036,086</b>



## ERCOT Fiscal Year 2011 Budget

### Outside Service Detail - Discretionary

Line	Department	Description of Service(s)	2011	2012	2013	2014	2015	2016
			Preliminary Budget	Projected Budget	Projected Budget	Projected Budget	Projected Budget	Projected Budget
12	Technology Services Administration	Lawson Hosting - Lower cost to host externally, would require hardware and 3 support specialists to host internally	\$ 321,360	328,109	334,999	342,034	349,217	356,550
13	Human Resources	Immigration Assistance: These fees cover the specialized legal expertise in the immigration area as well as the filing fees associated with the hiring of non-US citizens. These fees are required to recruit for power engineers and certain Information Technology functions. The legal expertise in immigration is a very specialized area and ERCOT does not require a full-time position. Approximate 1/2 of the expense in this area is for legal services and the rest covers the actual fees.	190,000	193,990	198,064	202,223	206,470	210,806
14	Human Resources	Web Based e-Learning Program: Enables business organizations to maximize business performance through a combination of comprehensive e-learning content, online information resources, flexible learning technologies and support services. It is a 24x7 program with a course library of over 4,000 courses related to Business Development and IT. Program will be used to enhance competencies for job skills and reduce travel costs.	60,000	61,260	62,546	63,860	65,201	66,570
15	Human Resources	External data and compensation reviews/comparisons, as requested, for specific positions.	60,000	61,260	62,546	63,860	65,201	66,570
16	Facilities Management	Courier Services required for mail collection, routing and distribution in lieu of FTE	50,000	51,050	52,122	53,217	54,334	55,475
17	Credit Administration	Ratings service and data feed to ERCOT's new credit program for Nodal. The use of these services is contingent on the Board of Directors approving creditworthiness standards that include ratings.	30,000	30,630	31,273	31,930	32,600	33,285
18		<b>Subtotal - Discretionary Outside Services</b>	<b>\$ 711,360</b>	<b>\$ 726,299</b>	<b>\$ 741,551</b>	<b>\$ 757,123</b>	<b>\$ 773,023</b>	<b>\$ 789,256</b>
19		<b>Total - Base Operations Outside Services</b>	<b>\$ 7,053,012</b>	<b>\$ 7,201,125</b>	<b>\$ 7,352,349</b>	<b>\$ 7,506,748</b>	<b>\$ 7,664,390</b>	<b>\$ 7,825,342</b>
20								



## **ERCOT Fiscal Year 2011 Budget**

### **Facilities & Equipment Workpapers**

**ERCOT Fiscal Year 2011 Budget  
Facilities Summary by Building  
(\$ in Thousands)**

Line	Building	2009 Actual	2010 Budget	2010 Forecast	2011 Preliminary Budget	2012 Projected Budget	2013 Projected Budget	2014 Projected Budget	2015 Projected Budget	2016 Projected Budget
1	TCC1 and TCC2	\$ 5,690,257	\$ 5,471,848	\$ 5,921,887	\$ 7,052,761	\$ 7,200,869	\$ 7,352,087	\$ 7,506,481	\$ 7,664,117	\$ 7,825,063
2	<i>Square Footage</i>	170,400	170,400	170,400	170,400	170,400	170,400	170,400	170,400	170,400
3	TCC3	\$ -	\$ -	\$ -	\$ 370,377	\$ 378,155	\$ 386,096	\$ 394,204	\$ 402,482	\$ 410,935
4	<i>Square Footage</i>	-	-	-	25,000	25,000	25,000	25,000	25,000	25,000
5	Bastrop	\$ -	\$ -	\$ -	\$ 1,285,777	\$ 1,312,778	\$ 1,340,347	\$ 1,368,494	\$ 1,397,232	\$ 1,426,574
6	<i>Square Footage</i>	-	-	-	35,300	35,300	35,300	35,300	35,300	35,300
7	Met Center	\$ 1,275,568	\$ 1,263,140	\$ 1,292,246	\$ 1,444,135	\$ 956,449	\$ -	\$ -	\$ -	\$ -
8	<i>Square Footage</i>	45,000	45,000	45,000	45,000	22,500	-	-	-	-
9	<b>Total Facilities Costs</b>	<b>\$ 6,965,825</b>	<b>\$ 6,734,988</b>	<b>\$ 7,214,132</b>	<b>\$ 10,153,050</b>	<b>\$ 9,848,251</b>	<b>\$ 9,078,530</b>	<b>\$ 9,269,179</b>	<b>\$ 9,463,832</b>	<b>\$ 9,662,572</b>
10										
11	<i>Total Square Footage</i>	215,400	215,400	215,400	275,700	253,200	230,700	230,700	230,700	230,700
12										
13	Cost per Square Foot	\$ 32.34	\$ 31.27	\$ 33.49	\$ 36.83	\$ 38.90	\$ 39.35	\$ 40.18	\$ 41.02	\$ 41.88

**ERCOT Fiscal Year 2011 Budget**  
**Facilities & Equipment Summary by Account**

Line	Description	2009 Actual	2010 Budget	2010 Forecast	2011 Preliminary Budget	2012 Projected Budget	2013 Projected Budget	2014 Projected Budget	2015 Projected Budget	2016 Projected Budget
1	<b>Utilities</b>									
2	Electricity	\$ 1,632,750	\$ 1,670,000	\$ 1,590,307	\$ 2,042,000	\$ 1,917,429	\$ 1,786,871	\$ 1,824,395	\$ 1,862,708	\$ 1,901,824
3	Water Service	-	-	-	-	-	-	-	-	-
4	Fuel Oil	14,099	12,000	12,959	25,421	25,955	26,500	27,056	27,625	28,205
5	Water/Gas/Sewer/Trash	97,242	75,000	76,473	112,894	107,080	100,972	103,092	105,257	107,467
6	Subtotal - Utilities	1,744,091	1,757,000	1,679,739	2,180,315	2,050,463	1,914,342	1,954,544	1,995,589	2,037,496
7										
8	<b>Rent</b>									
9	Office Rental	936,336	864,000	1,046,897	882,144	671,914	-	-	-	-
10	Miscellaneous Rental	24,750	-	-	25,270	25,801	26,342	26,896	27,460	28,037
11	Storage Rental	91,898	55,200	73,132	81,460	83,171	84,917	86,700	88,521	90,380
12	Subtotal - Rent	1,052,985	919,200	1,120,029	988,874	780,885	111,260	113,596	115,981	118,417
13										
14	<b>Telecom</b>									
15	PBX Lease for ISO	-	-	-	-	-	-	-	-	-
16	Telephone - Local	63,187	68,600	87,195	78,797	80,452	82,141	83,866	85,628	87,426
17	Telephone - Long Distance	126,426	122,930	126,060	153,060	156,274	159,556	162,907	166,328	169,821
18	Telephone - Conf. Calls	3,651	-	-	-	-	-	-	-	-
19	Internet Service	161,559	171,600	144,935	150,517	152,904	155,356	158,619	161,950	165,351
20	Data/Voice Circuits	21,671	21,600	4,994	11,063	11,296	11,533	11,775	12,022	12,275
21	Web Conferencing	198,303	365,000	329,208	368,960	376,708	384,619	392,696	400,943	409,363
22	Subtotal - Telecom	574,798	749,730	692,393	762,398	777,634	793,206	809,863	826,870	844,234
23										
24	<b>WAN</b>	2,940,547	3,130,000	2,826,673	3,095,676	3,160,685	3,227,060	3,294,828	3,364,019	3,434,664
25										
26	<b>Building Maintenance</b>									
27	Building Maintenance	549,729	238,000	613,462	907,897	853,505	799,451	816,239	833,380	850,881
28	Grounds Maintenance	49,300	45,000	46,529	96,995	67,147	37,314	38,098	38,898	39,715
29	Custodial Service	242,582	273,000	226,717	270,378	276,056	281,853	287,772	293,815	299,985
30	Miscellaneous Services	123,080	134,150	139,998	465,518	467,791	470,264	480,139	490,222	500,517
31	Bldg. Security Services	896,643	955,000	905,231	1,385,000	1,414,085	1,443,781	1,474,100	1,505,056	1,536,662
32	Subtotal - Building Maintenance	1,861,334	1,645,150	1,931,937	3,125,787	3,078,583	3,032,662	3,096,348	3,161,371	3,227,760
33										
34	<b>Nodal &amp; Texas RE Allocations</b>	(1,207,930)	(1,466,092)	(1,036,638)	-	-	-	-	-	-
35										
36	<b>Total - Facilities</b>	\$ 6,965,825	\$ 6,734,988	\$ 7,214,132	\$ 10,153,050	\$ 9,848,251	\$ 9,078,530	\$ 9,269,179	\$ 9,463,832	\$ 9,662,572
37										
38	<b>Materials, Supplies, &amp; Equipment</b>									
39	Equipment Maintenance	\$ 116,629	\$ 235,000	\$ 112,741	\$ 122,571	\$ 109,830	\$ 112,136	\$ 114,491	\$ 116,896	\$ 119,350
40	Equipment Rental	88,012	68,000	61,720	84,580	101,671	103,807	105,986	108,212	110,485
41	Hardware < \$1,000	81,388	237,200	150,236	148,723	151,846	155,035	158,290	161,614	165,008
42	Software < \$1,000	88,436	153,100	127,894	143,704	146,722	149,803	152,949	156,161	159,440
43	Misc Equip Repairs	796	2,000	536	406	415	423	432	441	451
44	Vehicle Maintenance	12,887	9,000	10,573	12,624	12,889	13,160	13,436	13,719	14,007
45	Equipment & Tools < \$1,000	240,949	200,000	207,878	200,000	204,200	208,488	212,866	217,336	221,900
46	Office Supplies	113,988	292,716	108,925	117,553	120,022	122,542	125,116	127,743	130,426
47	Chemical Supplies	55,999	30,000	44,486	50,405	39,007	39,826	40,662	41,516	42,388
48	<b>Total - Equipment</b>	\$ 799,084	\$ 1,227,016	\$ 824,990	\$ 880,566	\$ 886,601	\$ 905,220	\$ 924,230	\$ 943,638	\$ 963,455
49										
50	<b>Total Facilities &amp; Equipment</b>	\$ 7,764,909	\$ 7,962,004	\$ 8,039,122	\$ 11,033,616	\$ 10,734,852	\$ 9,983,750	\$ 10,193,408	\$ 10,407,470	\$ 10,626,027

Notes:  
1. Nodal & Texas RE Allocation includes recovery for facility and information technology utilization.  
2. Office rent includes rent for the Met Center location through June 2012 as well as the contract termination fee of \$243K payable in July 2012.

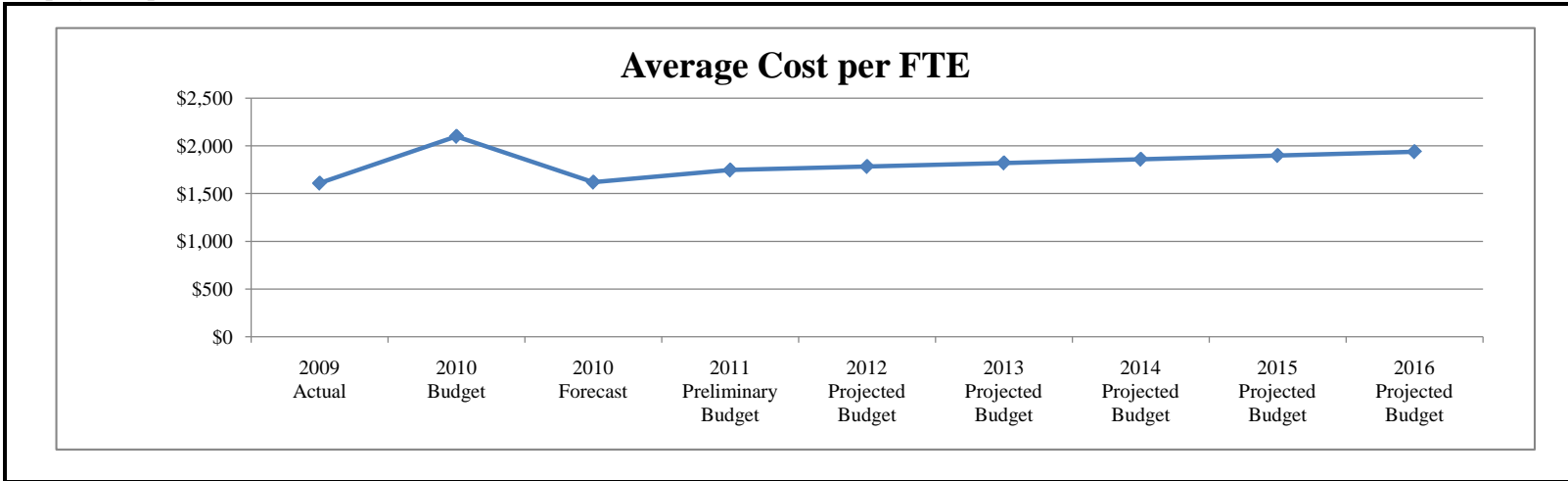


## **ERCOT Fiscal Year 2011 Budget**

### **Employee Expenses Workpapers**

**ERCOT Fiscal Year 2011 Budget**

**Employee Expense**



Line	2009 Actual	2010 Budget	2010 Forecast	2011 Preliminary Budget	2012 Projected Budget	2013 Projected Budget	2014 Projected Budget	2015 Projected Budget	2016 Projected Budget	
1	<b>ERCOT</b>									
2	Training - Registration Fees	\$ 287,074	\$ 522,485	\$ 229,560	\$ 246,619	\$ 251,798	\$ 257,086	\$ 262,484	\$ 267,996	\$ 273,624
3	Cellular Phone	210,885	163,807	212,450	205,988	210,314	214,731	219,240	223,844	228,545
4	Business - Mileage Reimbursemen	98,747	74,329	83,472	81,881	83,601	85,356	87,149	88,979	90,847
5	Training - Travel -Lodging	63,764	150,465	79,606	61,307	62,595	63,909	65,251	66,622	68,021
6	College Education Reimbursement	54,251	35,867	46,848	57,649	58,859	60,095	61,357	62,646	63,961
7	Business - Travel - Lodging	62,299	102,558	65,223	54,259	55,398	56,561	57,749	58,962	60,200
8	Business- Travel - Airfare	33,466	67,828	77,261	53,072	54,186	55,324	56,486	57,672	58,883
9	Remote System Access	49,922	47,902	43,976	42,998	43,901	44,823	45,765	46,726	47,707
10	Professional Dues	35,297	33,049	32,970	35,709	36,459	37,224	38,006	38,804	39,619
11	Wireless PC Card	39,063	37,091	28,661	33,308	34,008	34,722	35,451	36,195	36,955
12	Training - Travel -Other	13,436	23,020	8,843	26,942	27,508	28,086	28,675	29,278	29,893
13	Business - Meals	30,444	31,948	24,774	23,214	23,701	24,199	24,707	25,226	25,756
14	Training - Travel -Airfare	22,767	76,475	28,162	22,684	23,160	23,646	24,143	24,650	25,168
15	Training - Mileage Reimbursement	24,464	66,813	20,469	22,612	23,086	23,571	24,066	24,572	25,088
16	Business - Travel - Other	27,328	21,235	20,972	20,061	20,482	20,912	21,351	21,799	22,257
17	Training - Meals	20,066	39,271	21,812	17,084	17,443	17,810	18,184	18,565	18,955
18	Business - Registration Fees	45,860	57,758	12,146	15,269	15,590	15,917	16,251	16,593	16,941
19	<b>Total - ERCOT</b>	<b>\$ 1,119,132</b>	<b>\$ 1,551,900</b>	<b>\$ 1,037,205</b>	<b>\$ 1,020,655</b>	<b>\$ 1,042,089</b>	<b>\$ 1,063,973</b>	<b>\$ 1,086,316</b>	<b>\$ 1,109,129</b>	<b>\$ 1,132,420</b>
20										
21	FTEs	695	739	640	584	584	584	584	584	584
22										
23	Average Cost per FTE	\$ 1,610	\$ 2,100	\$ 1,621	\$ 1,747	\$ 1,784	\$ 1,822	\$ 1,860	\$ 1,899	\$ 1,939
24										
25	Base Salaries	62,191,333	67,077,120	61,842,355	52,371,790	53,681,085	55,023,112	56,398,690	57,808,657	59,253,873
26										
27	% Cost of Base Salaries	1.80%	2.31%	1.68%	1.95%	1.94%	1.93%	1.93%	1.92%	1.91%



