



PUBLIC

Item 8.5: Real-Time Co-optimization Update

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Board of Directors Meeting

September 22-23, 2025

- **Purpose**
Provide updates on the market trials and implementation of Real-Time Co-optimization plus Batteries (RTC+B) Program for December 5, 2025.
- **For Information Only**
No action is currently requested; for discussion only

Key Takeaways

- May/June/July/August trials completed successfully
- Status of system-wide Production testing Sep/Oct
- Alignment for go-live December 5, 2025

Agenda

	Update for RTC+B Program includes
1	RTC+B Task Force and Market Trials summary since June Board
2	Current Market Trials activities
3	Next Steps

RTC+B is most significant market design change since 2010 (zonal to nodal) and requires extended market trials ensure collective success and reliability for Real-Time Market and dispatch.



RTC+B Task Force Update

Policy issues are essentially complete and remaining focus is Readiness for Go-Live

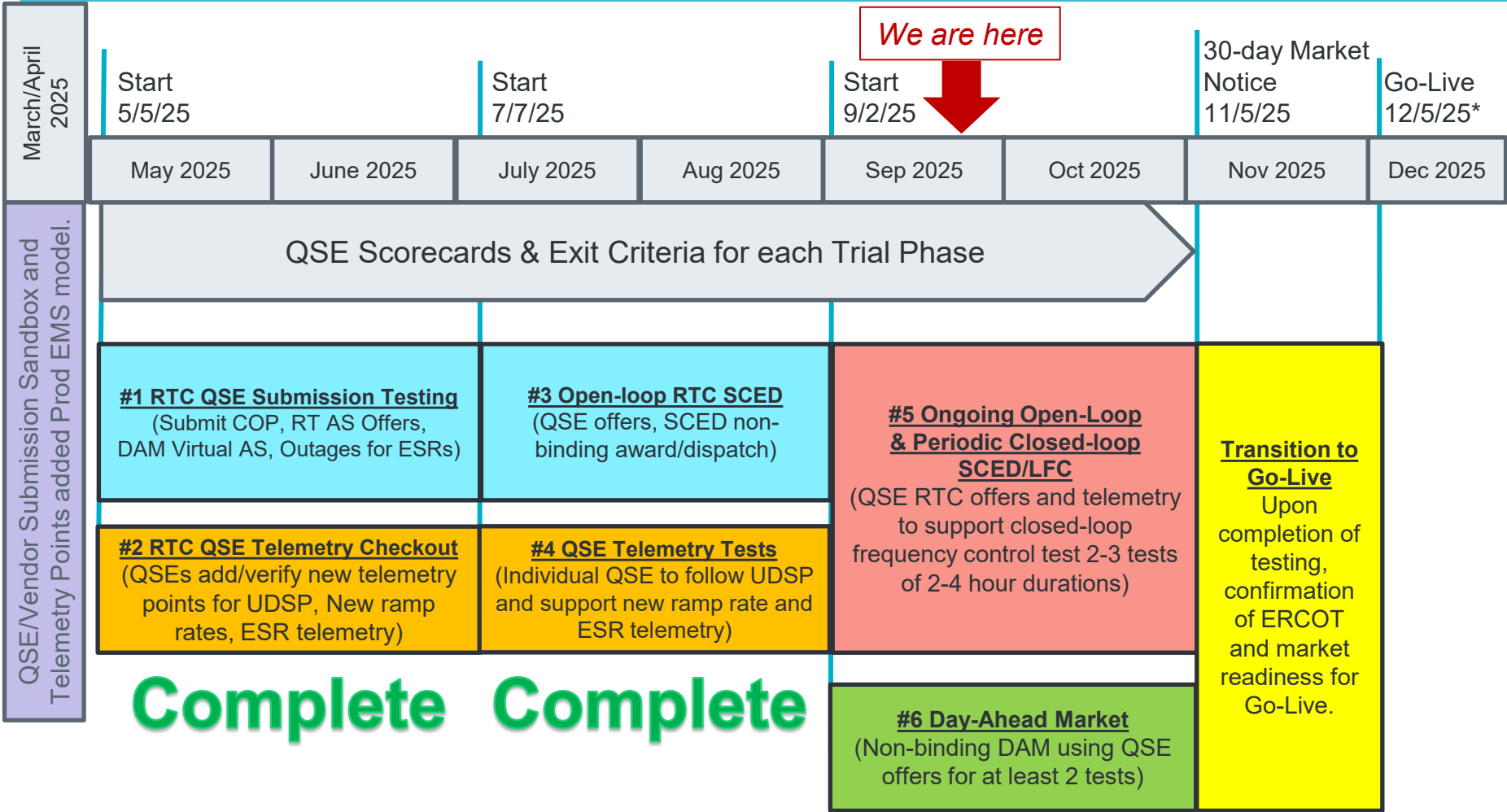


Issue to resolve	Protocol needed?	Approval level	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25
Parameters for Ancillary Service proxy offers NPRR1269	Yes	PUCT	BOARD	PUC					
Scaling Factor Values for RegUp/RegDown - NPRR1269	Yes	PUCT	BOARD	PUC					
ASDCs for use in Reliability Unit Commitment (RUC) studies- NPRR1269	Yes	PUCT	BOARD	PUC					
RTC SOC/AS duration parameter discussion- NPRR1282/NOGRR277	Yes	PUCT			BOARD	PUC			
Clean-up Revision Requests to address as-builts and clarifications, as needed- NPRR1290/NOGRR278	Yes	PUCT						Board	PUC
RTC Simulator Analysis for periodic analysis comparing RTC and the current ORDC design – KP 1.1(8) - Historical Operating Days identified by RTCBTF - Additional review of transmission constraint max. shadow price values (Sec 22/per NPRR1211) - Review of AS Demand Curve in context of current policy- NPRR1268 - Consider AS Indifference	N/A	N/A							
