



Item 3: Committee Education on Project Priority List

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Finance & Audit Committee Meeting

ERCOT Public

February 10, 2014

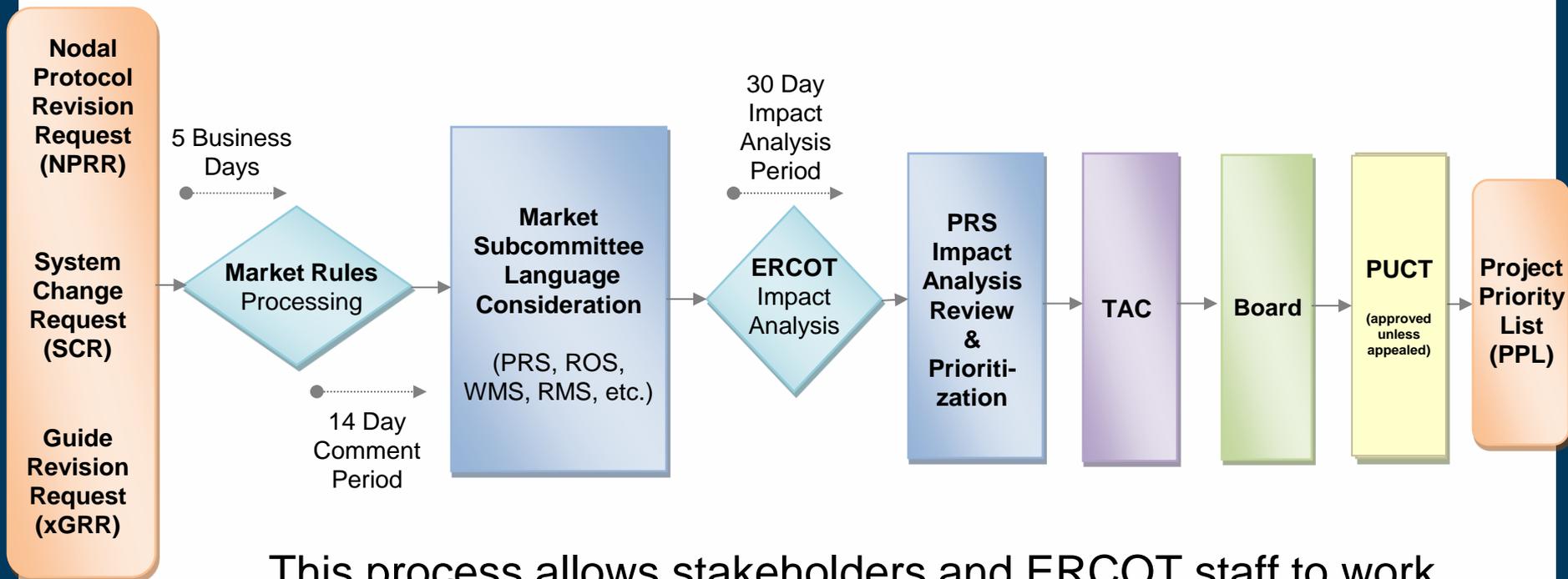
Agenda

- Market Rule Changes
 - Process
 - Summary Stats
- Project Priority List (PPL)
 - Overview
 - Prioritization
- Projects
 - Lifecycle
 - Management Tools