# **ERCOT Fiscal Year 2011 Budget**

## **Other Expenses Workpapers**

## ERCOT Fiscal Year 2011 Budget

### Other Expense Detail

Line	2009 Actual	2010 Budget	2010 Forecast	2011 Preliminary Budget	2012 Projected Budget	2013 Projected Budget	2014 Projected Budget	2015 Projected Budget	2016 Projected Budget	
1	<b>ERCOT</b>									
2	\$ 912,515	\$ 1,325,706	\$ 1,381,572	\$ 2,443,048	\$ 2,494,352	\$ 2,546,733	\$ 2,600,215	\$ 2,654,819	\$ 2,710,571	
3	1,742,811	1,876,837	1,832,555	1,832,639	1,871,124	1,910,418	1,950,537	1,991,498	2,033,319	
4	1,036,655	1,118,266	1,165,327	1,260,459	1,295,529	1,317,722	1,341,705	1,365,428	1,389,649	
5	304,946	360,000	360,000	367,560	375,279	383,160	391,206	399,421	407,809	
6	163,940	114,305	99,740	186,654	151,584	129,391	105,408	81,685	57,464	
7	39,219	106,000	44,262	114,900	117,313	119,776	122,292	124,860	127,482	
8	62,912	40,000	55,708	51,050	52,122	53,217	54,334	55,475	56,640	
9	28,805	63,700	7,607	38,027	38,826	39,641	40,474	41,324	42,191	
10	25,969	19,250	19,536	27,849	28,434	29,031	29,641	30,263	30,899	
11	3,752	65,000	22,674	25,525	26,061	26,608	27,167	27,738	28,320	
12	25,730	35,500	29,163	24,303	24,814	25,335	25,867	26,410	26,964	
13	23,005	42,300	17,236	20,761	21,197	21,642	22,096	22,560	23,034	
14	9,803	18,150	7,650	7,375	7,530	7,688	7,849	8,014	8,182	
15	12,721	11,750	8,550	7,147	7,297	7,450	7,607	7,767	7,930	
16	19,069	14,250	1,458	5,840	5,963	6,088	6,216	6,347	6,480	
17	69,627	-	41,614	-	-	-	-	-	-	
18	Total	\$ 4,481,479	\$ 5,211,014	\$ 5,094,652	\$ 6,413,137	\$ 6,517,423	\$ 6,623,900	\$ 6,732,612	\$ 6,843,608	\$ 6,956,934

Note:  
Subscriptions - Data Services account primarily includes weather and wind related forecasting and modeling services.





# **ERCOT Fiscal Year 2011 Budget**

## **Project Workpapers**

**ERCOT Fiscal Year 2011 Budget  
Project Summary  
(\$ in Thousands)**

Line	Task	2009 Actual	2010 Budget	2010 Forecast	2011 Preliminary Budget	2012 Projected Budget	2013 Projected Budget	2014 Projected Budget	2015 Projected Budget	2016 Projected Budget
1	Project Priority List (PPL)	\$ 43,661	\$ 46,300	\$ 54,092	\$ 41,896	\$ 20,000	\$ 20,000	\$ 25,000	\$ 25,000	\$ 20,000
2	Nodal Stabilization	-	-	-	7,532	-	-	-	-	-
3	Parking Deck	-	-	-	3,250	-	-	-	-	-
4	Deferred Defects & Workarounds	-	-	-	2,509	-	-	-	-	-
5	<b>Total - Project Costs</b>	<b>\$ 43,661</b>	<b>\$ 46,300</b>	<b>\$ 54,092</b>	<b>\$ 55,187</b>	<b>\$ 20,000</b>	<b>\$ 20,000</b>	<b>\$ 25,000</b>	<b>\$ 25,000</b>	<b>\$ 20,000</b>
6										
7	Revenue-Fund Percentage	40%	40%	40%	40%	40%	40%	40%	40%	40%
8										
9	Revenue -Funded Project Costs	<b>\$ 17,464</b>	<b>\$ 18,520</b>	<b>\$ 21,637</b>	<b>\$ 22,075</b>	<b>\$ 8,000</b>	<b>\$ 8,000</b>	<b>\$ 10,000</b>	<b>\$ 10,000</b>	<b>\$ 8,000</b>

**ERCOT Fiscal Year 2011 Budget  
Project Priority List (PPL)**

2011 Priority	2011 Rank	Program Area	Source	Project Number	Capital Projects	2011 Budget Range	Cumulative Budget Range	Current Status	Description
1- Critical	1	DC	ERCOT	Various	Data Center Buildout	\$30M-\$40M	\$30M-\$35M	Planning / Execution	Data Center Buildout Project - 8 subprojects addressing storage, servers, tape backup, telecommunication, and network gear
1- Critical	2	CO	ERCOT	99911	Minor Cap - Critical	\$500k-\$1M	\$30M-\$35M	Not Started	Critical priority Minor Cap purchases
1- Critical	3	RO	Market	11002_01	Texas SET 4.0	\$1M-\$2M	\$35M-\$40M	Not Started	TX SET project to include reconnect / disconnect, AMS, Acquisitions, Meter Tampering
1- Critical	4	MO	ERCOT	90006_02	Information Lifecycle Mgmt – Mkt Systems, Archive, Reporting	\$1M-\$2M	\$35M-\$40M	Planning	Subproject of 90006_01 - optimizing data storage requirements for our commercial systems
1- Critical	5	IO	ERCOT	11003_01	Cyber Security Project #1	\$500k-\$1M	\$35M-\$40M	Not Started	Enhance a specific area of ERCOT's cyber security capability
1- Critical	6	MO	ERCOT	10052_01	Settlement System Upgrade	\$1M-\$2M	\$35M-\$40M	Planning	Replace the current application code with an optimized, self-supported solution. Includes only the conversion of code -- no enhancements.
1- Critical	7	CO	ERCOT	11004_01	Cyber Security Project #2	\$250k-\$500k	\$35M-\$40M	Not Started	Enhance a specific area of ERCOT's cyber security capability
1- Critical	8	IO	ERCOT	11005_01	IT Security Infrastructure Upgrade	\$100k-\$250k	\$35M-\$40M	Not Started	Upgrade a specific component of the IT security infrastructure
1- Critical	9	RO	PUCT / Market	11006_01	MarkeTrak Upgrade and Enhancements (PLANNING)	\$100k-\$250k	\$40M-\$45M	Not Started	Enhance MarkeTrak application for new PUCT requirements and other enhancements requested by market participants. Examples: new subtypes for Expedited Switch Rescission and Meter Tampering, improved data validation, and AMS usage parameters
2-High	10	RO	ERCOT	50088_01	Data Research and Reporting	\$1M-\$2M	\$40M-\$45M	Execution	Transition of ETS reporting from Data Archive to Enterprise Data Warehouse - Final stage of project
2-High	11	MO	ERCOT	10055_01	Data Agg Performance Improvements	\$250k-\$500k	\$40M-\$45M	Initiation	New project to address data aggregation processing performance risk Expected to start in 2010 and conclude in 2011
2-High	12	CO	ERCOT	10031_01	Enterprise Records Management Automation (ERMA)	<\$50k	\$40M-\$45M	Execution	Provide a centralized record management repository for ERCOT with email integration.

**Cutline**

**ERCOT Fiscal Year 2011 Budget  
Project Priority List (PPL)**

2011 Priority	2011 Rank	Program Area	Source	Project Number	Capital Projects	2011 Budget Range	Cumulative Budget Range	Current Status	Description
2-High	13	IO	ERCOT	New	IDM (databases only)	\$500k-\$1M	\$40M-\$45M	Not Started	Eliminate maintenance of two systems to control access to ERCOT systems.
2-High	14	MC	ERCOT	New	Minor Cap - High	\$250k-\$500k	\$40M-\$45M	Not Started	High priority Minor Cap purchases
2-High	15	CO	ERCOT	New	Cyber Security Project #3	\$250k-\$500k	\$40M-\$45M	Not Started	Enhance a specific area of ERCOT's cyber security capability
2-High	16	IO	ERCOT	New	Oracle Access Management	\$250k-\$500k	\$40M-\$45M	Not Started	Replace a manual effort carried out by the DBA's.
2-High	17	IO	ERCOT	New	Cyber Security Project #4	\$100k-\$250k	\$40M-\$45M	Not Started	Enhance a specific area of ERCOT's cyber security capability
2-High	18	MO	Market/ ERCOT	90015_01	Web-enabled Registration	\$100k-\$250k	\$40M-\$45M	Not Started	Create an interface that MPs (and potential MPs) can use to electronically submit and update registration data post nodal go-live.
2-High	19	IO	ERCOT	New	Tripwire	\$100k-\$250k	\$40M-\$45M	Not Started	Tripwire has been deployed for approximately 3 years. To garner further benefit to our investment we would like to deploy a new utility Tripwire has available called Log Center.
2-High	20	IO	ERCOT	New	Storage Replication Strategies	\$50k-\$100k	\$40M-\$45M	Not Started	Resize Ptest and Itest environments
2-High	21	MO	ERCOT	90017_01	ERCOT.com CMS Replacement	\$250k-\$500k	\$45M-\$50M	Not Started	Replace the Serena Collage application and Market Information Repository (MIR)
2-High	22	MO	ERCOT	10006_01	EPS Meter DB Redesign	\$500k-\$1M	\$45M-\$50M	Not Started	Move departmental EPS Meter database and web views due to unsupported compatibility.
2-High	23	IO	ERCOT	New	Secure Storage Bldg	\$250k-\$500k	\$45M-\$50M	Not Started	Facilities secured storage and shop
2-High	24	IO	ERCOT	New	Blue Bldg Reconfig	\$100k-\$250k	\$45M-\$50M	Not Started	Blue Building reconfiguration
2-High	25	CO	ERCOT	10039_01	Physical Security Project #1	\$250k-\$500k	\$45M-\$50M	Not Started	Enhance a specific area of ERCOT's physical security

**ERCOT Fiscal Year 2011 Budget  
Project Priority List (PPL)**

2011 Priority	2011 Rank	Program Area	Source	Project Number	Capital Projects	2011 Budget Range	Cumulative Budget Range	Current Status	Description
3-High/Med	26	MC	ERCOT	New	Minor Cap - Other	\$250k-\$500k	\$45M-\$50M	Not Started	Lower priority Minor Cap items
3-High/Med	27	IO	ERCOT	New	OS Upgrades	\$250k-\$500k	\$45M-\$50M	Not Started	Upgrade Windows, Linux, AIX and other supporting applications to the latest versions.
3-High/Med	28	MO	ERCOT	New	AppWorx Upgrade	TBD	\$45M-\$50M	Not Started	Upgrade to newer version.
3-High/Med	29	RO	ERCOT	New	Rearchitecture of Zonal TIBCO Framework (to be consistent with Nodal)	TBD	\$45M-\$50M	Not Started	Upgrade to Zonal TIBCO to be consistent with Nodal TIBCO
3-High/Med	30	RO	ERCOT	10004_01	Retail Testing Website Enhancement	\$250k-\$500k	\$45M-\$50M	Not Started	ERCOT upgrade to transition to Enterprise Architecture approved infrastructure. No functional changes planned.
3-High/Med	31	RO	ERCOT	New	Siebel Table Split	TBD	\$45M-\$50M	Not Started	The objective of this project is to make modifications to the Siebel data model to gain performance efficiencies and comply with Siebel technical data architecture guidelines.
3-High/Med	32	RO	ERCOT	New	Siebel Upgrade	TBD	\$45M-\$50M	Not Started	The objective of this project is to upgrade Siebel to the latest Siebel release.
3-High/Med	33	RO	ERCOT	10050_01	TIBCO Upgrade	\$100k-\$250k	\$45M-\$50M	Not Started	This project will upgrade ERCOT's TIBCO infrastructure and underlying Linux Operating System (Zonal only).
3-High/Med	34	IO	ERCOT	New	TCC2 Delivery Room Reconfig	\$250k-\$500k	\$45M-\$50M	Not Started	TCC2 Delivery Room reconfiguration
3-High/Med	35	IO	ERCOT	New	TCC2 Cube Reconfig	\$500k-\$1M	\$50M-\$55M	Not Started	TCC2 Cube reconfiguration
3-High/Med	36	IO	ERCOT	New	TCC2 Hope Room Reconfig	\$250k-\$500k	\$50M-\$55M	Not Started	TCC2 Hope Room reconfiguration
3-High/Med	37	IO	ERCOT	New	TCC1 Cube Reconfig	\$500k-\$1M	\$50M-\$55M	Not Started	TCC1 1st floor cubicle reconfiguration
3-High/Med	38	IO	ERCOT	New	Windows 7	\$100k-\$250k	\$50M-\$55M	Not Started	Windows 7 upgrade
4-Medium	39	MO	Market	New	Default Uplift Process	TBD	\$50M-\$55M	Not Started	Modify the existing Lodestar uplift functionality to support uplift of defaults on DAM Invoices and RTM Invoices through a Default Uplift Invoice, in an automated fashion.
4-Medium	40	MO	Market	10008_01	Enhancements to API for Disputes	TBD	\$50M-\$55M	Not Started	Enhance the API Disputes functionality for updates, search and other functions post nodal go-live.
4-Medium	41	MO	ERCOT	90006_03	System Right-Sizing for ILM	TBD	\$50M-\$55M	Not Started	All systems coming online with Nodal - need to establish ongoing maintenance activities. Replication from Nodal systems. CRR, CMM sources only.

