



Item 5: 2017 Strategic Goal Update

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Human Resources and Governance Committee Meeting

ERCOT Public

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Anticipate and adapt to changing resource mix

Initiative	Status
Tune Short Term Load Forecast (STLF)	Completed Q4-16. STLF performance continues to be monitored.
Forecasting: Load (short-term and mid-term), Solar and Wind	<ul style="list-style-type: none"> • Tuning Mid-term Load Forecast; completed Q4-16. • Analyze Solar and Wind forecasts daily for potential improvements to reduce forecasting errors (which continue to trend positively). • Initiated project Q1-17 to add another wind forecast focusing on extreme conditions.
Inertia and Ancillary Service needs for changing Resources	<ul style="list-style-type: none"> • Implemented Control Room inertia tools and conducted related Operator training; completed Q3-16. • Held educational presentations with stakeholders Q4-16. • Continue to work with Stakeholders on different methods to maintain critical inertia. • Include Solar Forecast error in Non-Spin Reserve Methodology; target Q4-17. • Studying methods to include impacts of future renewables installed capacity on Non-Spin Reserve requirements.
Implement New Desk in Control Room	Implemented new Reliability Desk in Control Room; completed Q1-17.
Develop white paper on Switchable Generation Resources and align concepts with Reliability Coordinator agreements	<ul style="list-style-type: none"> • Published whitepaper Q3-16. • Developed draft NPRR related to Current Operating Plan status; draft in discussion with stakeholder working groups. • Revisions to Coordination Agreements with MISO and SPP in progress; target Q3-17 completion. • Draft NPRR addressing emergency operation conditions is on hold pending Coordination Agreement revisions.

Anticipate and adapt to changing resource mix (continued)

Initiative	Status
<p>Continued integration of intermittent resources:</p> <ul style="list-style-type: none"> Filed NPRR785, Synchronizing WGR and PVGR COPs with Short Term Wind and Photovoltaic Forecasts Intra-hour Wind Forecast 	<ul style="list-style-type: none"> NPRR785 approved by Board Q4-16; implemented Q1-17. Conducting intra hour wind forecast performance review; requirement for intra hour forecast included for secondary wind forecast.
<p>Draft an NPRR to better define technical requirements for limited-participation resources (e.g. Private Use Networks that do not offer into SCED)</p>	<p>Assessing essential modeling data needed and developing draft NPRR; target completion Q3-17.</p>
<p>Work with market to track growth of retail product offerings for dynamic pricing and other retail demand response incentives:</p> <ul style="list-style-type: none"> Analyzing responses to price events and shifts in behavior by those reported in Time of Use programs 	<p>Included analysis of MW responses per category in 2016 Annual Report of Demand Response; published Q1-17.</p>
<p>Improve visibility and participation of distribution level resources:</p> <ul style="list-style-type: none"> Develop white paper to outline options for distributed energy resource (DER) participation in markets, and supported Distributed Renewable Energy & Ancillaries Markets (DREAM) Task Force 	<p>Published DER Reliability whitepaper Q1-17. Working with TSPs on implementation approach.</p>

Provide thought leadership in support of continued improvements to operational reliability and markets

Initiative	Status
<p>Enhance Operational Reliability:</p> <ul style="list-style-type: none"> Facilitate transmission planning improvements; formalize load-scaling methodology 	<p>PGRR042, Regional Transmission Plan Model Reserve Requirement and Load-Generation Imbalance Methodology, approved by Board Q4-16; partially implemented Q1-17. Remaining language will be implemented Q1-18.</p>
<p>Enhance Outage Scheduling:</p> <ul style="list-style-type: none"> Work with stakeholders in the Outage Coordination Task Force to identify high impact outages to more efficiently coordinate their submittal and approval 	<p>NPRR758, Improved Transparency for Outages Potentially Having a High Economic Impact, project is in Execution phase; target go-live Q2-17.</p>
<p>Consider redesign of Ancillary Services to ensure ERCOT continues to maintain grid reliability as the ERCOT System and Resource mix continue to evolve</p>	<p>Continue to work with stakeholders to identify incremental Ancillary Service adjustments to meet ERCOT system needs.</p>
<p>Assess Environmental Regulatory Impacts:</p> <ul style="list-style-type: none"> Conduct studies as appropriate and communicate activities with Stakeholders 	<ul style="list-style-type: none"> Completed 2016 Regional Transmission Plan study Q4-16. Monitoring pending court challenges and regulatory developments.
<p>Development of rules to address risk of sub-synchronous oscillation (SSO) in the ERCOT region</p>	<ul style="list-style-type: none"> Completed detailed study with TSPs in Q1-17 on selected Resource Entities to better define SSO criteria. Held two workshops Q1-17; Stakeholder discussions continue; target Q2-17 for ERCOT Board consideration of NPRR562, Subsynchronous Resonance.
<p>Evaluate Multi-Interval Real-Time Market (MIRTM):</p> <ul style="list-style-type: none"> Develop requirements and simulator for MIRTM to evaluate potential net benefits MIRTM and Real-Time Co-optimization issues being raised to the PUCT for discussion 	<ul style="list-style-type: none"> Completed Q2-17. MIRTM Analysis results are scheduled to be presented at the April 2017 Board and filed with the PUCT. Ongoing discussions at PUCT Open meetings.