Market Rule Changes

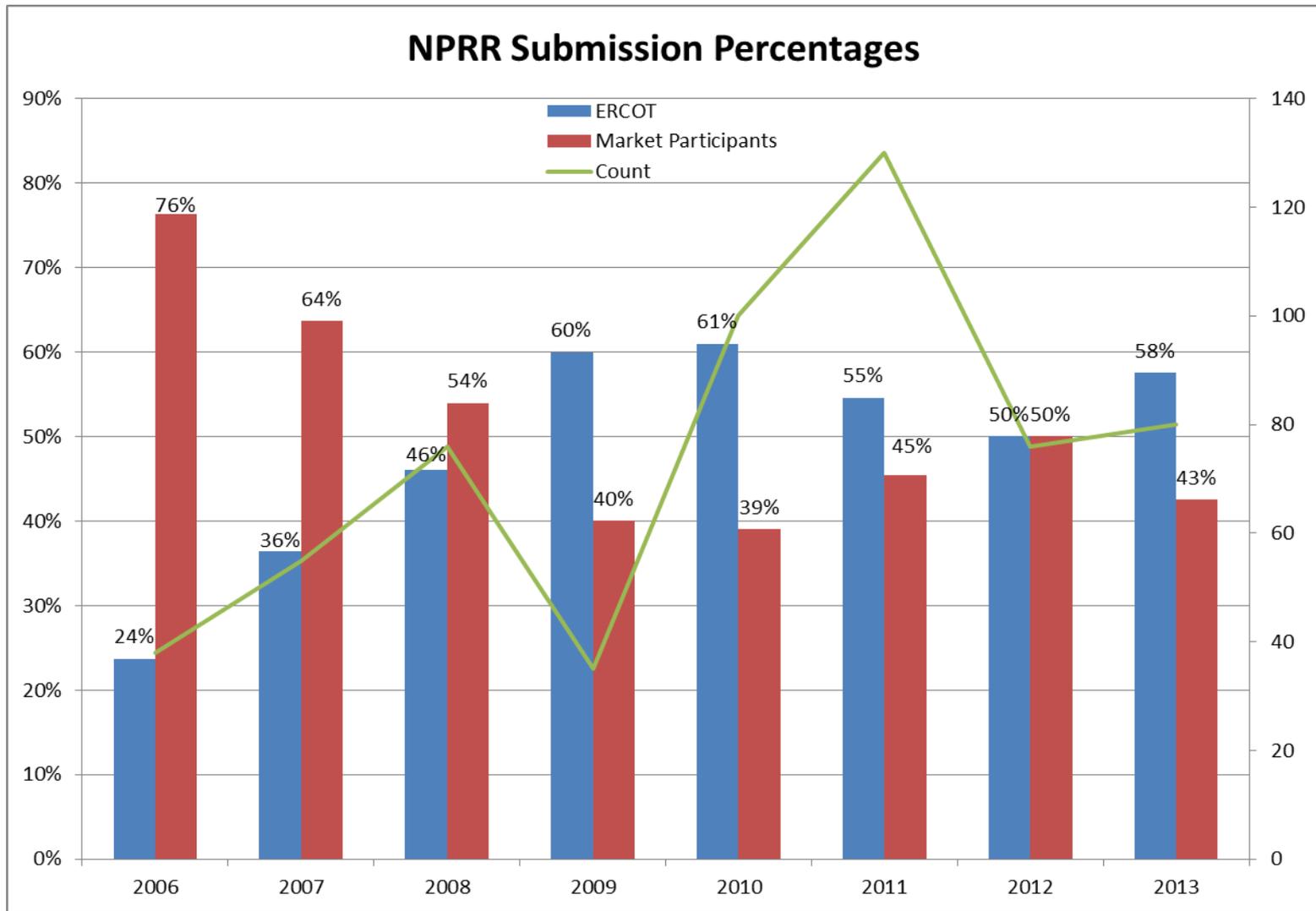
Protocol, Guide, and System Change Request Process

The Nodal Protocol and System Change Request approval and prioritization processes are defined in Section 21 of the Protocols:



This process allows stakeholders and ERCOT staff to work together to identify cost-effective and efficient solutions.

Nodal Protocol Revision Request (NPRR) Statistics



Protocol, Guide, and System Change Request Statistics

2013 at a Glance

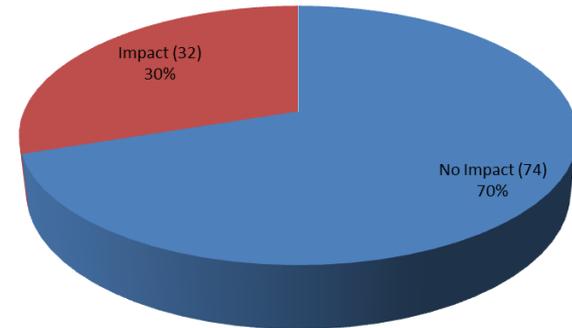
106 Protocol, Guide or System Changes approved

- 74 = No impact
- 27 = < \$125k cost impact
- 5 = > \$125k cost impact

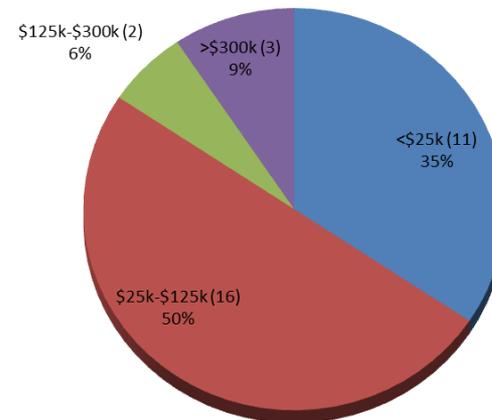
In Addition:

- 9 withdrawn by submitter
- 5 rejected in stakeholder process

106 Revision Requests Approved in 2013
NPRRs, SCRs and Guide RRs



32 Revision Requests Approved with Impact



Impact Analysis (IA)