**ERCOT Fiscal Year 2011 Budget  
Project Priority List (PPL)**

2011 Priority	2011 Rank	Program Area	Source	Project Number	Capital Projects	2011 Budget Range	Cumulative Budget Range	Current Status	Description
4-Medium	42	CO	ERCOT	70015_01	Cyber Security Project #5	\$100k-\$250k	\$50M-\$55M	Not Started	Enhance a specific area of ERCOT's cyber security capability
4-Medium	43	RO	ERCOT	New	Test Automation Tool Upgrade	TBD	\$50M-\$55M	Not Started	Affects anything using WinRunner today
4-Medium	44	CO	ERCOT	10030_01	Vendor Contract Information Database Review	<\$50k	\$50M-\$55M	Not Started	Move the management of vendors and vendor contracts from the current, in-house developed application to a best-practice model
4-Medium	45	CO	ERCOT	New	Cyber Security Project #6	TBD	\$50M-\$55M	Not Started	Enhance a specific area of ERCOT's cyber security capability
4-Medium	46	CO	ERCOT	New	Cyber Security Project #7	TBD	\$50M-\$55M	Not Started	Enhance a specific area of ERCOT's cyber security capability
4-Medium	47	CO	ERCOT	10049_01	Collateral Calculation Enhancement	\$100k-\$250k	\$50M-\$55M	Not Started	
9-Parking Lot		RO	PUCT	90007_01	Advanced Metering – Long-Term Settlement Solution	TBD	TBD	Not Started	
9-Parking Lot		MO	Market	10007_01	Verifiable Cost Management System (VCMS)	TBD	TBD	Not Started	
9-Parking Lot		CO	ERCOT	10029_01	Governance, Risk & Compliance (GRC)	TBD	TBD	Not Started	
9-Parking Lot		CO	ERCOT	10032_01	App Log Centralization	TBD	TBD	Not Started	
9-Parking Lot		CO	ERCOT	10043_01	BOD Material Preparation & BOD Resolution Tracking	TBD	TBD	Not Started	
9-Parking Lot		CO	ERCOT	10045_01	Document Preparation Software - Legal	TBD	TBD	Not Started	
9-Parking Lot		CO	ERCOT	10046_01	Lawson Pcard Module	TBD	TBD	Not Started	
9-Parking Lot		CO	ERCOT	New	Open Enrollment	TBD	TBD	Not Started	
9-Parking Lot		IO	ERCOT	New	Oracle Upgrade	TBD	TBD	Not Started	
9-Parking Lot		MO	ERCOT	New	Rewrite REC Program	TBD	TBD	Not Started	

**ERCOT Fiscal Year 2011 Budget  
Proposed Nodal Post Go-Live Changes**

<b>Line</b>	<b>Task</b>	<b>2011 Budget Estimate</b>	<b>HW/SW</b>	<b>Vendor</b>	<b>FTE</b>	<b>Staff Augmentation</b>	<b>Notes</b>
1	Nodal Stabilization - Operational Response, Production Issues and Stability	\$ 11,263,817	\$ -	\$ 6,817,500	\$ 2,783,284	\$ 1,663,033	
2	Daylight Savings Time & Planning Model Functionality	41,276	-	-	41,276	-	
3	Zonal Decommissioning Efforts	307,008	-	-	307,008	-	
4	Deferred Defects & Workarounds	2,509,110	-	1,044,147	1,220,396	244,567	50% defects delivered in 2011
5	Parking Deck - Initial Release Impact Analysis/Requirements/Design	3,250,000	-	650,000	1,300,000	1,300,000	Planning/Design activities in 2011
6	Hardware & Software Maintenance	7,820,047	7,820,047	-	-	-	
7	<b>Post Go-Live Support Total</b>	<b>\$ 25,191,258</b>	<b>\$ 7,820,047</b>	<b>\$ 8,511,647</b>	<b>\$ 5,651,964</b>	<b>\$ 3,207,600</b>	

# Nodal Post Go-Live Support

## 1. Nodal Stabilization Project

### 1.1. Objectives

- Provide support for increased volume of questions and disputes
- Ensure quick analysis for Nodal issues
- Deliver system functionality based on priority and urgency
- Ensure adequate resources to quickly address system performance and stability issues

### 1.2. Scope Definition

#### 1.2.1. In Scope

Scope Item	Description	Notes/Assumptions
Operational Response, Production Issues and Stability	Includes ERCOT Business and IT labor to address spikes in day-to-day operations to support volume of work above normal expectations: <ul style="list-style-type: none"> <li>• Response to stakeholder questions / external communications</li> <li>• Issue analysis to address impacts across grid, markets, services, finance, reporting and legal functions</li> <li>• Expected higher volume of settlement disputes due to market start-up and complexity</li> <li>• Anticipated additional training and workshops to respond to stakeholder needs</li> <li>• Remediation of production issues</li> </ul>	<ul style="list-style-type: none"> <li>• Stabilization is defined as 7-month period Dec 2010 – Jun 2011</li> <li>• IT vendor costs are for period Dec 2010 – Dec 2011</li> </ul>

#### 1.2.2. Out of Scope

- Any base operations activities supporting normal day-to-day operations
- Other components of the Nodal Post Go-Live Support effort
  - Delivery of Daylight Savings Time and Planning Model functionality
  - Decommission of zonal wholesale systems
  - Nodal deferred defects
  - Nodal Parking Deck items
  - HW & SW operations maintenance for Nodal systems
- Other capital projects on the 2011 PPL



## 2. Other Nodal Post-Go Live Support Components

Scope Item	Description	Notes/Assumptions
Delivery of Daylight Savings Time and Planning Model functionality	Includes development, testing and implementation to address Daylight Savings Time (DST) and Planning Model (MOD) functionality required by Q1 2011	<ul style="list-style-type: none"> <li>Targeting a 2-3 month effort to begin in Dec 2010 and deliver by Mar 2011</li> </ul>
Decommission of zonal wholesale systems and components	<p>Includes the complete decommission (code, data, instances) of the following zonal wholesale systems that will no longer be used post nodal go-live:</p> <ul style="list-style-type: none"> <li>TCR (TCR auction Solver (LINDO), TCR GUI, Database)</li> <li>OS</li> <li>MPIM Zonal Code</li> <li>EMMS (EMS &amp; MMS)</li> <li>ICCP</li> <li>SMP (SCADA Management Platform)</li> <li>Zonal OTS</li> <li>Zonal BTS</li> <li>MOS – Sender &amp; Listener</li> <li>Zonal Weather/Load Forecast</li> <li>Zonal DC Tie</li> <li>ERCOTPROD domain (required by sender) equivalent in other environments (itest/dev)</li> <li>MOSPublic</li> <li>MOS TML (ERCOT PUC &amp; ERCOT PRP)</li> <li>Zonal Dynamic Ratings</li> <li>Report Runner</li> <li>Removal of NON_Retail TML links</li> <li>Retail Lite Environment</li> <li>EIS Collateral Calc (FINANCE Schema in ISM)</li> <li>ISM replication components (code components only, no data destruction)</li> <li>Lodestar Appworx zonal jobs</li> <li>Lodestar ITOxNDL itest databases</li> <li>Nodal iTest MIR instance</li> <li>PI code</li> <li>Zonal Siebel Code</li> </ul>	<ul style="list-style-type: none"> <li>Planning to start in Dec 2010</li> <li>Decommission beginning Jan 2011 (2-3 month duration over maintenance release windows)</li> </ul>

Scope Item	Description	Notes/Assumptions
	<ul style="list-style-type: none"> <li>• All EMIL Products (extracts, reports, web services, etc.) identified as “Zonal - will retire” including historical files in MIR, except those under RRS legal retention requirements.</li> <li>• NDC (Schema in ISM, consists of views pointing to ERCOT schema in ISM)</li> <li>• EIS ETL</li> <li>• EIP/Retail Tibco code responsible for wholesale/EMS/data extract.</li> <li>• Applicable Appworx jobs for listed components, products &amp; jobs</li> <li>• Wholesale FTP job on intranet server</li> <li>• Migrate CERT servers to MOTE/SOTE VLAN; combine services; decommission redundant servers/services.</li> <li>• Removal of legacy pre-go live data from NPROD</li> <li>• Any other “only-zonal” component, product, system, data, database, etc, that is deemed disposable after nodal go-live</li> </ul>	
Delivery of Nodal Deferred Defects & Workarounds	<p>Includes development, testing and implementation to remediate 50% of Nodal deferred defects, based on priority, for the following systems:</p> <ul style="list-style-type: none"> <li>• EMS – estimated 10 month effort</li> <li>• CMM – estimated 3 month effort</li> <li>• EIP – estimated 4 month effort</li> <li>• DAM – estimated 1 month effort</li> <li>• MOD – estimated 1 month effort</li> <li>• NMMS – estimated 2 month effort</li> <li>• MMS – estimated 3 month effort</li> <li>• REG – estimated 1 month effort</li> <li>• S&amp;B – estimated 3 month effort</li> <li>• CSI – estimated 1 month effort</li> </ul>	<ul style="list-style-type: none"> <li>• Assumes 50% of deferred defects will be remediated in 2011, with majority of concentration between Jun-Dec 2011</li> <li>• Where possible, defect will be addressed sooner, to coincide with Stabilization releases</li> <li>• All systems except for EMS are targeting a 3-6 month effort</li> <li>• EMS will have target 5 releases and require a 10-month effort</li> </ul>
Nodal Parking Deck – Initial Release Planning/Design	<p>Impact analysis, requirements, and design activities to address Parking Deck items as part of the initial release (note: this list is not inclusive of all Parking Deck items; the items listed below are proposed due to shared functionality/applications base, as well as some high priority stand-alone items)</p> <ul style="list-style-type: none"> <li>• NRR208 – Registration and Settlement of Distributed Generation (DG) Less Than 1 MW</li> <li>• NRR258 – Sync with PRR824 and PRR833 and Additional Clarifications</li> </ul>	<ul style="list-style-type: none"> <li>• Final list of items will require Market confirmation</li> <li>• Execution and delivery will be funded under future year PPL</li> <li>• Other parking deck items not included in this effort, will also be delivered as part of future year PPL</li> <li>• Cost estimate assumes mid-range estimate of cost</li> </ul>

Scope Item	Description	Notes/Assumptions
	<ul style="list-style-type: none"> <li>• NPPR131 – Ancillary Service Trades with ERCOT</li> <li>• NPPR207 – Unit Deselection</li> <li>• NPPR146 – ICCP Telemetry Information Submittals</li> <li>• NPPR210 – Wind Forecasting Change to P50, Sync with PRR841</li> <li>• NPPR222 – Half-Hour Start Unit RUC Clawback</li> <li>• NPPR251 – Sync of PRR845, Definition for IDR Meters and Optional Removal of IDR Meters at a Premise Where an Advanced Meter Can be Provisioned</li> <li>• NPPR181 – FIP Definition Revision</li> <li>• SCR759 – acLineSegment Name Length Increase in Information Model Manager (IMM)</li> <li>• NPPR240 – Proxy Energy Offer Curve</li> <li>• SCR755 – ERCOT.com Website Enhancements</li> <li>• NMMS API</li> <li>• CRR API</li> <li>• MMS Multiple Network Models</li> <li>• Large Wind Power Production Ramp Forecasting Phase 2</li> <li>• TML Transition to MIS</li> <li>• Update Credit PFE (Potential Future Exposure) Model</li> </ul>	
HW & SW Maintenance	Year 1 of hardware and software maintenance associated with Nodal systems	<ul style="list-style-type: none"> <li>• From 2011 IT budget submission</li> </ul>



## ERCOT Fiscal Year 2011 Budget

### Nodal Post Go-Live Support - Daylight Saving Time & Planning Model Defects

#### Time and Cost Estimate - Project Information and Summary

##### PART A Project Information

**Project Number:** TBD  
**Project Title:** Nodal Deferred Defects  
**Estimator's Name:** Martinez/Lowe  
**Department:** Nodal PMO - Integration and Systems  
**Sponsor's Name:** Cleary  
**Estimate Date:** 8/30/2010

**What are We Doing:** DST and MOD (Planning Model) defects before Q111 end. This document provides a bottom up estimate of the effort it requires to resolve these before Mar 2011.

**Why are We Doing This:** These are required to be resolved before DST (short day) and 2011 Planning Model Go-Live.

**Why Now:** These were originally deferred to 2011 since they were not needed on Operating Day 1 - 12/01/2010, but will be needed before DST happens in Mar 2011.

##### Estimated Cost

Internal Labor	\$38,720
External Labor	-
Hardware	-
Licenses	-
Maintenance	-
Other	-
<b>Sub-Total</b>	<b>\$38,720</b>
Est. Finance Charges	2,556
<b>TOTAL</b>	<b>\$41,276</b>

##### Estimated Effort (Hrs)

Internal	352.0
External	-

##### Estimated Project Duration

Weeks	12.0
-------	------

##### Labor Rates

Internal	100.0
External	

##### Key Risks

- 1.) Nodal go-live emergencies may consume business and development resources which will delay and
- 2.) Nodal Operations and Dispute volumes require more external resources than estimated for test
- 3.) Environment availability and coordination with other mandated or business required efforts could
- 4.) Infrastructure projects need careful coordination with code releases

##### Key Assumptions

- 1.) Based on \$100 blended rate to account for incremental staff aug. as needed
- 2.) Assumes 10% Contingency for bug iterations

**ERCOT Fiscal Year 2011 Budget**  
**Nodal Post Go-Live Support - Zonal Decommission**

**Time and Cost Estimate - Project Information and Summary**

**PART A Project Information**

**Project Number:** TBD  
**Project Title:** Decommission of Zonal Wholesale Systems  
**Estimator's Name:** Martinez/Lowe  
**Department:** TBD  
**Sponsor's Name:**  
**Estimate Date:** 9/7/2010

**What are We Doing:** The objective is to eliminate zonal wholesales systems and components that will no longer be used post nodal go-live.

**Why are We Doing This:** Decommissioning of the zonal systems will be necessary in order to eliminate the cost overhead of support, maintenance and storage required to continue to service these systems that are no longer used. Leaving these systems active too long may risk interference with daily operations and eat into support resources better used for nodal operations or other projects.

**Why Now:** After go-live of the redesigned ERCOT wholesale market (Nodal), certain ERCOT systems and components that were only applicable to zonal wholesale operations will become disposable and need to be decommissioned.

**Estimated Cost**

Internal Labor	\$288,000
External Labor	-
Hardware	-
Licenses	-
Maintenance	-
Other	-
<b>Sub-Total</b>	<b>\$288,000</b>
Est. Finance Charges	19,008
<b>TOTAL</b>	<b>\$307,008</b>

**Estimated Effort (Hrs)**

Internal	2,880.0
External	-

**Estimated Project Duration**

Weeks	15.0
-------	------

**Labor Rates**

Internal	100.0
External	150.0

**Key Risks**

- 1.) Clean up of some extracts, reports, files, etc, may be constrained by the need to retain records (as defined

**Key Assumptions**

- 1.) Assumes 3.5 month effort
- 2.) Assumes systems on scope tab

**ERCOT Fiscal Year 2011 Budget**  
**Nodal Post Go-Live Support - Deferred Defects**

<b>System</b>	<b>Defects to be Resolved by Go-Live</b>	<b>Deferred Defects</b>	<b>Comments</b>
<b>MMS</b>	Total : 17	Total: 63	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> <li>•17 Defects to be resolved by 11/05</li> </ul> <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> <li>•51 Deferred defects require a workaround, 48 workarounds in place and exercised. 3 in progress to complete by 10/05</li> </ul>
<b>EMS</b>	Total: 19	Total: 347	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> <li>•19 Defects to be resolved by 11/05</li> </ul> <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> <li>•119 Deferred defects require a workaround, 116 workarounds in place and exercised. 3 in progress to complete by 10/05</li> </ul>
<b>COMS</b>	Total: 2	Total: 62	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> <li>•2 Defects to be resolved by 10/17 (test completion on 10/08, must migrate on Retail Outage Cycle)</li> </ul> <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> <li>•34 Deferred defects require a workaround, all 34 workarounds in place and exercised</li> </ul>
<b>CMM</b>	Total: 1	Total: 51	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> <li>•1 Defect to be resolved by 10/08</li> </ul> <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> <li>•12 Deferred defects require a workaround, all 12 workarounds in place and exercised</li> </ul>
<b>MIS</b>	Total: 24	Total: 9	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> <li>•24 Defects to be resolved by 10/15/2010</li> </ul> <p><i>Deferred Defects</i></p> <ul style="list-style-type: none"> <li>•2 Deferred defects require a workaround, both workarounds in place and exercised</li> </ul>
<b>NMMS</b>	Total: 0	Deferred: 10	<p><i>Delivery Schedule</i></p> <ul style="list-style-type: none"> <li>•None</li> </ul>

**ERCOT Fiscal Year 2011 Budget**  
**Nodal Post Go-Live Support - Deferred Defects**

<b>System</b>	<b>Defects to be Resolved by Go-Live</b>	<b>Deferred Defects</b>	<b>Comments</b>
			<i>Deferred Defects</i> <ul style="list-style-type: none"> <li>•9 Deferred defects require a workaround, all 9 workarounds in place and exercised</li> </ul>
<b>OS</b>	Total: 1	Total: 125	<i>Delivery Schedule</i> <ul style="list-style-type: none"> <li>•1 Defect to be resolved by 10/08</li> </ul>
			<i>Deferred Defects</i> <ul style="list-style-type: none"> <li>•39 Deferred defects require a workaround, all 39 workarounds in place and exercised</li> </ul>
<b>CRR</b>	Total: 3	Total: 5	<i>Delivery Schedule</i> <ul style="list-style-type: none"> <li>•3 Defects to be resolved by 10/08</li> </ul>
			<i>Deferred Defects</i> <ul style="list-style-type: none"> <li>•3 Deferred defects require a workaround, all 3 workarounds in place and exercised</li> </ul>
<b>EIP</b>	Total: 4	Total: 62	<i>Delivery Schedule</i> <ul style="list-style-type: none"> <li>•4 Defects to be resolved by 10/15</li> </ul>
			<i>Deferred Defects</i> <ul style="list-style-type: none"> <li>•7 Deferred defects require a workaround, all 7 workarounds in place and exercised</li> </ul>
<b>CDR</b>	Total: 16	Total: 7	<i>Delivery Schedule</i> <ul style="list-style-type: none"> <li>•16 Defects to be resolved by 10/15</li> </ul>
			<i>Deferred Defects</i> <ul style="list-style-type: none"> <li>•4 Deferred defects require a workaround, all 4 workarounds in place and exercised</li> </ul>
<b>EIS</b>	Total: 17	Total: 8	<i>Delivery Schedule</i> <ul style="list-style-type: none"> <li>•12 Defects to be resolved by 10/15</li> <li>• 5 defects to be resolved by 11/19</li> </ul>
			<i>Deferred Defects</i> <ul style="list-style-type: none"> <li>•5 Deferred defects require a workaround, all 5 workarounds in place and exercised</li> </ul>