Market Readiness									
- Release Market Trials Sequence and Potential Dates (May 2024)									
- RTC+B Technical Workshops and release interface specifications (May-June 2024)									
- Explanation of ICCP Changes (Abhi Gari Masanna- May RTCBTF)									
- Explanation of Market Submission (Nathan Smith- August RTCBTF)									
- Release and review Market Trials Plan with RTCBTF (TAC endorsed October 2024)	No	TAC							
- Execute QSE Attestation (completed August 2024)									
- Announce Planned Go-Live Date (September 2024)									
- Outline of Readiness Training modules									
- Delivery of Training modules to RTCBTF Training page					Complete				
- Market Trials Handbooks for 5/5/25 Trials (Market Submission and Telemetry Check-out)									
- Market Trials Handbook for 7/7/25 Trials (OpenLoop SCED and QSE Telemetry Testing)			Complete						
- Market Trials Handbook for 9/2/25 Trials (Closed-Loop Test and Day-Ahead Market)					Complete				
- Annual Operations Training Seminar (6-weeks)			Complete						
- Go-Live Transition Plan						earlier			
- Any protocol and/or PUCT waivers needed for market trials and/or transition to Go-Live						earlier			
- RTCBTF issues- a. Operation Procedures (e.g., removing SASM and HASL/LASL), note to include any needed discussion on triggers for initiating off-cycle SCED execution, b. Business Practice Manuals (e.g., changes to COP and telemetry), c. Market trials/training/annual seminar engagement (release plans/dates for market trials), d. Any details MPs need for designing their control systems									



RTC+B Market Trial Progression

Market trials are a progression of activities to mitigate the risk for Go-Live on new systems and processes for both the Market Participants & ERCOT.



* Go-Live date reflects 12/5/2025 as first Operating Day where 12/4/2025 is planned software migration.