- ERCOT completes an IA on every proposed project to assist decision-makers in the evaluation and approval process.
- IAs include:
 - Cost Range, Project Duration, Systems Impacted, Staffing Impacts
 - Preliminary labor estimates for use in staffing resource management
- Important Facts to Remember:
 - The initial cost estimate is based on high level requirements.
 - The cost range is derived from the initial cost estimate and ERCOT staff confidence in that estimate.
 - There are many factors that impact the final project cost so the IA is only a rough order of magnitude estimate.
 - The initial cost estimate helps to forecast project spending.
 - As the project proceeds, the cost estimate is revised, resulting in a revision to the spending forecast of the project portfolio.
 - The actual project cost estimate is confirmed when the project completes the Planning phase.

Impact Analysis (IA)

- How accurate are ERCOT IA cost estimates?

Results of Revision Request Projects Completed in 2012 / 2013

	>25% Under Cost Estimate Range	Up To 25% Under Cost Estimate Range	Spend On Target with IA Estimate	Up To 25% Over Cost Estimate Range	>25% Over Cost Estimate Range	Total
Completed Projects <\$125k	18	7	13	5	3	46
Completed Projects >\$125k	2	2	3	3	3	13
Percent Accuracy	34%	15%	27%	14%	10%	100%

- **Conclusions**
 - Strong tendency to under-run cost estimates on small projects
 - Results on larger projects shows no clear trend
 - High-level requirements at the time of IA often leads to conservative estimation

Project Priority List

Project Priority List (PPL) Overview

- Overview
 - The Project Priority List (PPL) has been used for many years to track approved projects.
 - Various attributes are tracked for each project. Examples:
 - Approval Status (status in stakeholder process)
 - Project Status (Not Started, Planning, Execution, Complete, etc.)
 - Project Budget and Budget Range
 - Priority and Rank
- History
 - Previously, “funded” projects were defined as those where cumulative budgets did not exceed the total project funding level.
 - The “cutline” was the point at which lower ranked projects were not funded.
 - When a project fell below the cutline, it would often have difficulty getting funded in future years.

Project Priority List (PPL) Overview

- Recent Changes (implemented in 2011)
 - “Multi-Year” format allows for projects to be targeted for a specific funding year.
 - Projects that are not able to be funded in the current year are planned for a future year; or
 - The project start date is set to get the effort underway in the current year with significant spending occurring in a subsequent year(s).
 - Project Categories allow “similar” projects to be ranked together:
 - Business Strategy
 - Regulatory
 - Efficiencies & Enhancements
 - Technical Foundation
 - Forecast cash flow is used to estimate projected spending per year.
 - Granular tracking of monthly projected spend:
 - For active projects, spending projections come from project managers.
 - For “Not Started” projects, projected start and end months are used to project cash flow.