**ERCOT Fiscal Year 2011 Budget**  
**Nodal Post Go-Live Support - Parking Deck**

	Item	Desc	Status	Priority	Impacted Systems	Details
<b>Board Approved Items</b>	NPRR208	Registration and Settlement of Distributed Generation (DG) Less Than 1 MW	Board approved 7/20/10	Critical	COMS	Revises the formula for Settlement of electricity consumption and out-flow by Customers with renewable Distributed Generation (DG). The revised formula fulfills the provisions of PUC Rule 25.213 that requires ERCOT to develop DG Settlement processes that “reflect the time of generation.” In order to fully synchronize the Protocols with the intent of the Rule as soon as practicable, ERCOT supports implementation of the grey-boxed language in NPRR208 as a “Critical” priority.
	NPRR131	Ancillary Service Trades with ERCOT	Board approved 1/19/10	High	MMS, CMM, COMS, EIP, EDW, CDR	Allows QSEs representing resources to procure A/S in the DAM
	NPRR146	ICCP Telemetry Information Submittals	Board approved 6/15/10	High	NMMS	Allows NOMCRs that modify only ICCP data object names to be submitted within 15 days of the network model load date Possible resolution with business process changes
	NPRR181	FIP Definition Revision	Board approved 1/19/10	High	MMS, COMS, EIP	Revises the definition of Fuel Index Price (FIP) to correctly account for the timing difference between ERCOT’s application of FIP in its systems (midnight to midnight) and the timing of natural gas prices reflected by the index (i.e., hour ending 1000 to 0900).
	NPRR207	Unit Deselection	Board approved 7/20/10	High	MMS	Defers two changes: 1 – hourly RUC notification of recommended but deselected resources in RUC 2 – prevent QSEs from increasing Energy Offer Curves after a RUC Notification
	NPRR210	Wind Forecasting Change to P50, Sync with PRR841	Board approved 6/15/10	High	COMS	This NPRR changes the wind forecast from the 80% probability to 50%. This change is also effective in determining if a QSE is capacity short. The boxed language changes the capacity short calculation back to the 80% forecast.
	NPRR222	Half-Hour Start Unit RUC Clawback	Board approved 7/20/10	High	MMS, COMS	Removed from original NPRR207 language. Removes RUC clawback on Half-Hour Start Units in certain circumstances. Also changes the RUC Clawback on Half-Hour Start Units that did not participate in the DAM to 50%.
	NPRR153	Generation Resource Fixed Quantity Block Offer	Board approved 1/19/10	Medium	MMS, EIP, EDW, CDR	Allows a fixed quantity and time block bid for Offline Non-Spin with the contingency that all hours be purchased in the block
	NPRR164	Resubmitting Ancillary Service offers in SASM	Board approved 1/19/10	Medium	MMS, EIP, EDW, CDR	Allows QSEs to take full advantage of A/S and energy co-optimization in the DAM and participate in the Supplemental Ancillary Service Market (SASM) by being able to resubmit A/S Offers at the higher of DAM MCPC or its offer price in the DAM.
	SCR755	ERCOT.com Website Enhancements	Board approved 2/16/10	Medium	ERCOT.com, Web Services, Collage	Implementation of 10 improvements to ERCOT.com received in the 2008 Market Participant Survey. Includes document archiving, search improvements, training, meeting calendar enhancements, and RSS feeds.

**ERCOT Fiscal Year 2011 Budget**  
**Nodal Post Go-Live Support - Parking Deck**

	Item	Desc	Status	Priority	Impacted Systems	Details
In-flight Items	NPRR240	Proxy Energy Offer Curve	Pending at Board	High / Medium	MMS, CDR (possibly others)	One grey-box section: "Energy Offer Curves that were constructed in whole or in part with proxy Energy Offer Curves shall be so marked in all ERCOT postings or references to the energy offer."
	NPRR241	Aggregate Incremental Liability (AIL) Calculation and Credit Reports Publish Corrections	Pending at Board	Medium	TBD	One grey-box section: Changes the alternate posting format for 3 reports from XLS to XML (in addition to PDF).
	NPRR251	Sync of PRR845, Definition for IDR Meters and Optional Removal of IDR Meters at a Premise Where an Advanced Meter Can be Provisioned	Pending at Board	High	TBD	Grey-boxes language requiring IDR meters if usage warrants. Current language exempts situations where Advanced Meters have been installed. Also gray-boxes related reporting requirements for ERCOT.
	NPRR256	Synchronize Nodal Protocols with PRR787, Add Non-Compliance Language to QSE Performance Standards	Pending at NATF	TBD	EMS, EDW	Seeks to exempt generation resources from GREDP calculation during testing and qualification periods. Not really a sync because additional exemptions to GREDP (Generation Resource Energy Deployment Performance) calculation are included
	NPR257	Synchronization with Nodal Operating Guide Section 9, Monitoring Programs	Pending at PRS	TBD	CDR, EDW (possibly others)	Grey-boxes multiple sections of the Nodal Protocols to align with Nodal Operating Guide Section 9, Monitoring Programs. Through NOGRR025, ERCOT agreed to provide certain reports either during market trials, on a limited basis for specific intervals as requested by the PUCT, TRE and the IMM, or after TNMID.
	NPRR258	Sync with PRR824 and PRR833 and Additional Clarifications	Pending at PRS	Critical	TBD	Grey-boxes language to change the calculation of GREDP PDCWG suggests priority of "critical"
	NPRR260	Providing Access to MIS Secure Area to MIS Registered Users	Tabled at PRS	TBD	Siebel, MPIM	Makes it possible for consultants, power marketers, aggregators, consumers and universities to get access to the MIS Secure area (without doing so by getting a digital certificate through a registered Market Participant)
	NOGRR034	Rescind Telemetry Performance Calculation Exclusions	Pending at Board	Medium	TBD	Grey-boxes language that allows QSE and TSPs to request removal of telemetry from Telemetry Standard performance metrics when certain situations exist.
	NOGRR050	Resolution of Reporting Issues Related to NPRR219	Pending at PRS	TBD	TBD	Grey-boxes several transmission Outage scheduling data elements from ERCOT reports until such time ERCOT systems can be modified to include only Transmission Service Provider's (TSP's) Outages in the reports
	SCR759	acLine Segment Name Length Increase in Information Model Manager (IMM)	Pending at TAC	High	IMM, CRR, MMS (possibly others)	Increases the character size of the acLine Segment type under the Line Equipment Container from 2 to 14 in the IMM. Allows modeling of multi-section line segments. Not a major impact to IMM but cascading impacts to CRR and MMS Desire expressed at ROS to have this implemented for Planning Go-Live (~March 2011) Primarily requested by Centerpoint.

**ERCOT Fiscal Year 2011 Budget**  
**Nodal Post Go-Live Support - Parking Deck**

	Item	Desc	Status	Priority	Impacted Systems	Details
Additional Items for Consideration		Wind Cost Allocation			TBD	Multiple discussions at TAC / Board from 1/20/2009 to 3/16/2010 WMS endorsed "Wind Plus Load Ratio Share" proposal (wind generators receive a hedgeable A/S obligation for responsive reserves, non-spinning reserves, regulation up and regulation down.)
		Deferred NOGRR025 Reports			Various	Completion of NOGRR025 reports targeted for post-go-live development – synchronization effort underway to grey-box deferred reports in Nodal Operating Guide
		NMMS API			NMMS	System to system interactions for the uploading and possible future downloading of data between ERCOT and Market Participants with minimal manual intervention. NOMCR submittals (upload) including data submittals, one-line submittals and CIM XML submittal. Various other submittals such as Rating Methodologies, SPS documents, etc.
		CRR API			CRR	System to system interactions for the uploading and downloading of data between ERCOT and Market Participants without manual intervention. Nomination submittals (upload), Auction bid/offer submittals (upload), CRR Network Model files (download), CRR ownership records (download), CRR Auction results (download).
		MMS Multiple Network Models			MMS	MMS does not currently have the capability to concurrently support separate network models for Operating Day and Day-Ahead MMS processes (DAM & RUC)
		Add PSS Status to RARF			TBD	Automation of manual reporting process created by NPRR156. Current process involves the posting of a spreadsheet on PSS status when operators are notified of a change in PSS status.
		Automated Default Uplift Invoice			COMS	Automation of uplift invoice in the event of a market participant default. Current approach is manual.
		EILS Enhancements			TBD	Automate the ERCOT Energy Interruptible Load Service reporting process in expectation of higher volumes with AMI.
		Load Participation -SCED			TBD	Functionality to be considered for post-go-live development
		EMS Upgrade			EMS	Upgrade EMS from v2.3 to v2.5/v2.6 - Change operating system from Windows to Linux AREVA ceases support of v2.3 in June 2011 (extended support can be negotiated) NERC CIP-007-1 R3 requires that ERCOT assess all security patches within 30 days of a patch release for all critical cyber assets, including EMS servers. ERCOT has taken the stance that to meet this requirement it must set a goal of deploying all patches within 30 days. The current number of Windows servers within the CCA perimeter makes this unmanageable due to the number of patches issued for Windows and its peripheral applications, and the relative severity of security breaches with Windows. The current zonal EMS system in production has received Technical Feasibility Exception (TFE) from NERC based on our commitment to Nodal migration. However, since the Nodal EMS system may become unsupported, we need to reapply for a TFE for which we may need to demonstrate that an upgrade project is underway.
		Deferred Defects			Various	Defects not addressed during Nodal stabilization period (Approx. 770 deferred defects as of Aug) Review underway to confirm issues and confirm acceptable workarounds
		Lg. Wind Power Prod - Ramp Forecasting Ph 2			TBD	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			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.
		Move Price Validation Tool (PVT) to Svr App			TBD	Functionality to be considered for post-go-live development
		PVT Enhancements			TBD	Enhancements needed based on results of market testing and Nodal implementation: reporting, user interface changes, etc.
	PVT Reporting Tools			TBD	Functionality to be considered for post-go-live development	
	Update Credit PFE (Potential Future Exposure) Model			TBD	With the implementation of Nodal, ERCOT's portfolio credit risk analysis for the Nodal market will include the following risk factors: (1) Price volatility analysis for the Day Ahead Market, (2) Bid and offer volume analysis in the Day Ahead Market, and (3) Value of Congestion Revenue Rights	

## Corporate Risk

October 1, 2010

# Credit risk management review and benchmarking study

Austin, TX



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## Oliver Wyman Executive Summary

- ERCOT's general credit practices, credit worthiness standards and credit exposure calculations meet or exceed industry standards and should fully support the transition to Nodal
- Collateral requirements are reasonably conservative, representing a prudent balance of conservatism and market accessibility given the move to a new market structure
  - Primary concerns for market participants reflect pricing uncertainties and the corresponding collateral requirements generated from market trial results in Real Time (RT) and Day Ahead Market (DAM). However, those collateral requirements were driven by the market trial pricing results rather than by ERCOT credit procedures
  - Discretionary parameters do give ERCOT the ability to adjust collateral requirements post “go-live,” providing flexibility to reflect potential changes in the market's appetite for risk
- From a governance perspective, the existing reporting relationship for credit meets best practice standards as it is fully independent of operational activities
- Given ERCOT's experience in recent years with unique risk events, the credit risk management practices have proven to be flexible in responding to these events and conservative collateral requirements provide additional protection
- Recommendations for post nodal implementation are provided on slide 11. Some highlights include:
  - ERCOT would benefit from developing an explicit risk appetite statement and tolerance for aggregate credit risk, which would improve ERCOT's overall governance and reduce potential confusion and disagreement concerning required collateralization levels
  - We strongly suggest that the organization resume using the credit loss model as soon as possible

## Section 1

# Credit risk management review results

## Credit Risk Management Project Overview

Oliver Wyman was engaged to perform a brief review of ERCOT's credit risk management practices in preparation for the December 1, 2010 Nodal implementation

### Project objectives

- The credit practices review included ERCOT's Nodal Protocols and Creditworthiness Standards, as well as ERCOT's general credit risk management practices
- In assessing ERCOT's capabilities in these areas, particular focus was placed on the following aspects of performance
  - Gap to best practice standards
  - Resource levels and qualifications
  - Consistency of counterparty treatment considering the type of counterparty, as well as, size and corporate status
  - Mitigation of unknown risks – based on an outside-in view of the overall ERCOT credit risk management approach

### Deliverables

- Assessment of Nodal credit practices with recommendations for enhancement
- Assessment of Creditworthiness standards as implemented for Nodal, and the related establishment of unsecured credit limits with recommendations for enhancement
- Assessment of credit exposure measurement techniques with recommendations for enhancement
- Recommendation on ways to mitigate credit exposure taking into consideration implementation concerns such as cost and implementation difficulty

### Constraints

- Limited timeframe (~4 weeks) to meet management timeline
- Market data and credit results are largely illustrative

**Oliver Wyman based the review on client experience, document reviews, select interviews (ERCOT representatives, market representatives, board members, other NA ISOs, and the PUC), analysis and review of publicly available market information**



## Our understanding of ERCOT's transition to Nodal

While some level of uncertainty exists around market dynamics (pricing and volumes) for Nodal implementation, it is clear that ERCOT's credit management may experience:

- Significant increase in counterparty activity in terms of volumes and thus credit exposures
  - Potentially significant increase in collateral requirements by ERCOT
  - Reduced individual net potential losses as a result of increased collateral requirements over zonal requirements
- Uncertainty around “go-live” RT and DAM pricing characteristics given unusual market participation in Nodal market trials
- Uncertainty around exposure concentration and collateral requirements on non-business days
- The need for greater transparency regarding global and entity specific discretionary exposure adjustments
- Additional staffing requirements to support data processing and reporting requirements
  - Aggressive timelines for reviewing exposure and producing daily available credit limits for the CRR auction and the DAM
  - Increased staffing and processing effort to support intra-day and non-business day reporting

## Credit Evaluation Framework

The framework for the evaluation included three functional elements that addressed key aspects of a comprehensive credit risk management program

### General credit practices

- Organization, staffing and governance
- Risk appetite and tolerance
- Technology
- Policies and procedures

### Creditworthiness

- Credit scoring
- Limit setting
- Collateral management
- Credit monitoring
- Workout

### Credit exposure

- Exposure measurement and monitoring
  - Real Time (RT)
  - Day Ahead Market (DAM)
  - Congestion Revenue Rights (CRR)
- Loss reserves and capital

- **This evaluation framework links directly to the framework Oliver Wyman used in 2007 to perform a comprehensive evaluation of ERCOT's credit practices and credit standards**
- **The current review focused on changes as a result of the Nodal implementation**



## Credit risk management review – General Credit Practices

ERCOT's general credit practices were found to be consistent with our evaluation framework standards and are ready for Nodal transition