Provide thought leadership in support of continued improvements to operational reliability and markets (continued)

Initiative	Status
Explore improvements to scarcity pricing during Energy Emergency Alert, Emergency Response Service, Load Resource deployment: <ul style="list-style-type: none">Evaluate changes to Operating Reserve Demand CurveSupport stakeholder discussions to further develop concept of enabling additional Resources to contribute to Real-Time price formation and to expand access to the Real-Time Energy Market	PUCT opened Docket No. 45572, Review of the Parameters of the Operating Reserve Demand Curve.
Phasor Measurement Units	Vendor selection project for PMU analysis software targeted to complete Q2-17.
Market Continuity	Draft principles were reviewed at the March 2017 TAC.
Manage Integration of Distributed Generation: <ul style="list-style-type: none">Map Registered Distributed Generation to the transmission gridBegin developing market rules framework for enabling Nodal (local) pricing to Registered DG units	Working with stakeholders to: <ul style="list-style-type: none">Define process for mapping registered Distributed Generation units to Common Information Model.Draft market rules that enable Nodal pricing for both passive ("DER Light") and active ("DER Heavy") Distributed Generation.

Deliver channels and tools to stakeholders for enhanced communication and increased transparency and access

Initiative	Status
<p>Implement Enterprise Content Alignment Program (ECAP) strategy and roadmap. ECAP projects include:</p> <ul style="list-style-type: none"> • Governance and Taxonomy - Define enterprise Information Governance policies and Taxonomy/Metadata framework • Implement Taxonomy into existing systems • Enterprise Content Management (ECM) Proof of Concept - Define, validate and recommend enterprise content management solution 	<ul style="list-style-type: none"> • Completed Information Governance policies for taxonomy; completed taxonomy and metadata framework; completed enterprise data maps. • Implementation scheduled to begin Q2-17. • Enterprise Content Management (ECM) Proof of Concept scenario testing complete. Infrastructure planning is in progress. Vendor selection target to complete Q3-17.
<p>Improve communication consistency of Grid conditions by improving the reliability and performance of grid communication information technology</p>	<p>End-to-end testing scheduled to begin Q2-17.</p>
<p>Assist with evaluation of Smart Meter Texas (SMT) transition options.</p>	<p>At this time, no role for ERCOT in SMT has been defined. ERCOT continues to support PUCT activities as needed.</p>
<p>Develop data services to support Market Participant needs:</p> <ul style="list-style-type: none"> • Engage in market forums to discuss potential changes for external web services strategy • Implement MP Online functionality: Automate some manual Generation Interconnection or Change Request (GINR) processes to reduce errors and increase efficiency 	<ul style="list-style-type: none"> • Ongoing presentations to Working Groups and Subcommittees followed by SCR submission; target Q1-17. • Project in Execution phase; target go-live Q3-17.
<p>Full Interconnection Study process changes</p>	<ul style="list-style-type: none"> • PGRR053, Addition of Proposed Generation Resources to the Planning Models, approved by February 2017 Board. • PGRR052, Stability Assessment for Interconnecting Generation, and NPRR809, GTC or GTL for New Generation Interconnection, are scheduled for April 2017 Board consideration.

Continually enhance our cyber and physical security posture

Initiative	Status
Participate in NERC Grid Ex IV 2017 planning and exercise	Planning 30% complete.
Continue progress on Critical Infrastructure Security Roadmap	2016 Roadmap complete. 2017 Roadmap is 25% complete.
Continue collaborative efforts on security issues	Ongoing work with various Industry/Government groups on security issues.
Coordinate Grid Resilience Working Group	Tracking EPRI study to evaluate impacts of EMP on power system. First phase released Q1-17; final targeted for Q2-19.

Develop ERCOT resources - people and technology

Initiative	Status
Implement Technology Refresh (DC4 Project)	<ul style="list-style-type: none"> • Eight of 11 DC4 projects are active; target Q2-17 to initiate remaining projects. • Committed spend near 75% of forecasted budget. Program is approximately 54% through estimated timeline. • DC4 procurement in progress with approximately 75% of purchases complete; target completion Q4-17. • DC4 networks are being refreshed and cutover. Database server migrations in progress. Target completion Q2-17. • Converged infrastructure and database storage migrations are in progress; target completion Q1-18.
Implement major upgrades: <ul style="list-style-type: none"> • Network Model Management System (NMMS) • Congestion Revenue Rights (CRR) Framework • Credit Monitoring and Management System (CMM) • Enterprise Resource Management System (HR and Finance) 	<ul style="list-style-type: none"> • NMMS: Site Acceptance Testing underway; training completed; target go-live Q2-17. • CRR: Project in Execution; target go-live Q1-18. • CMM: Project Phase I in Execution; target go-live Q2-18. • Enterprise Resource Management: <ul style="list-style-type: none"> – HR functions completed Q3-16. – Finance and Procurement functions completed Q4-16.
Optimize ERCOT release management and change management procedures and processes	Evaluation complete. Project initiated Q4-16; currently in Planning Phase.
Improve internal access management	Vendor selection complete. Project initiated Q1-17.