Project Priority List

	Multiyear PPL - 2012-2018						2013			2014			2015						
Project Category	Priority	Rank	Source Doc	Approval Status	Project Number	Project Name - Internal	Release	Project Status	Budget	Budget Range	Spend Forecast	Budget	Budget Range	Spend Forecast	Budget	Budget Range	Spend Forecast	Projected Start	Projected End Date
Business Strategy	2012	160		PPL	066-01	Planning Site Transition to MIS	2014-R2 Off-cycle	Execution	\$80,000	\$80k-\$120k	\$71,466	\$172,225	\$125k-\$175k	\$147,030			\$0	Sep 2012	Jul 2014
Business Strategy	2012	365	NPRB416	PPL	078-01	Removal of the RUC Clawback Charge for Resources Other than RMR Units	2014-R1 Off-cycle	Closing	\$305,731	\$275k-\$325k	\$241,330			\$0			\$0	Dec 2012	Jan 2014
Business Strategy	2013	365	NPRB573	PPL	078-01	Clarification of the RUC Resource Buy-Back Provision for Ancillary Services	2014-R1 Off-cycle	Execution		See parent project PR078-01	\$0	\$0	See parent project PR078-01	\$0			\$0	Nov 2013	Jan 2014
Business Strategy	2013	380		PPL	057-01	EPS Metering DB Redesign	2014-R4	Execution	\$269,241	\$225k-\$275k	\$370,475	\$0	\$0k	\$329,485			\$0	Jun 2012	Sep 2014
Business Strategy	2013	580	NPRB484	PPL	034-01	Revisions to Congestion Revenue Rights Credit Calculations and Payments	2013-R6	Execution	\$598,186	\$590k-\$600k	\$605,773	\$0	\$0k	\$0			\$0	Mar 2013	May 2014
Business Strategy	2013	735	SCR756	PPL	010-03	MarkeTrak Enhancements - Remaining SCR756 Items	2014-R3	Planning	\$80,170	\$50k-\$100k	\$52,311	\$207,620	\$200k-\$250k	\$188,360			\$0	Sep 2013	Jul 2014
Business Strategy	2013	860	NOGRB			Daily Grid Operations Support													
Business Strategy	2013	865	NPRB																
Business Strategy	2013	885	OB																
Business Strategy	2013	892	NPRB																
Efficiencies / Enhancements	2012	50				Enhancements													
Efficiencies / Enhancements	2013	170																	
Efficiencies / Enhancements	2014	280																	
Regulatory	2013	70	NPRB568	PPL	117-01	Real-Time Reserve Price Adder Based on Operating Reserve Demand Curve	2014-R3 Off-cycle	Execution		See parent project PR117-01	\$0		See parent project PR117-01	\$0			\$0	Oct 2013	Jul 2014
Regulatory	2013	70	Various	PPL	117-01	2014 Market System Enhancements	2014-R3 Off-cycle	Execution	\$232,831	\$200k-\$300k	\$79,741	\$1,141,323	\$10M-\$12M	\$1,115,025			\$0	Oct 2013	Jul 2014
Technical Foundation	2012	40		PPL	10052_01	Settlement System Upgrade	2014-R6	Execution	\$2,306,672	\$2.0M-\$2.5M	\$2,473,310	\$1,176,992	\$10M-\$15M	\$1,887,574	\$26,065	<\$50k	\$26,065	Mar 2010	Jun 2015
Technical Foundation	2012	50		PPL	017-01	Oracle 11g Upgrade	2014-Various	Execution	\$1,156,164	\$800k-\$1.2M	\$1,120,878	\$270,609	\$200k-\$300k	\$264,785			\$0	Nov 2011	Apr 2014
Technical Foundation	2012	60		PPL	052-01	EMS Upgrade	2016-R2	Planning Ph2	\$1,500,000	\$1M-\$2M	\$1,254,262	\$2,500,000	\$2M-\$4M	\$2,530,681	\$3,000,000	\$2M-\$4M	\$3,000,000	Jun 2012	May 2016
Technical Foundation	2012	100		PPL	065-01	NMMS Upgrade	2014-TBD	Planning	\$189,029	\$150k-\$200k	\$173,671	\$81,175	\$50k-\$100k	\$69,360			\$0	Aug 2012	Dec 2014
Technical Foundation	2013	190		PPL	083-01	Centralized Application Log Management	2014-R3 Off-cycle	Execution	\$182,425	\$150k-\$200k	\$183,229	\$99,115	\$90k-\$100k	\$103,695			\$0	Feb 2013	Jun 2014

Items to note:

Project Category – Market Revision Requests are typically in Business Strategy

Priority – Indicates Start Year

Rank – Indicates relative importance

Individual Years – Dollars reflect amount of planned work within the calendar year

Release – Indicates when expected to be released to Production



Summary of Project Demand by Category

- Fairly consistent demand for projects in the Business Strategy Category
- Technical Foundation demand increasing due to needed refreshes

PPL Category	2012 Actual Spend (Budget = \$15M)	2013 Actual Spend (Budget = \$16M)	2014 Forecast (Budget = \$25M)	2015 Forecast (Budget = \$25M)
Business Strategy	\$ 5.7M	\$ 4.1M	\$ 6.7M	\$ 7.8M
Regulatory	\$ 1.1M	\$ 0.5M	\$ 1.1M	\$ 0
Efficiencies / Enhancements	\$ 2.8M	\$ 2.0M	\$ 5.1M	\$ 3.1M
Technical Foundation	\$ 6.5M	\$ 9.8M	\$ 18.1M	\$ 20.6M
Totals	\$ 16.1M	\$ 16.4M	\$ 31.0M	\$ 31.5M

Project Prioritization

- PRS has adopted a set of guiding principles to assist in project prioritization (revised June 2013).
 - **Priority** – Year in which a project is targeted for Initiation
 - Actual go-live date may be in a subsequent year
 - **Rank** – Numeric value to indicate relative importance of projects in the same Project Category
 - Assigned in increments of 10 to allow for future additions
 - New Additions to the PPL
 - Consider qualitative and quantitative elements of the project
 - Projects requested to be worked in a particular year without displacing current projects should be ranked at the end of the project list for that particular year
 - A Rank is proposed based on relative importance with other projects
 - Changes in Priority and Rank are proposed when relative priorities change