Element	Standards	Assessment
<b>Organization, staffing and governance</b>	<ul style="list-style-type: none"> <li>▪ Credit management activities report through Finance/Treasury and are independent of front office activities</li> <li>▪ Policies, procedures and limits are approved by the risk committee</li> <li>▪ Credit analysts' skills and number are appropriate for the credit function's day-to-day requirements</li> </ul>	<ul style="list-style-type: none"> <li>▪ Finance/Treasury credit risk reporting structure is consistent with best practice and mitigates potential conflict of interest</li> <li>▪ Credit staffing capacity is within range of peer company review, however, the activity requirements are on the high range of peers</li> <li>▪ Current credit staff has sufficient experience and training to handle the anticipated requirements of the Nodal market</li> <li>▪ Credit function lacks true risk management experience and deep financial engineering skills, but there is an infrequent need for these skills and these skills are not found in peer organizations</li> </ul>
<b>Risk Appetite</b>	<ul style="list-style-type: none"> <li>▪ Clear and documented risk appetite definition and framework should be in place to guide credit risk principles</li> </ul>	<ul style="list-style-type: none"> <li>▪ General reporting framework (number of reports, timeliness, content) has improved and is appropriate for Nodal reporting requirements</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>▪ Technology platform is used to automate daily reports and minimize need for manual data entry requirements</li> <li>▪ Periodic validation of automated reports to ensure accuracy</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implied risk appetite is low, and defined by market participants through protocol development. Consensus is not perfect, but substantial agreement exists on key credit issues</li> <li>▪ Credit management system has streamlined daily operation requirements, augmented reporting/analysis capabilities and provides flexibility for further automation</li> </ul>
<b>Policies and procedures</b>	<ul style="list-style-type: none"> <li>▪ Formalized risk policy framework and hierarchy, including name and number of existing risk policies</li> <li>▪ Clearly assigned roles and responsibilities for: primary policy writer, key stakeholders to be involved, process and timing</li> <li>▪ Validation that procedures align with policies</li> </ul>	<ul style="list-style-type: none"> <li>▪ Potential credit loss model will require some modification to properly reflect Nodal conditions</li> <li>▪ Procedure and protocol development resources are adequate for nodal requirements</li> <li>▪ Current policies and procedures (including protocols) are highly structured, complete, detailed and appropriate for nodal requirements</li> </ul>



## Credit risk management review – Creditworthiness practices

ERCOT's credit worthiness practices were found to be consistent with our evaluation framework standards and are ready for Nodal transition

Element	Standards	Assessment
<b>Credit scoring</b>	<ul style="list-style-type: none"> <li>▪ Counterparties are scored for granting unsecured credit and included in potential loss calculations</li> <li>▪ Credit scoring technique is well-defined and is based on the counterparty credit rating, as well as, additional quantitative and qualitative data</li> <li>▪ Credit analysis and assessment are used to adjust the rating up or down based on a comparison to the peers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Nodal credit scoring requirements introduce minimal changes from zonal requirements and corresponding positive assessment in previous Oliver Wyman review (2007)</li> <li>▪ ERCOT's credit scoring model used in its PFE model provides a solid alternative to agency ratings where they are unavailable, and encompasses the impact of guarantees</li> <li>▪ Unsecured credit limits continue to be conservative relative to peers and ERCOT has historically granted less than the full limit               <ul style="list-style-type: none"> <li>– Fewer than 20 participants or approximately 10% of counterparties have access to unsecured credit and total unsecured credit is ~\$225MM<sup>1</sup></li> <li>– Approximately 30 counterparties have access to credit secured by guarantee agreements and total credit secured by guarantees is ~\$550<sup>1</sup>. It is important to note that this form of collateralization has been removed by some of ERCOT's peers</li> </ul> </li> </ul>
<b>Limit setting</b>	<ul style="list-style-type: none"> <li>▪ Formal procedure for granting unsecured credit is part of the credit risk policy</li> <li>▪ A consistent and equitable rationale supports the limits, with respect to underlying economic capital considerations, defined risk appetite, etc</li> </ul>	

<sup>1</sup>September 11, 2010 Support Materials for Finance & Audit Committee Meeting



## Credit risk management review – Creditworthiness practices (continued)

ERCOT's credit worthiness practices were found to be consistent with our evaluation framework standards and are ready for Nodal transition

Element	Standards	Assessment
<b>Collateral management</b>	<ul style="list-style-type: none"> <li>▪ Standard forms are required for all guarantees, LCs, surety bonds</li> <li>▪ Clear policy in place on the use of third party guarantees, LCs, etc.</li> <li>▪ Customers can enter into pay-down (prepayment) agreements, in order to reduce collateral requirement</li> <li>▪ Any recovery rates (haircuts) applied to guarantees or letters of credit are supported by policy documentation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Collateral requirements are stringent and similar to other ISOs, utilizing rigorous standard forms for all key agreements</li> <li>▪ Daily, intra-day and non-business day monitoring and reporting of credit limits minimizes risk</li> <li>▪ Daily monitoring of credit rating notifications/changes and significant events allows for ad-hoc credit adjustments</li> <li>▪ Current receivables, potential exposure and available collateral are all monitored and reported daily</li> <li>▪ Range of workout remedies allows appropriate response in a variety of situations and is a best practice</li> </ul>
<b>Credit monitoring</b>	<ul style="list-style-type: none"> <li>▪ Maximum net exposure by counterparty is updated and reported daily</li> <li>▪ Constant monitoring of internet and other press sources</li> <li>▪ Quarterly financial data are updated as received</li> </ul>	
<b>Workout</b>	<ul style="list-style-type: none"> <li>▪ Risk committee has discretion throughout the workout process, enabling flexibility to work with the counterparty and avoid a default</li> <li>▪ Declaration of bad debt loss is based on the reasonable expectation of CFO that the counterparty will not pay in an acceptable time period</li> <li>▪ Alternative payment plans, extended netting and other workout approaches are clearly defined and approved by the risk committee</li> </ul>	



## Credit risk management review – Credit exposure practices

ERCOT's credit exposure practices were found to be consistent with our evaluation framework standards and are ready for Nodal transition

Element	Standards	Assessment
<b>Exposure measurement and monitoring</b>	<ul style="list-style-type: none"> <li>▪ Exposure for collateral requirements accounts for forward price movement</li> <li>▪ Netting agreements are fully reflected in exposure measurements</li> <li>▪ Formal monitoring processes and stress testing of exposures are in place</li> <li>▪ Credit information is provided regularly to risk committee and Board</li> </ul>	<p><b>Core Credit Exposure</b></p> <ul style="list-style-type: none"> <li>▪ Core credit exposure calculations themselves are performing as per protocols, however, given extremes in market trial data, it is difficult to evaluate the reasonableness of the calculated exposures</li> <li>▪ Counterparty risk measurement appropriately includes both historical receivables and future potential exposures and are timely</li> <li>▪ Daily review activities have been established and are followed to proactively identify calculation abnormalities and test reasonableness of exposure calculations</li> <li>▪ Potential credit loss calculations are not currently performed, but are scheduled to resume when sufficient valid market data is available</li> </ul>
<b>Loss reserves and capital</b>	<ul style="list-style-type: none"> <li>▪ Risk appetite statement drives the target solvency level</li> <li>▪ Credit loss or economic capital modeling provide a consistent framework for loss reserve determination</li> <li>▪ Access to lines of credit or revolvers, in lieu of formal loss reserve, in order to maintain liquidity</li> </ul>	<p><b>DAM Credit Exposure</b></p> <ul style="list-style-type: none"> <li>▪ Potential exposures are based on consistent thresholds (e.g., 95<sup>th</sup>%<sup>1</sup>) of recent historical market conditions, and bid screening is performed</li> <li>▪ This approach is conservative, as collateralization at this level could be insufficient fewer than 18 days per year. This represents a prudent balance of conservatism and market accessibility</li> <li>▪ Some netting of bid and offers from a given counterparty is provided, which mitigates collateral requirements, while monitoring for RT impacts.</li> </ul> <p><b>Congestion revenue rights</b></p> <ul style="list-style-type: none"> <li>▪ A PFE-style approach is appropriately in place to determine CRR collateral requirements, and review is planned after meaningful data are available</li> </ul> <p><b>Aggregate Assessment</b></p> <ul style="list-style-type: none"> <li>▪ A number of discretionary controls are available to ERCOT credit management to adjust for unusual circumstances</li> </ul>

<sup>1</sup>Collateral based on a 95<sup>th</sup> percentile price will be sufficient to cover collateral requirements 347 days out of 365 days total.

## Summary recommendations

The following suggestions are designed to improve the credit risk management program post Nodal implementation

Review elements	Summary recommendations
<b>General credit practices</b>	<ul style="list-style-type: none"><li>▪ Develop formalized risk appetite statement/ methodology to inform aggregate credit exposure, collateral requirements, and unsecured credit practices</li><li>▪ Design and implement a formal credit process improvement program</li><li>▪ Consider credit risk analytics and market risk management training options to enhance existing credit team skill-set</li><li>▪ Consider additional automation paths to improve efficiency and accuracy (i.e., manual workarounds, financial statement updates, etc.)</li></ul>
<b>Credit worthiness</b>	<ul style="list-style-type: none"><li>▪ Test and refine internal credit scoring model developed for the PFE model to inform overall credit limits</li><li>▪ Introduce additional real-time indicators such as CDS spreads in counterparty reviews</li><li>▪ Re-evaluate workout protocol to ensure adequate alternatives are available for collateralizing counterparties</li></ul>
<b>Credit exposure</b>	<ul style="list-style-type: none"><li>▪ Resume using the credit loss model as soon as possible</li><li>▪ Consider potential adjustments to collateral requirements based on market segmentation (generation, load, trading) characteristics. Further netting capability should be considered after the Nodal market is operational and stable</li><li>▪ Increase use of credit loss model to stress test market scenarios</li><li>▪ ERCOT should continue to evaluate alternate credit risk management options including, but not limited to, extended netting, contingency pools, clearing house approach, etc.</li><li>▪ Periodically (i.e., 6 months) review FCE to determine appropriateness of collateral requirements</li></ul>

## Section 2

# Benchmarking results











## Our approach to peer benchmarking

Through a series of brief individual calls with US-based ISOs and other exchanges, as well as desk research, we attempted to capture the following benchmark data

- Limits on unsecured credit as a percent of tangible net worth
- Staffing headcount
- Staffing experience and pre-requisites
- Use of technology
- Range of discretion for credit limits and collateral requirements
- Collateral requirements for market offers
- Use of hard limits and screening practices
- Reporting frequency and non-business day reporting requirements

## Comparison of ERCOT's practices with other peer institutions

ERCOT compares favorably on a majority of the review elements indicating a conservative approach to credit risk management relative to peer institutions

Review Elements	Benchmark Continuum (Level of conservatism)		Comments
	Low	High	
Limits on unsecured credit (High = lower limit)			<ul style="list-style-type: none"> <li>ERCOT's unsecured credit limit guidelines are more conservative in terms of % of TNW, but less so in terms of maximum allowed (see following slide)</li> </ul>
Staffing headcount (High = more staff)			<ul style="list-style-type: none"> <li>Based on Market Reform research and peer discussions, staffing headcount ranges from 2 FTEs to the 6.5 FTEs at ERCOT. ERCOT intra-day and non-business day reporting requirements support their high level of staffing requirements. In this case, more headcount is considered conservative given the uncertainty in nodal requirements for credit.</li> </ul>
Staffing experience (High = more skills/experience)			<ul style="list-style-type: none"> <li>The benchmarking discussions suggested standard corporate credit experience as the normal requirements for credit function requirements. There were a few examples of industry management consulting experience, but no evidence of advanced mathematics, formal risk management or financial engineering skills within the full-time staff</li> </ul>
Technology (High = more sophisticated)			<ul style="list-style-type: none"> <li>Technology applications ranged from excel based and ad-hoc reporting to complex credit management systems either built in-house or customized retail products. ERCOT's customized ROME system appeared more advanced than most of its peers</li> </ul>
Credit limit discretion (High = more discretion)			<ul style="list-style-type: none"> <li>Credit limit discretion ranged from rules based limits with limited discretion based on tariffs to full discretion with appropriate transparency to the market</li> </ul>
Netting current with forward risk (High = less netting)			<ul style="list-style-type: none"> <li>Collateral requirements ranged from full netting (lower risk management) to partial netting with 1<sup>st</sup> priority security interest</li> </ul>
Hard limits & screening (High = hard limits)			<ul style="list-style-type: none"> <li>Hard limits and screening processes ranged from soft and multi-day reviews to intra-day and hard screening for DAM and Virtual Bids</li> </ul>
Reporting frequency & non-business day reporting (High = more frequent)			<ul style="list-style-type: none"> <li>Reporting frequency ranged from multi-day reporting (every third day) to intra-day reporting and non-business day reporting requirements</li> </ul>

 ERCOT

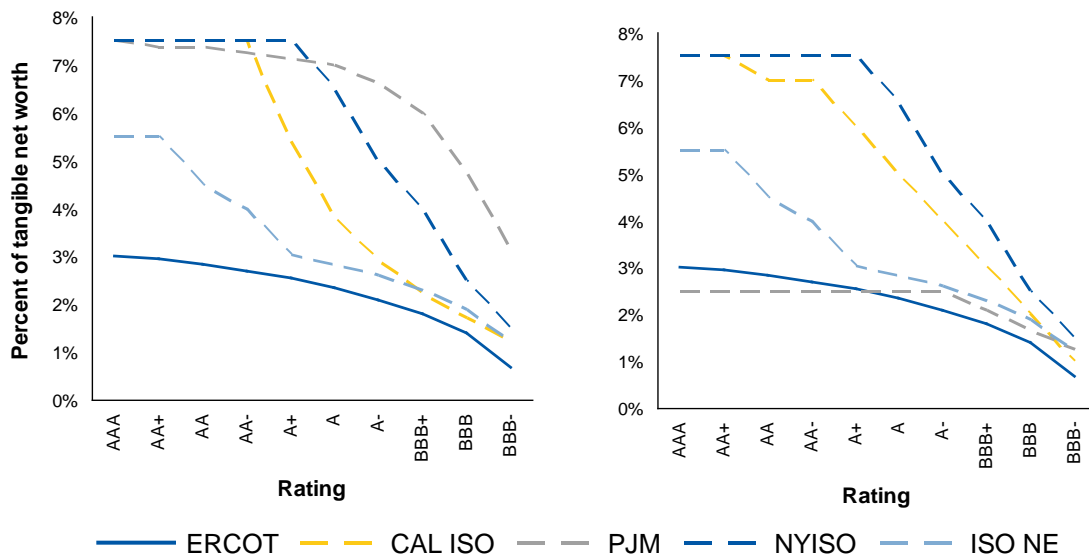
## Comparison of ISO practices in granting unsecured credit

ERCOT continues to grant unsecured credit as a conservative % of tangible net worth, but with a higher cap than some other ISOs

### Maximum unsecured line as a % tangible net worth

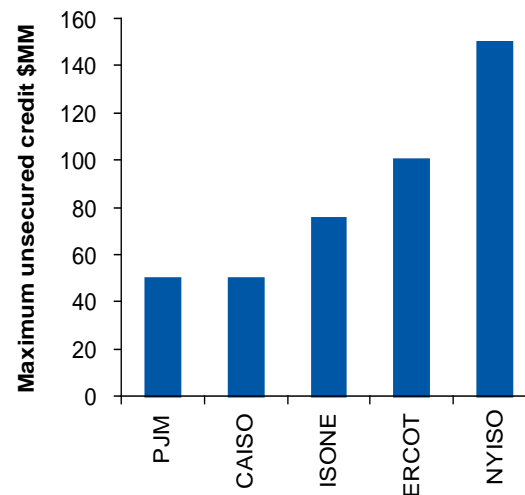
October 2008 limits

October 2010 limits



### Maximum unsecured credit

October 2010 caps



Source: Transmission operators' credit policies

Notes: Midwest ISO is excluded from this analysis as they do not use standard credit ratings to support unsecured credit decisions. In addition, several of these ISOs apply a CAP to the level of unsecured credit provided to each counterparty

## Contextual comparison with financial services institutions and markets

Best, and emerging, practices in the banking community may provide insight regarding the evolution and direction of corporate counterparty credit risk management

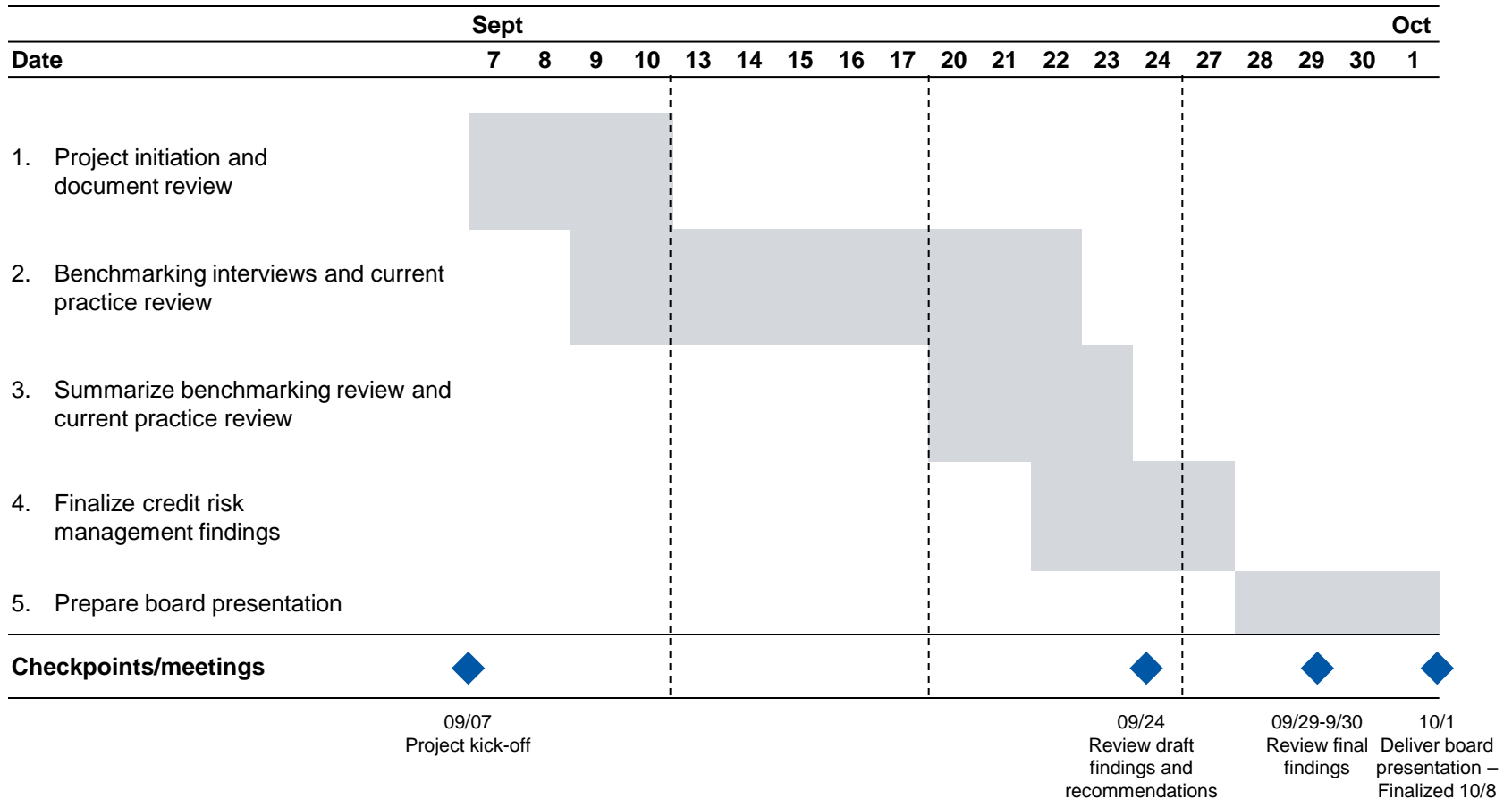
Issue	Observations
General credit practices	<ul style="list-style-type: none"><li>▪ Risk appetite definitions or statements are universal in the financial services sector, and form the foundation for the PFE definitions (percentile choices, etc). These are typically informed by a range of activities including beta-estimation / targeting and the analysis of scenarios designed to reflect key financial constraint testing</li></ul>
Credit worthiness	<ul style="list-style-type: none"><li>▪ Unsecured counterparty credit has become extremely rare in OTC transactions among participants in the FS sector. These OTC transactions all require cash or government securities to collateralize the full PFE. The advantage of transacting OTC (rather than on exchange) is the potential for workout rather than the complex and demanding exercises of many of the exchanges protocols</li><li>• In circumstances where additional transaction information is available, such as prime brokerage (equivalent to ERCOT's knowledge of MP scheduled volumes), best practice is for credit analysts to continuously monitor the implied financial health of major counterparties. However, this level of analysis requires approximately 1 credit analyst per 10 to 15 counterparties and may not be cost effective for ERCOT's current operating environment</li></ul>
Credit exposure	<ul style="list-style-type: none"><li>▪ The universal minimum standard for credit exposure assessment is a probability based metric such as potential future exposure (PFE)</li><li>▪ Multi-lateral netting and settlement services are increasingly being provided by third parties to decrease risk/capital requirements. E.g., CLS Bank was formed in 2002 exclusively to settle and net FX transactions. CLS now operates 6 days a week, 24 hours per day, settling \$4T daily with average cash capital requirements of about 5% of transaction value</li><li>▪ More advanced FS counterparties spend significant effort separating and modeling "wrong-way" risk impacts (these arise when a single market risk factor increases credit risk exposure, and simultaneously decreases counterparty financial strength). This is the case at ERCOT for power prices and load serving entities. Proper modeling involves linking PFE to shifts in counterparty PD</li></ul>

Appendix

# Project approach and interview participants

## Project Timeline

The project was executed over the course of four weeks with a number of checkpoints in advance of finalizing the report and preparing the board presentation



## Current Practice and Benchmarking Interviews

Oliver Wyman conducted over 20 interviews with company representatives, regulatory representatives, market participants and ERCOT peers to provide additional perspective for its review and support its conclusions

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### Interviews

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#### Name – Stakeholder Group

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- Anderson, Kenneth W. Jr. – Public Utility Commission of Texas, Commissioner
  - Bermudez, Jorge – ERCOT Board, F&A Committee
  - Blackburn, Don – Luminant
  - Cleary, Mike – ERCOT COO
  - Coffing, Tim – Luminant
  - Davies, Morgan – Calpine, Market Credit Working Group
  - Doggett, Trip – ERCOT CEO
  - Espinosa, Miguel – ERCOT Board , F&A Committee Vice Chair
  - Goff, Eric – Reliant/NRG, Credit Working Group
  - Jones, Brad – Luminant
  - Karnei, Clifton – ERCOT Board, F&A Chair
  - King, Kevin – California ISO
  - Lafreti, Jeff – New England ISO
  - Loomis, Hal – PJM ISO
  - Nikazm, Tamila – Austin Energy, City of Austin, Credit Working Group
  - Pabbisetty, Suresh – ERCOT Senior Treasury/Credit Analyst
  - Petterson, Mike – ERCOT Controller
  - Prall, Kyle – ERCOT Credit Analyst
  - Prevatil, Sherri – New York ISO
  - Spangler, Arleen – NRG, Market Credit Working Group
  - Spells, Vanessa – ERCOT Credit Manager
  - Yager, Cheryl – ERCOT Treasurer
  - Zapanta, Rizaldi – ERCOT Credit Analyst
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## 6. Nodal Credit Risk Profile and Status: Overview

Cheryl Yager

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- **Timeline**
- **CMM Status** (Section 16)
- **Other topics**
  - Congestion Revenue Rights (CRRs)
  - Day Ahead Market (DAM)
  - Credit Monitoring and Management (CMM)
  - Unsecured credit
  
- **Recommendation**



## 6. Nodal Credit Risk Profile and Status: Timeline Cheryl Yager

<b>Readiness Review and Approval</b>	<b>Planned completion</b>	<b>Status</b>
NATF Review	August - October 5	Complete
CWG Review	August - October 8	Complete
Comparison of ERCOT market to other markets (per Mkt Reform's PJM study) as requested at July BOD meeting	September 21st F&A meeting	Complete
F&A Review	September 21st F&A Meeting	Complete
ERCOT Management Approval	by September 28	Complete
TAC Approval	October 7	Complete
Review by Oliver Wyman with report to F&A on Nodal credit policy and practices	October 19	Complete
F&A Review	October 19th F&A Meeting	On target
BOD Approval	October 19	On target
30 Day Market Notice	October 29	On target
10 Day Market Notice	November 19	On target
Go Live	December 1	On target

## 6. CMM Status

### Cheryl Yager

<b>System Readiness</b>	<b>Planned Completion</b>	<b>Status</b>
Credit Management Integrated in Market Trials	5/3/10	Complete
Verify CMM Credit Calculations (CO10)	9/8/2010	Complete
<b>Process Readiness</b>		
Credit Management Procedures	8/24/10	Complete
Nodal Protocol Transition Plan Updated for Credit Management	7/29/10	Complete
<b>People Readiness</b>		
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

## 6. Nodal Credit Risk Profile and Status: Other Topics

Cheryl Yager

- **CRR Auction Credit Constraint**

- TAC voted to recommend that the BOD approve the following changes to the credit parameters used in the CRR auction to accommodate the estimated ongoing liability (e.g. mark to market value) as the CRR auction runs - Multiplier (M) and Adder (A)
  - Multiplier - change from “1” to “0” as a correction based on understanding how the auction engine uses the parameters – general agreement
  - Adder – reducing from \$1.50 to \$0.75 per MW per hour
- ERCOT confirmed at TAC that it could support M = “0” and A = “\$0.75” per MW per hour, pending a review of data post go live

- **This is a voting item at the October Board meeting**

***<F&A vote to recommend approval of the M and A factors at the Board>***

## 6. Nodal Credit Risk Profile and Status: Other Topics

Cheryl Yager

### **DAM Credit Constraint – items under review**

1. A concern was identified on October 5<sup>th</sup> with respect to implementation of Section 4.4.10 (d) with respect to how credit limits are consumed for Point to Point (PTP) obligation bids in the DAM

- the “u” factor is not considering the quantity involved
- the “u” factor times quantity is not considered for negative bids

Without being fixed, DAM would undercollateralize for PTP Obligation bids

Resolution: ERCOT has confirmed that this issue will be fixed and is expected to be migrated to production on November 5, 2010

2. ERCOT is performing a final walkthrough of how credit is consumed in the DAM with market participants

## 6. Nodal Credit Risk Profile and Status: Other Topics

Cheryl Yager

### **DAM Credit Constraint – items under review**

3. 95<sup>th</sup> percentile of Real Time (RT) – Day Ahead(DA) spread and 95<sup>th</sup> percentile of Point to Point (PTP) Obligations source/sink differences
  - Allows only 1-2 outlier data points
  - Impacts credit for 30 days forward
  - A change to these elements cannot be made quickly
    - 95<sup>th</sup> percentile of RT DA spread
      - Protocol revision; programming change in MMS
    - 95<sup>th</sup> percentile of PTP Obligation (source-sink)
      - Change to DAM Collateral Parameters document; parameter change in MMS
    - ERCOT has no discretion to change these percentiles

## 6. Nodal Credit Risk Profile and Status: Other Topics

Cheryl Yager

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### **DAM Credit Constraint – items under review**

#### 3. 95<sup>th</sup> percentile (continued)

##### **ERCOT has asked the market to consider**

- Changing the percentiles to provide for additional outliers (particularly for early days in the market)
- Defining a contingency plan and/or providing flexibility to address issues should they arise

**The Board of Directors may see something on this topic at their November meeting**

## 6. Nodal Credit Risk Profile and Status: Other Topics

Cheryl Yager

- **Core credit (Section 16) - To help evaluate the reasonableness of the calculated Total Potential Exposure (TPE) in the new market, ERCOT has developed a “Benchmark” tool**
  - A CP’s *TPE* will be reviewed relative to a low end and a high end exposure calculation from data in the CMM system
    - Generally expect most TPEs to be between the low and high end estimates
    - The high end exposure relates to a level of default risk
    - Look at risk as a) historical risk + b) forward risk
      - Collateral calculation is by market (DAM vs RT)
    - This tool is still a work in process and will be adapted over time

## 6. Nodal Credit Risk Profile and Status: Other Topics

Cheryl Yager

- **Core credit (Section 16) – Benchmark tool**
  - ERCOT plans to use this tool to
    - Identify trends in the overall market
    - Identify individual CP's TPE to review
      - The fact that a TPE is outside the range does not mean that an adjustment will be made, just that ERCOT will review the activity
      - May also identify calibrations to be made to the tool
    - In unusual or stress scenarios (as were experienced in Feb/Mar 2003, May, 2008), provide points of reference for level of adjustment
      - Benchmark report may be adapted as situations develop (e.g. If prices are expected to **remain** high, price factor in benchmark may be adjusted)



## 6. Nodal Credit Risk Profile and Status: Other Topics

Cheryl Yager

### Unsecured Credit

- Maximum unsecured credit limits are set in the Creditworthiness Standard
  - Given the focus on Nodal, CWG has not reviewed the Creditworthiness Standard recently
- Other ISOs have been moving to tighten unsecured credit
- Relative to other ISOs, ERCOT's awarding of unsecured credit is mixed
  - ERCOT awards unsecured credit conservatively (see OW report) relative to an entity's tangible net worth; however,
  - the overall unsecured credit limit of \$100 million allowed per entity is relatively high
  - Of the approximately 50 entities that are eligible for unsecured credit only 10-15 entities are eligible for more than \$75 million
- Based on the information in the Committee Briefs,
  - average unsecured credit awarded directly is approx \$12 million per entity for 19 entities and
  - average unsecured credit awarded under guarantees is approx \$20 million per entity for 30 entities

## 6. Nodal Credit Risk Profile and Status: Other topics

Cheryl Yager

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### **Unsecured credit** (continued)

- ERCOT has set an internal limit of \$75 million and no entity has been awarded more than \$75 million in unsecured credit in the Zonal market

***Note: ERCOT will maintain its current internal limit on unsecured credit and will not award unsecured credit for more than \$75 million for the Nodal market, pending a review of the Creditworthiness Standard by CWG***

## 6. NATF Approved Go-Live Recommendation

Cheryl Yager

**“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

## 6. TAC Certification of Full Nodal Systems for Go-Live

Cheryl Yager

**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

## 6. Recommended Board Resolution for Full Nodal Operations Approval

### Cheryl Yager

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.

**F&A Committee recommends that the Board vote to certify that all Market Readiness Criteria have been met for Nodal Market Go-Live for Operating Day December 1, 2010, based on the following:**

- the October 1, 2010 ERCOT Management Readiness Certification;
- the October 5, 2010 Nodal Advisory Task Force ( NATF) recommendation;
- the October 7, 2010 Technical Advisory Committee (TAC) Certification; and
- the October 11, 2010 Credit Work Group recommendation.