Impact to PPL when Board approves an NPRR

- If a project will result, ERCOT staff determines a target start date based on the Board-approved Priority and Rank.
- The target start date allows for cost and resource impacts in current and future years to be assessed.
 - If the project can be added to the plan without significantly impacting other efforts, the target start date and planned spending is confirmed.
 - If not, various options are considered to fund the project:
 1. Defer lower priority “Not Started” projects by one or more months
 2. Defer other spending that is not time-critical (such as Minor Cap)
 3. Slow spending on lower priority in-flight projects
 4. Seek additional funding from the ERCOT Executive Team
 - Within the limits of the current ERCOT budget
 5. Seek additional funding from the Board and/or PUCT
 - Consider an addition to the ERCOT budget
- A similar review process is conducted when an in-flight project is running over budget or is taking more time than expected.

Approved Revision Requests “Not Started” – Planned to Start in Future Months

Revision Request	Target Start Date	Release Target	Cost Estimate	Author
NPRR439 – Updating a Counter-Party’s Available Credit Limit for Current Day DAM	Jan 2014	2014-R4	\$125k-\$135k	ERCOT
NPRR491 – Updated Demand Response Information for ERCOT	Feb 2014	2014-R4	\$40k-\$50k	Edison Mission
NPRR495 – Changes to Ancillary Services Capacity Monitor <i>Moved from July 2014</i>	Apr 2014	2014-R6	\$105k-\$125k	MISUG
NPRR500 – Posting of Generation that is Off but Available <i>Moved from July 2014</i>	Apr 2014	2014-R5	\$60k-\$75k	Morgan Stanley
NPRR487 – QSGR Dispatch Adjustment	May 2014	2014-R6	\$25k-\$45k	Luminant
NPRR543 – Message for Confirmed E-Tags	May 2014	2014-R5	\$40k-\$60k	Tenaska
NPRR559 – Revisions to MCE Calculation	May 2014	2014-R5	\$10k-\$15k	ERCOT
NPRR272 – Definition and Participation of C	Jul 2014	2014-R6	\$145k-\$160k	ERCOT
NPRR519 – Exemption of ERS-Only QSEs from Financial & Capitalization Requirements	Jul 2014	2014-R6	\$40k-\$60k	ERCOT
NPRR524 – Resource Limits in Providing Ancillary Service	Jul 2014	2014-R6	\$50k-\$75k	GDF Suez
SCR771 – Allow Ind. Master QSE to Represent Split Gen. Resources	Jul 2014	2014-R6	\$95k-\$110k	Sandy Creek
NPRR256 – Sync PRR787, Add Non-Compliance Lang. to QSE Perf. Standards	Aug 2014	2015-R2	\$100k-\$250k	Luminant
NOGRR084 – Daily Grid Operations Summary Report	Sep 2014	2015-R3	\$300k-\$500k	MISUG
NPRR210 – Wind Forecasting Change to P50, Sync with PRR841	Oct 2014	2015-R2	\$45k-\$55k	Morgan Stanley
NPRR553 – Monthly BLT Payment and Charge for Presidio Exception	Oct 2014	2015-R2	\$10k-\$25k	CSWG
NPRR455 – CRR Shift Factors Report	Nov 2014	2015-R3	\$245k-\$270k	MISUG

Monthly review of upcoming projects starts at PRS

ERCOT requests your input:

Are these the most important revision requests to work on over the next few months?



Projects

Project Lifecycle

Project Priority List Review

Priority

Resource
Availability

Cash Flow
Impact

Dependencies

ERCOT Review

Project
Initiation

ERCOT
Review For
Continuing
Effort

Project
Planning

ERCOT
Review For
Continuing
Effort

Project
Execution

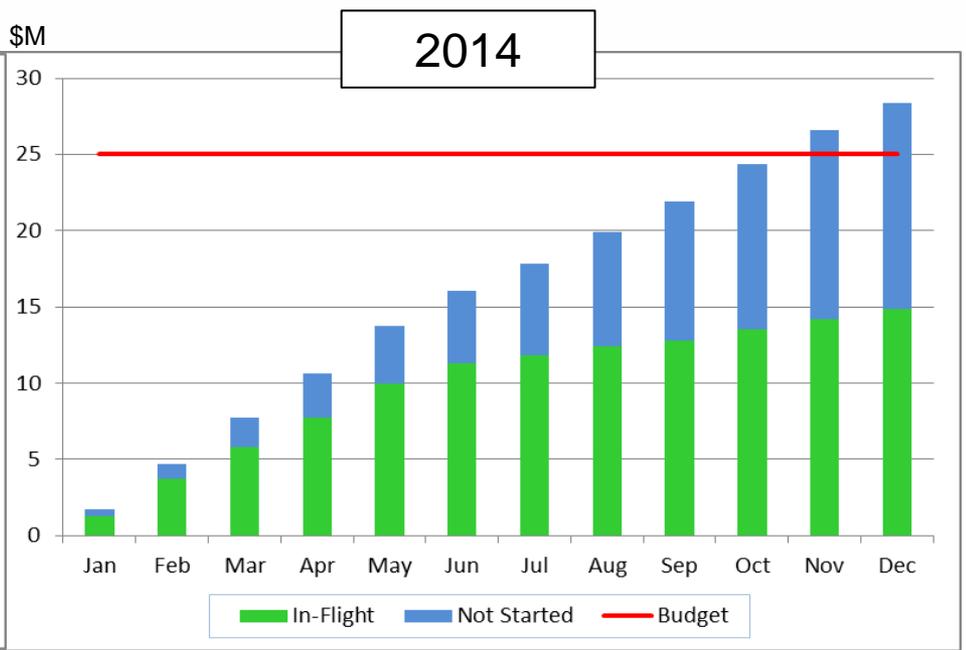
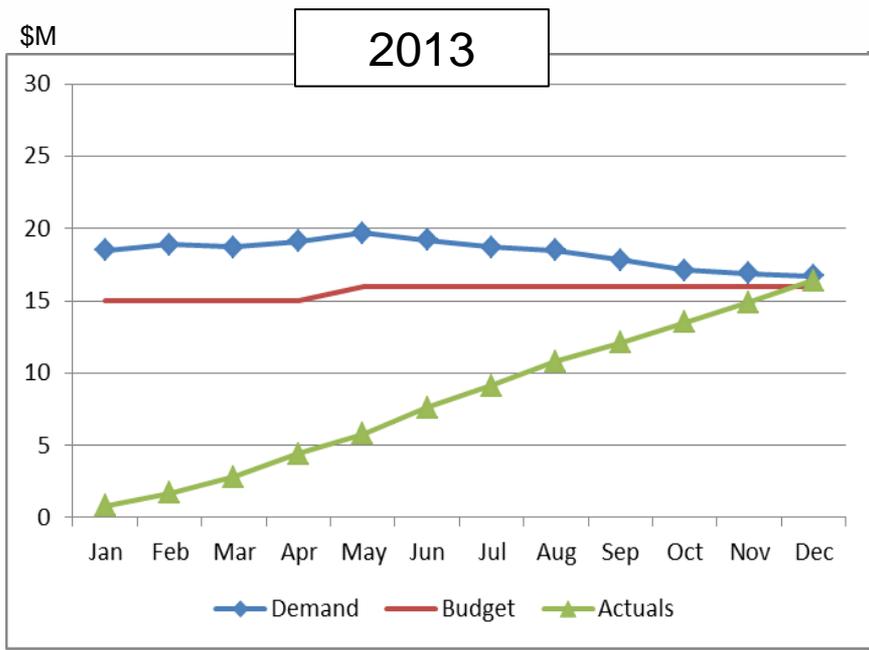
ERCOT
Review

Project
Closed

ERCOT
Review

Management Tool – Cash Flow Projections on Approved Projects

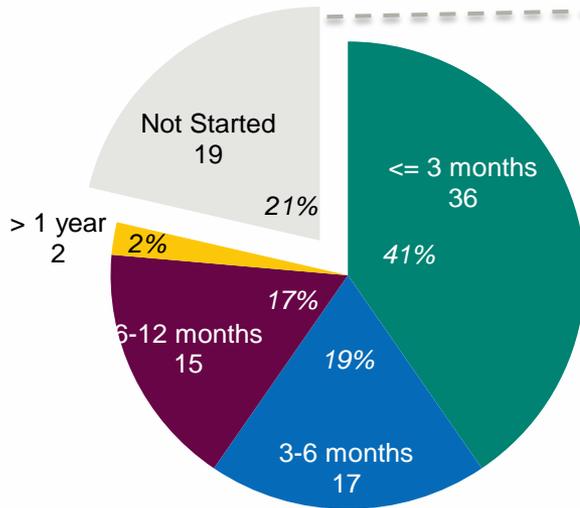
- ERCOT manages total project demand to help ensure the most important projects are funded to deliver the maximum value with allocated project funds.
- By careful portfolio and project management, adjustments are made so that project spending and demand converge on the approved portfolio budget amount.
- Monthly review of project spending forecast occurs at PRS.