***<Vote on F&A Committee Recommendation>***

## 6. CWG Status and Recommendation: Overview Tamila Nikazm

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- **Background**
- **CWG Recommendation – Nodal Readiness**
- **CRR – M&A parameters**
- **DAM 95<sup>th</sup> percentiles**
- **Review of Oliver Wyman draft report**
- **Questions**

## 6. CWG Status and Recommendation: Background Tamila Nikazm

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- At the F&A Committee meeting on August 17, 2010, CWG confirmed with the Committee that CWG should make a recommendation to the Committee by its October meeting as to Nodal Credit Readiness, specifically, that
  - Credit calculations are functioning as per the Nodal Protocols based on data available in market trials
  - Credit risk in the Nodal market is adequately addressed
- CWG has met several times over the past months to review various aspects of Nodal credit



## 6. CWG Status and Recommendation: Nodal Readiness Tamila Nikazm

- The Credit Work Group (CWG) has reviewed the Nodal Protocols and how collateral is determined and to the best of its knowledge all ERCOT systems should be ready to go live on December 1, 2010.
  - Credit calculations are functioning as per the Nodal Protocols based on data available during market trials in the CMM and CRR systems and the calculations adequately address credit risk in these areas
  - On October 5, 2010, CWG identified the issue with a calculation for PTP obligation bids noted below and unless corrected before go-live, CWG cannot confirm the adequacy of how credit is consumed in the DAM. ERCOT has reviewed the issue and currently has a plan to resolve it by November 5, 2010. Taking this into consideration, CWG confirms that DAM credit consumption adequately addresses credit risk.
    - Issue: two discrepancies were discovered in respect to Section 4.4.10 (d) in how credit limits are consumed for PTP obligation bids in the DAM such that
      - The ‘u’ factor is not considering the quantity involved
      - The ‘u’ factor times quantity is not considered for negative bids
  - CWG recommends status updates regarding outstanding issues be provided at future ERCOT Board meetings.
- CWG voted to make the above recommendation on Monday, October 11 by unanimous vote, with 6 segments voting

## 6. CWG Status and Recommendation: CRR – M&A Parameters Tamila Nikazm

- **CWG reviewed the M(ultiplier) and A(dder) approved by TAC for recommendation to the Board**
  - TAC approved a Multiplier of “0” and an Adder of “\$0.75”
- CWG voted to concur with the TAC values by a vote of 3.5 to 1.5 by segment with 5 segments voting and 1 abstaining

## 6. CWG Status and Recommendation: DAM 95<sup>th</sup> Percentiles Tamila Nikazm

- After discussion around concerns with the 95<sup>th</sup> percentiles used for the RT DA spread and 95<sup>th</sup> percentile of PTP Obligations, CWG voted (by a vote of 4 to 2 by segment with 6 segments voting) to recommend
  - a) using the 85<sup>th</sup> percentile for these two elements and
  - b) clarifying ERCOT's ability to use its judgment in using the "e3" factor to modify the RT DA spread, if needed.
- This vote reflects a policy direction to be pursued
  - This direction will need to be codified in the following documents and reviewed by the appropriate market committees before coming to the Board
    - 95<sup>th</sup> percentile of the RT DA spread - Protocol revision; programming change in MMS
    - 95<sup>th</sup> percentile - PTP Obligation source/sink - Change to DAM Collateral Parameters document; parameter change in MMS
- The Board may see one or more of these changes in November

## 6. CWG Status and Recommendation: Review of Oliver Wyman Draft Report

- **CWG reviewed a draft of the Oliver Wyman (OW) report at their meeting on Friday, October 8<sup>th</sup> and had the following comments**
  - Unsecured credit – in addition to noting how ERCOT awards unsecured credit, CWG would like the report to reflect where ERCOT is relative to the caps on unsecured credit (with the general understanding that ERCOT's caps are on the high side)
  - Wanted clarification in the benchmark against other ISOs on what each line means
  - Noted that credit for CRRs was not specifically addressed and asked for OWs feedback.

***Note: these comments were forwarded to OW and OW will address them in their report***

- In addition, some CWG members expressed that they wished that Oliver Wyman could have performed a more in-depth review of exposure calculations and provided recommendations for improvement in these calculations; however, that was out of scope given the timeframe for the review

## 7. Discussion of SAS 70 Transition to Nodal

### Cheryl Moseley

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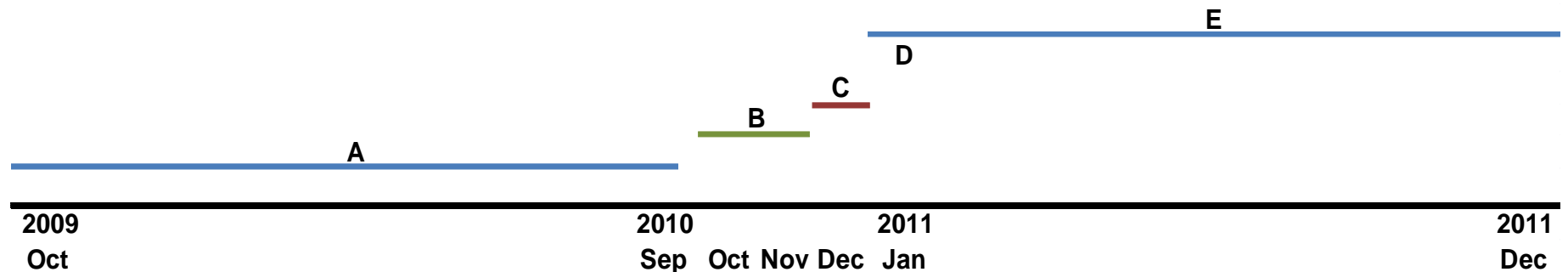
- The Finance and Audit Committee is responsible for appointing auditors
- As a Service Organization, ERCOT is required to conduct a SAS70 audit of controls in place to properly clear the market and perform financial settlement
- Market Participants rely on the results of ERCOT's SAS70 audit
- SAS70 Solutions, LLP is the auditor that was appointed to conduct the 2010 SAS70 audit
- For the 2010 audit, the testing period ended on 9/30/10
- ERCOT normally would issue a management letter indicating that the controls did not change during the period from 10/1 through 12/31 so reliance on the results of the audit is for the calendar year
- When the ERCOT Nodal market is implemented on 12/1/10, some of the controls will change due to the new market design
- ERCOT staff has discussed options with the auditors (PwC & SAS70 Solutions) for addressing the December timeframe and the impact on controls

## 7. Discussion of SAS 70 Transition to Nodal: Options

Cheryl Moseley

Approach	Pros	Cons
Management Letter addressing changes post 2010 SAS 70	<ul style="list-style-type: none"> <li>Consistent with current practice.</li> </ul>	<ul style="list-style-type: none"> <li>Likely won't satisfy market needs on its own.</li> </ul>
Advanced Distribution of Control Objectives	<ul style="list-style-type: none"> <li>Can be done in advance.</li> <li>Effectively communicates the high level control environment in the new Nodal construct.</li> <li>Demonstrates diligence to the Market.</li> </ul>	<ul style="list-style-type: none"> <li>Likely won't satisfy market needs on its own.</li> </ul>
Advanced Distribution of Control Activities along with user controls	<ul style="list-style-type: none"> <li>Effectively communicates the details of control environment in the new Nodal construct.</li> <li>More detail will benefit the Market Participants. Allows them to understand and independently assess the adequacy of the control environment.</li> <li>Inclusion of user control considerations effectively communicates Market Participant responsibilities in advance.</li> </ul>	<ul style="list-style-type: none"> <li>There are likely to be changes in control activities and user controls between initial distribution and first reporting cycle.</li> <li>Informational only with no comfort on operating effectiveness of controls.</li> </ul>
Perform Internal Audit Validation and Communicate Results (Internal audit is currently conducting testing on Nodal SAS70 controls)	<ul style="list-style-type: none"> <li>Will provide internal comfort on operating effectiveness.</li> <li>May result in process improvement suggestions.</li> <li>Can be incorporated as part of the current Internal Audit validation plan.</li> </ul>	<ul style="list-style-type: none"> <li>Does not provide independent, third party comfort on controls.</li> <li>Unlikely that Internal Audit can fully cover all control activities.</li> <li>Significant constraints relating to external communication of internal audit results (internal use only).</li> </ul>
Conduct SAS 70 Type 1	<ul style="list-style-type: none"> <li>Independent validation of adequacy of design of new control environment.</li> <li>Broadly recognized reporting mechanism for Market.</li> <li>Jump start on 2011 SAS 70 reporting.</li> </ul>	<ul style="list-style-type: none"> <li>Cost.</li> <li>No comfort on operating effectiveness of controls.</li> </ul>
Conduct Independent Testing of Agreed Upon Higher Risk Areas	<ul style="list-style-type: none"> <li>Independent validation of adequacy of operating effectiveness of certain controls: useful in Sarbanes Oxley compliance.</li> <li>Can be tailored to address specific concerns and requests from the market.</li> <li>Jump start on 2011 SAS 70 reporting.</li> </ul>	<ul style="list-style-type: none"> <li>Cost.</li> <li>Will require agreement on scope with the users of the reporting.</li> <li>This is more limited than a SAS 70 Type 2.</li> </ul>

## 7. Discussion of SAS 70 Transition to Nodal Cheryl Moseley



A - Testing period for the 2010 SAS70 Audit

B - Period when current "Zonal" controls were in effect after testing completed for the 2010 SAS70 audit

C - Period when some controls changed due to Nodal market implementation

D - January 2011; Conduct a Type 1 SAS70 audit on controls that changed due to Nodal market implementation

E - 2011 SAS70 testing period

The testing period for the 2010 Zonal SAS70 audit was from 10/1/09 through 9/30/10. If ERCOT was not transitioning to a Nodal market design on 12/1/10, ERCOT would issue a management letter for the period from 10/1/10 through 12/31/10 indicating that there weren't any changes to the controls during that time period. The letter "bridges" the timeframe between the end of testing and the end of the year so the report can be issued for the year. The recipients of the report then rely on the management letter for the last 3 months of the year until the operating effectiveness is tested in the following year.

ERCOT staff's recommendation for the 2010 SAS70 audit is to issue a management letter 1) for all the Zonal controls from 10/1/10 through 11/30/10, 2) include 12/1/10 through 12/31/10 for controls that did not change due to the Nodal market design, and 3) indicate which controls changed in December due to the Nodal market design. Then in January 2011, staff recommends conducting a Type 1 SAS70 audit on the controls that changed in December. A Type 1 audit is based on a point in time and the auditor's opinion is on the design of the controls at that point in time, but not on the operating effectiveness.

## 7. Discussion of SAS 70 Transition to Nodal

Cheryl Moseley

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### **ERCOT staff is requesting:**

- In October, F&A discussion/consideration of the options
- In November, F&A approval of one of the options
- If ERCOT staff's recommendation is the approved option
  - F&A appoint SAS70 Solutions, LLP to conduct a Type 1 audit in January 2011 on the controls that changed in December due to the Nodal market implementation
    - Estimated cost for the Type 1 audit is \$25,000
    - SAS70 Solutions, LLP's proposed audit commencement date is January 17, 2011
    - Audit report issuance would be expected by mid to late February



## 8. Committee Briefs

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**Q&A only**

## ERCOT Market Credit Status

as of 8/31/2010

as of 9/30/2010

### Exposure in the ERCOT Market (owed to ERCOT)

#### QSEs that meet ERCOT Creditworthiness Standards

Ratings over BBB-

	# of QSEs*	Estimated Aggregate Liability (\$)	% of EAL	Total Unsec Credit Limit / Security Posted		# of QSEs*	Estimated Aggregate Liability (\$)	% of EAL	Total Unsec Credit Limit / Security Posted	
<b>Exposure in the ERCOT Market (owed to ERCOT)</b>										
<u>QSEs that meet ERCOT Creditworthiness Standards</u>										
Ratings over BBB-	9	40,707,070	9%	150,632,520	U	11	57,452,536	13%	173,909,282	U
<u>QSEs that do not meet ERCOT Creditworthiness Standards</u>										
Ratings below BBB- or not rated										
Cash & Letters of Credit	52	182,012,153	41%	311,837,785	S	53	197,463,858	45%	343,634,439	S
Guarantee Agreements	19	223,890,624	50%	448,694,868	S	17	183,406,829	42%	440,157,469	S
<b>Total Exposure</b>	<b>80</b>	<b>446,609,847</b>	<b>100%</b>			<b>81</b>	<b>438,323,223</b>	<b>100%</b>		
<b>Other QSEs in the ERCOT Market (ERCOT owes)</b>										
<u>QSEs that meet ERCOT Creditworthiness Standards</u>										
Ratings over BBB-	10	(11,703,017)	-14%	75,454,199	U	8	(8,503,484)	-11%	53,030,789	U
<u>QSEs that do not meet ERCOT Creditworthiness Standards</u>										
Ratings below BBB- or not rated										
Cash & Letters of Credit	73	(51,434,742)	-63%	103,667,393	S	71	(45,897,348)	-58%	54,117,640	S
Guarantee Agreements	9	(17,991,455)	-22%	97,202,000	S	13	(24,166,610)	-31%	170,202,000	S
<b>Total</b>	<b>92</b>	<b>(81,129,214)</b>	<b>-100%</b>			<b>92</b>	<b>(78,567,442)</b>	<b>-100%</b>		

**Total**

172

173

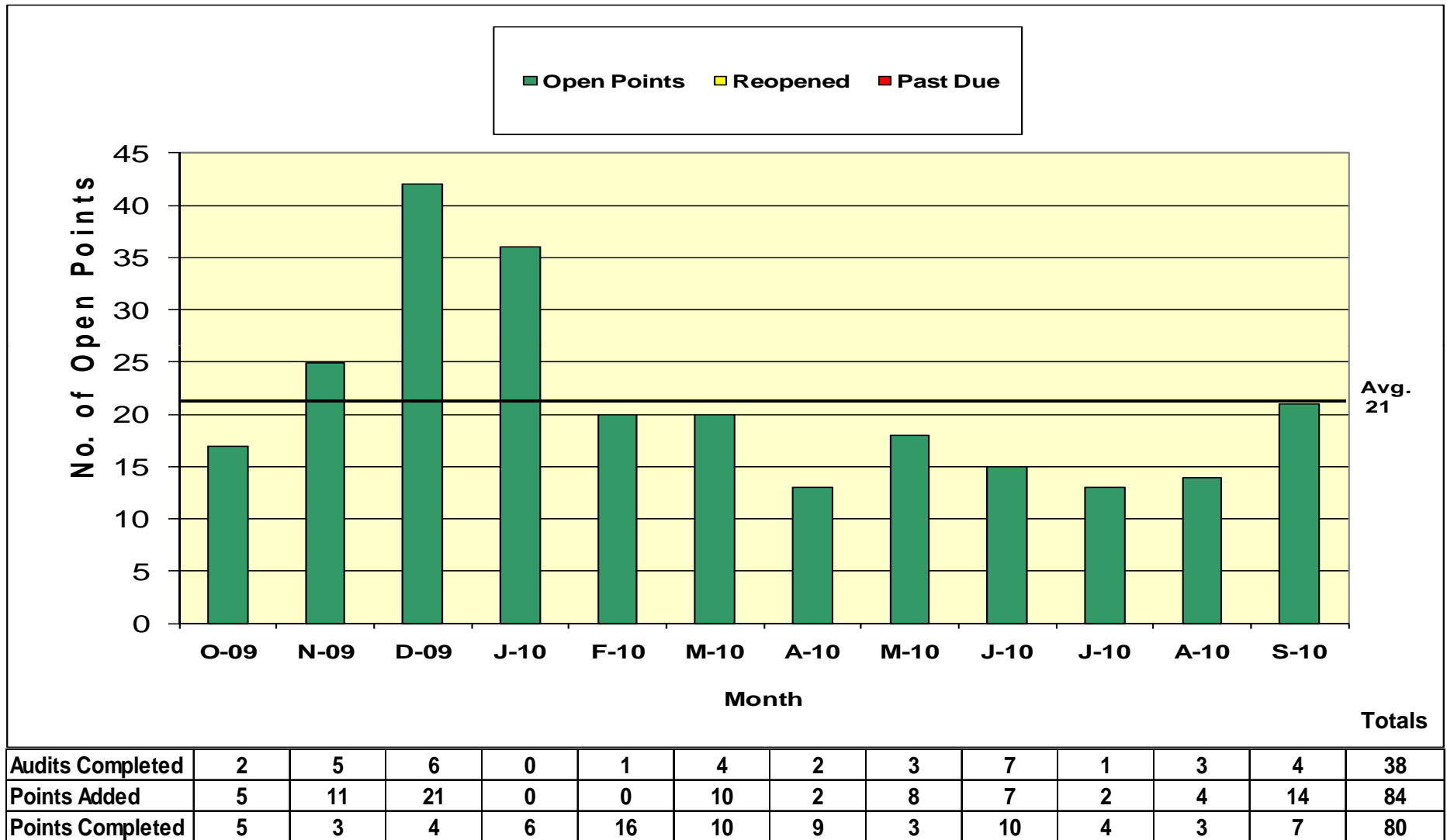
U: For QSEs that meet ERCOT's Creditworthiness Standards, amount of unsecured credit granted.