Status of Board-Approved Projects – Q4 2011 → Current

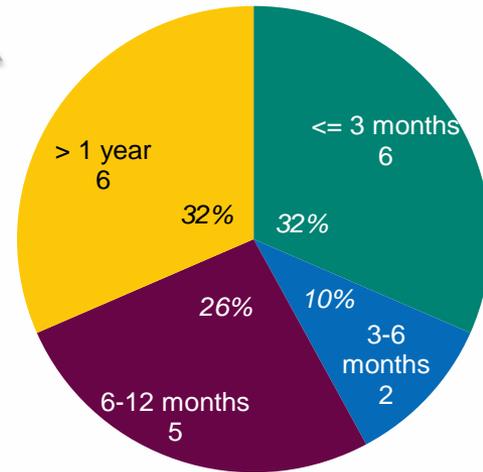
ERCOT continues to work the project queue in a manner that gets Revision Request projects started in a reasonable amount of time:

**Time to Start Revision Requests
Board Approval → Project Initiation**



89 Board-Approved RRs That Result in a Project

**Aging of “Not Started” Revision Requests
Time Since Board Approval**

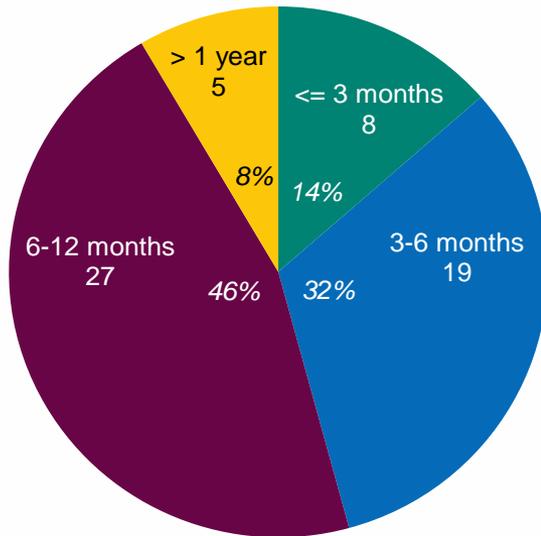


19 Board-Approved RRs That Have Not Yet Started

Status of Board-Approved Projects – Q4 2011 → Current

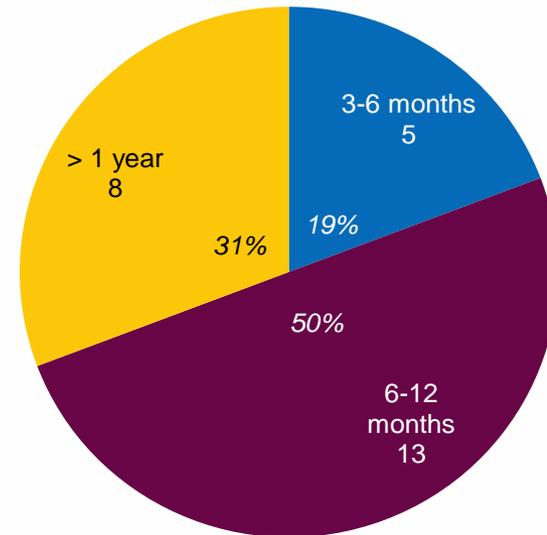
ERCOT continues to work the project queue in a manner that gets Revision Request projects completed in a reasonable amount of time:

Time to Deliver Revision Requests
Project Initiation → Project Completion



59 Board-Approved Revision Request
Projects Approved and Delivered

Time to Deliver Internal ERCOT Projects
Project Initiation → Project Completion



26 Internal Projects Approved and
Delivered

Project Stoplight Report

- The Stoplight Report is a good vehicle for Board members and others to keep track of projects of interest to them.
 - Posted to the Board of Directors page each month