S: For QSEs that do not meet ERCOT's Creditworthiness Standards, amount of Security posted.

Note 1: Guarantee Agreements provided to meet a QSE's collateral requirements by entities that meet ERCOT's Creditworthiness Standards.

Guarantee Agreements provided to meet financial statement requirements by entities that do not meet ERCOT's Creditworthiness Standards are not included on this schedule.

## 8. Committee Brief ICMP: Status of Open Audit Points Cheryl Moseley



All audit points except 2 are expected to be complete by 1/31/11.

## 8. Committee Brief: ICMP – Audits Cheryl Moseley

### **Audits Completed**

(last 3 months)

#### **Internal Audits**

- Vendor Assessments (Targeted Review)
- Patch Management and Server Hardening
- Cash and Investments
- Q2 Fraud Auditing
- Nodal Program Spending (Part 1 of 2)
- Access Management for Financial System
- 2009 Unaffiliated Board Member Expense Reimbursement (Special Request)

#### **External Audits**

- 2010 Benefit Plan Audit (Maxwell, Locke & Ritter)

### **Audits in Progress**

#### **Internal Audits**

- Pre-Audit Testing for 2011 Nodal SAS70 Audit
- Nodal Program Reporting (Special Request)
- Protocol Owners (Special Request)
- Q3 2010 Fraud Auditing
- Nodal Program Spending (Part 2 of 2)
- Protocol 1.4 Required Audit – Ethics
- Employee & Contract Worker Ethics Compliance

#### **External Audits**

- 2010 Zonal SAS70 Audit (SAS70 Solutions, Inc.)

### **Planned Audits**

(next 3 months)

#### **Internal Audits**

- Software License Management (Special Request)
- Outage Coordination

#### **External Audits**

- 2010 Financial Audit (Ernst & Young, LLP)

## 8. Committee Brief: ICMP – Security Assessments

Cheryl Moseley

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### **Consultation/Analysis Reports Completed**

(last 3 months)

#### **Assessments**

- None

### **Open Consultation/ Analysis Reviews**

#### **Assessments**

- None































### **Planned Consultation/ Analysis Reviews**

(next 3 months)

#### **Assessments**

- 1 Assessment planned in Q4

**ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.**  
**RISK MANAGEMENT EVENT PROFILE MATRIX (as of October 1, 2010)**

 <b>Strategic</b>	 <b>Operational Excellence</b>	 <b>Market Facilitation</b>	 <b>Grid Reliability</b>	 <b>Reporting</b>	 <b>Legal and Regulatory Compliance</b>
 <b>Strategy Development</b> Corporate objective setting adequately incorporates informed stakeholder input, market realities and management expertise.	 <b>Performance Monitoring</b> Clearly defined and actively monitored performance metrics linked to mission and goals - Performance status communicated and corrective action taken.	 <b>Customer Choice</b> Market design promotes efficient choice by customers of energy providers with effective mechanisms to change incumbent market participants as desired.	 <b>Grid Operations</b> Information required to operate the grid is efficiently gathered. Appropriate tools are prudently configured to efficiently operate the system.	 <b>Review Practices</b> Prudent measures are taken to insure that company disclosures are properly vetted and not misleading.	 <b>Legal &amp; Legislative</b> Operations are conducted in compliance with all laws and regulations. Impacts of current and proposed legislation are understood and communicated.
 <b>Mission and Goals</b> Corporate objectives and performance standards are understood and followed.  2011 budget is completed and ready for submission and discussion with the board. Efforts to transform the Project Management Organization into the Business Integration Organization are complete.	 <b>Business Practices</b> Business planning, processes and management standards are effective and efficient.	 <b>Nodal Implementation Project</b> Nodal Implementation on budget on schedule, and within defined scope.	 <b>Planning</b> Long-range planning methods enable efficient responses to system changes that are necessary to maintain reliability standards.	 <b>Disclosure</b> Reporting and other disclosures to intended parties is timely, accurate and effective.	 <b>Internal Control Compliance</b> Internal Control Compliance processes and management standards are effective, efficient, and provide stakeholders with required assurances of quality.
 <b>Reputation</b> Positive perceptions by stakeholders lead to less cost and greater flexibility resulting in enhanced enterprise value.  ERCOT addressing reputation issues by 1) refocusing communication efforts, 2) continuing to complete Nodal on time and on budget, 3) preparing a well thought out budget for 2011, and 4) increasing accountability.	 <b>Workforce</b> Organization design, managerial and technical skills, bench strength and reward systems aligned with corporate goals.  Initial organizational alignment of capabilities and employee skill sets required in a Nodal stabilized environment resulted in the reduction of 37 employees. Ready to move forward with succession planning and training initiatives once the new organization is put in place.	 <b>Counterparty Credit</b> Maintain credit risk exposure for overall market within acceptable limits.  Color remains yellow pending the review of risk factors in the Nodal market requested by F&A. Agreement reached on nodal CRR credit parameters at October TAC meeting. Assessment of each CPs creditworthiness for the December monthly CRR auction in progress, with daily ACL postings to begin on 10/28.	 <b>Bulk System Resources</b> Market Participants construct and make available adequate bulk electric grid resources.	 <b>Communication</b> Internal & external communications are timely and effective.	 <b>Industry Standards</b> Business and operational activities in compliance with all applicable regulatory, financial & accounting requirements, standards, & directives.  Still waiting for the final 2009 NERC audit report for the Critical Infrastructure Protection (CIP) portion. For 2010 NERC Audit, ERCOT was found to be fully compliant on the 693 (O/P) standards. CIP status is not determined at this point
 <b>Fiscal Management</b> ISO design requires competent, prudent and cost effective provision of services.	 <b>Technology Infrastructure</b> Information systems, supporting facilities and data are effectively managed and are reliable.  Systems stable. Sufficient system and computer room capacity exist for Nodal 'go-live'. Austin data center capacity near maximum and may not be able to accommodate additional unforeseen expansion prior to switchover to Bastrop. Capacity requirements are being closely monitored.	 <b>Administration, Settlement &amp; Billing</b> Market rules fairly applied to all participants. Accounting is timely and accurately reflects electricity production and delivery.	 <b>Operational Responsibility</b> Market participant conduct their operations in a manner which facilitates consistent grid reliability.  There are still uncertainties involved regarding operational impacts of existing and continually increasing amount of intermittent renewable generation on the system. RTWG brought a draft of the Texas Renewables Integration Plan (TRIP) to TAC in August that will provide additional guidance on what those uncertainties are and how to address them.	 <b>Adequacy and Integrity</b> Robust processes exist to support management assertions embodied within financial reports.	 <b>Regulatory Filings</b> Evidence, testimony and other supporting materials are compelling and successful.

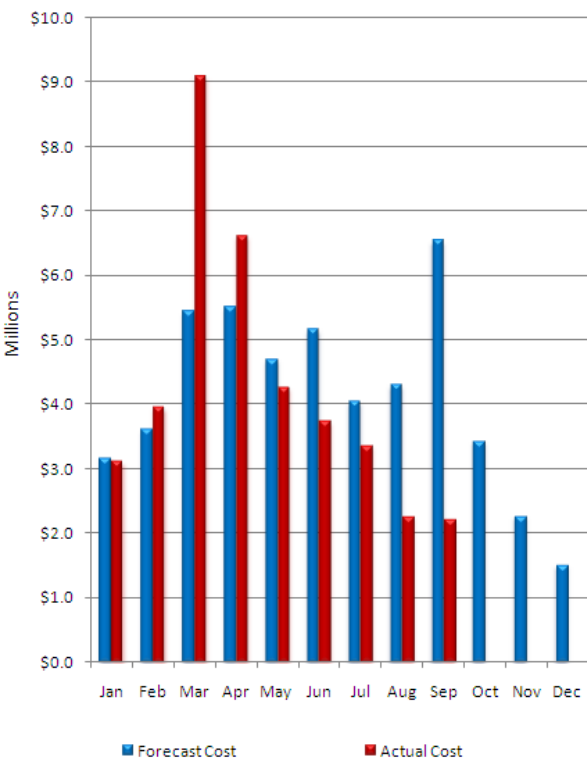
Legend:  Elevated Risk Level  Reduced Risk Level (New Risk Categories / Descriptions Indicated in **Green**)

# 8. Committee Brief: PMO

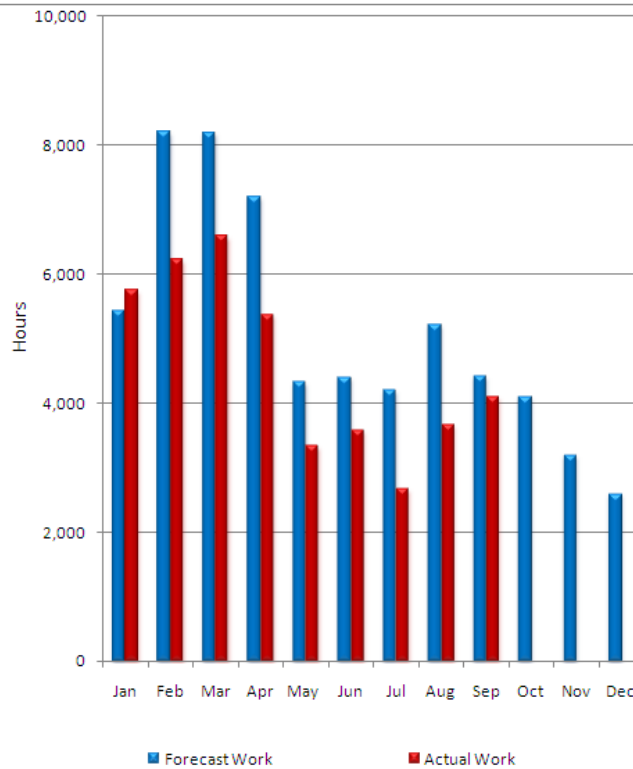
## ERCOT Enterprise Projects Summary Report

ERCOT		Overall Projects Report					Reporting Period:		9/30/2010	
Projects in ERCOT's Portfolio			Portfolio Performance							
Deferred	Concept	On Hold	Initiation	Planning	Execution	Closing	Schedule	Budget		
0	2	1	0	6	12	2	Green	Green		
			Closed	Total Active		22				
			Cancelled	Projects Not Started		0				
			Current Year Funded Budget:		\$55,485,000					

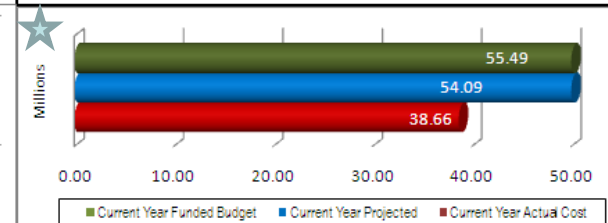
ERCOT Projects  
Current Year - Cost



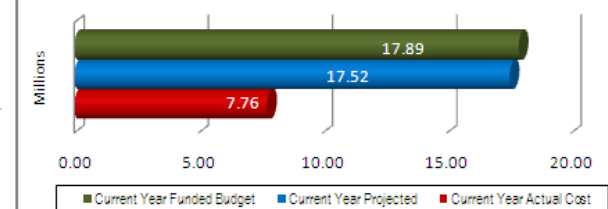
ERCOT Projects  
Current Year - Work



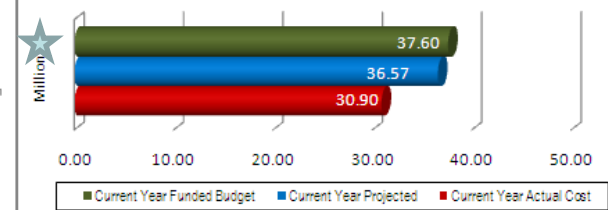
ERCOT Projects  
Current Year-to-Date Financials



ERCOT Projects (Excluding MET Center)



MET Center Project



★ Includes \$5.9M carry-over funds from 2009 for MET Center.



**ERCOT**  
**Summary of Investments**  
**September 30, 2010**

(\$ in 000s)

<u>Investment Account</u>	<u>Investment Type</u>	<u>Operating</u>	<u>Market</u>	<u>Deposit/ Restricted</u>	<u>Total</u>	<u>% Investments</u>
Bank of America	Treasury and Repo		\$ 8,755	\$ 13,000	\$ 21,755	13%
BlackRock	Treasury and Repo		4,753	8,542	13,295	8%
BlackRock	Treasury only			22,500	22,500	14%
Federated 068	Treasury and Repo	5	375	5,883	6,262	4%
Federated 0125	Treasury only		15	29,001	29,016	17%
Invesco	Treasury and Repo		7,758	14,015	21,773	13%
JPMorgan	Treasury and Repo	948	9,012	5,870	15,831	10%
Wells Fargo	Treasury and Repo		4,258	8,871	13,129	8%
Wells Fargo	Treasury only			22,500	22,500	14%
	<b>Subtotal</b>	<u>\$ 953</u>	<u>\$ 34,925</u>	<u>\$ 130,183</u>	<u>\$ 166,061</u>	<u>100%</u>

Other cash net of outstanding checks

\$ (1,541)

Total cash and cash equivalents

\$ 164,520

Note:

ERCOT has and will continue to increase the number of investment accounts available to it in preparation for additional levels of cash expected to be held during Nodal. However, ERCOT proposes allowing some flexibility in the maximum dollars held per fund as defined in the Investment Corporate Standard for a period of time (3-6 months) to ensure that ERCOT stays compliant with that Standard until investable funds in Nodal reach "steady state".



## 9. Future Agenda Items: November 2010

Mike Petterson

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- **Standing Internal Audit agenda items**
- **Recommend 2011 base operating budget**
- **Review of Investment Corporate Standard**
- **Review of external auditor quality control procedures and independence**
- **Appoint the independent auditors for upcoming year**
- **Approval of independent auditor fees for upcoming year**
- **Review scope of annual financial audit**
- **Committee briefs**
- **Future agenda items**

# 9. Future Agenda Items: F&A 2010 Yearly Schedule

Mike Petterson

## Quarter 1

- √ •Elect officers and confirm financial qualifications
- √ •Vote on CWG Chair/Vice Chair

## Quarter 2

- √•Report results of annual independent audit to the Board
- √•Review the procedures for handling Reporting violations
- √•Review results of annual audit, together with significant accounting policies (including required communications)
- √•Review operating plan and budget assumptions
- √•Review and approve Internal Audit Department Charter
- √•Conduct annual review of insurance coverage(s)
- √•Review the Company's dealings with any financial institutions that are also market participants
- √•Review the Market Credit Risk Corporate Standard

## Quarter 3

- Appoint the independent auditors for upcoming year
- Approval of independent auditor fees for upcoming year
- Review of committee charter
- Assessment of compliance, the internal control environment and systems of internal controls
- √•Report by CWG Chair on ERCOT credit policy

## Quarter 4

- Approve audit committee meeting planner for the upcoming year, confirm mutual expectations with management and the auditors
- Review and approval of Financial & Investment Corporate Standards
- Review and approval of annual operating budget
- Approve scope of internal auditing plan for upcoming year
- Assessment of the adequacy and effectiveness of the Internal Audit staff
- Perform Finance & Audit committee Self Assessment
- Review requirements for membership in CWG
- Review and approve CWG charter
- Review the Company's dealings with any financial institutions that are also market participants
- Review scope of annual financial audit
- Review of external auditor quality control procedures and independence

## Recurring Items

- Review minutes of previous meeting
- Report monthly matters to the Board (chair)
- Review EthicsPoint activity
- Review significant audit findings and status relative to annual audit plan
- Review investment results quarterly

# 10. Other Business

## Mike Petterson

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