ERCOT Project Portfolio Stoplight Report - 2013 Year-End

PROJECTS IN FLIGHT (Count = 52) Sorted by Phase / Project Num								\$ 13,392,437	\$ 12,161,883	9%	\$ 41,808,527	\$ 40,342,412	3%
Project Number	Projects in Planning Phase	Phase	Baseline Phase Start	Baseline Phase Finish	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Status	Sum of 2013 Budgets	2013 Actual Spend	2013 Variance	Sum of Total Budgets	Total Forecast Spend	Total Variance
052-01	EMS Upgrade	Planning Ph2	8/7/2013	10/30/2014	TBD	5/30/2014	34%	\$1,500,000	\$1,254,262	16%	\$8,700,000	\$8,373,373	3%
065-01	NMMS Upgrade	Planning	5/1/2013	3/1/2014	TBD	3/7/2014	-1%	\$189,029	\$173,671	8%	\$270,204	\$243,031	10%
074-02	Cyber Security Project #9	Planning	12/17/2013	3/26/2014	TBD	3/25/2014	1%	\$5,000	\$5,005	0%	\$201,145	\$120,020	40%
089-01	Information Technology Change Management	Planning	4/10/2013	4/2/2014	TBD	4/1/2014	0%	\$37,778	\$45,848	-21%	\$251,870	\$236,108	6%
097-01	ABB MMS OS Technology Refresh	Planning	5/29/2013	2/4/2014	TBD	2/4/2014	0%	\$1,463,441	\$679,070	53%	\$3,908,441	\$2,733,395	30%
104-01	Disaster Recovery: S&B, RTL, MDT	Planning	5/15/2013	11/15/2013	TBD	1/21/2014	3 -36%	\$402,663	\$408,164	-1%	\$436,253	\$453,069	-3%
106-01	MP Online Data Entry - Ph 1	Planning	10/9/2013	3/5/2014	TBD	3/24/2014	8 -12%	\$110,000	\$110,001	0%	\$800,000	\$800,442	0%
107-01	IBM AIX Operating System Upgrades	Planning	10/16/2013	11/20/2013	TBD	1/29/2014	8 -200%	\$37,150	\$33,190	10%	\$135,710	\$181,130	3 -33%
Project Number	Projects in Execution Phase	Phase	Baseline Phase Start	Baseline Go-Live Target	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Status	Sum of 2013 Budgets	2013 Actual Spend	2013 Variance	Sum of Total Budgets	Total Forecast Spend	Total Variance
016-01	ADP-IDM Interface	Execution	11/6/2013	3/13/2014	3/13/2014	4/23/2014	0%	\$43,354	\$30,488	29%	\$237,713	\$218,898	7%
017-01	Oracle 11g Upgrade	Execution	10/10/2012	4/2/2014	3/31/2014	4/26/2014	0%	\$1,156,164	\$1,120,876	3%	\$2,376,022	\$2,331,676	1%
047-01	CMSDK/MIR Replacement	Execution	4/24/2013	12/8/2013	3/31/2014	5/21/2014	3 -49%	\$666,913	\$785,615	3 -17%	\$927,233	\$1,281,880	3 -38%
057-01	EPS Metering DB Redesign	Execution	4/17/2013	9/6/2013	7/26/2014	8/7/2014	3 -228%	\$269,241	\$370,475	3 -37%	\$304,027	\$734,713	3 -141%
066-01	Planning Site Transition to MIS	Execution	10/16/2013	5/2/2014	5/2/2014	7/2/2014	0%	\$80,000	\$71,466	10%	\$260,210	\$224,986	13%
077-01	Contract Lifecycle Management	Execution	9/11/2013	5/5/2014	5/5/2014	7/23/2014	0%	\$199,148	\$199,410	0%	\$355,028	\$350,365	1%
Project Number	Projects in Stabilization	Phase	Baseline Execution Phase Start	Baseline Go-Live Target	Actual Go-Live Date	Scheduled Execution Phase Finish	Schedule Status	Sum of 2013 Budgets	2013 Actual Spend	2013 Variance	Sum of Total Budgets	Total Forecast Spend	Total Variance
053-01	Cyber Security Project #7	Execution	5/8/2013	11/15/2013	11/15/2013	1/29/2014	0%	\$367,461	\$167,007	54%	\$444,022	\$277,694	37%
095-01	Mobile Application Enhancement	Execution	5/8/2013	9/5/2013	8/16/2013	10/21/2013	16%	\$315,071	\$378,122	3 -20%	\$315,071	\$378,122	3 -20%
101-01	Emergency Notification System Hardware Refresh	Execution	11/13/2013	1/24/2014	12/20/2013	1/24/2014	48%	\$88,188	\$91,362	-3%	\$93,385	\$93,217	0%
NPRR476	Market Submitted Energy Offer Curves Disclosures	Execution	8/28/2013	12/11/2013	12/11/2013	1/8/2014	0%	\$51,191	\$48,214	6%	\$52,231	\$48,474	7%

Summary Points

- Market Rule Changes
 - More than half of all Market Rule changes are submitted by ERCOT.
 - Most Market Rule changes are no impact or minor cost to implement.
- Project Priority List
 - The Multi-Year PPL better reflects timing and cash flow of projects.
 - Market Participants and ERCOT actively review the PPL monthly to ensure priority is appropriate.
- Project Management
 - Successfully maximizes project throughput with budget dollars available.
 - Delivers market-driven changes in a reasonable timeframe.
- Business Planning & Integration is always seeking opportunities to improve our processes.

Questions?