Successful Progress to date tracked in Public Scorecards

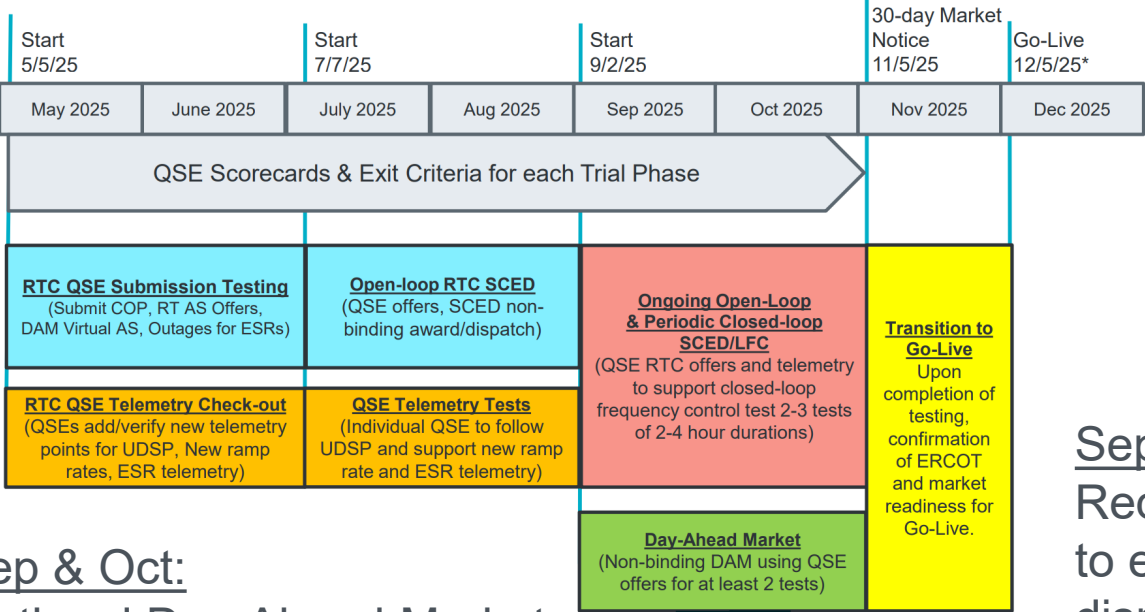
Public RTC+B scorecards have served as effective feedback tools for:

- Market Participants and their management
- Supporting Vendors
- Task Force, TAC, and Board
- ERCOT RTC+B Program risk assessment

Collectively the Market Participants have remained on-schedule for each round of market trials to meet the system-wide exit criteria.

Market Trials HB#1 Submissions Scorecard: QSE with active Resources	Scorecard Flag	ESR	GEN	LOAD	COP	TPO	OS	GEN	LOAD	COP	TPO	OS
AE TELVIEW ESS LLC	G	G	G	G	G	G	G	G	G	G	G	G
AES INTEGRATED ENERGY LLC	G	G	G	G	G	G	G	G	G	G	G	G
AMA QSE LLC	G	G	G	G	G	G	G	G	G	G	G	G
AMERICAN ELECTRIC POWER SERVICE CORP	G	G	G	G	G	G	G	G	G	G	G	G
AVANGRID RENEWABLES LLC	G	G	G	G	G	G	G	G	G	G	G	G
BHER POWER RESOURCES INC	G	G	G	G	G	G	G	G	G	G	G	G
BOSTON ENERGY TRADING AND MARKETING	G	G	G	G	G	G	G	G	G	G	G	G
BP ENERGY RETAIL COMPANY LLC	G	G	G	G	G	G	G	G	G	G	G	G
BTU	G	G	G	G	G	G	G	G	G	G	G	G
BULL CREEK WIND LLC	G	G	G	G	G	G	G	G	G	G	G	G
CALPINE POWER MANAGEMENT LLC	G	G	G	G	G	G	G	G	G	G	G	G
CITY OF AUSTIN DBA AUSTIN ENERGY	G	G	G	G	G	G	G	G	G	G	G	G
CITY OF GARLAND	G	G	G	G	G	G	G	G	G	G	G	G
CONSTELLATION ENERGY GENERATION LLC	G	G	G	G	G	G	G	G	G	G	G	G
CPS ENERGY	G	G	G	G	G	G	G	G	G	G	G	G
CWP ENERGY INC	G	G	G	G	G	G	G	G	G	G	G	G
DELIHAI SOLAR ENERGY II LLC	G	G	G	G	G	G	G	G	G	G	G	G
DELIHAI SOLAR ENERGY LLC	G	G	G	G	G	G	G	G	G	G	G	G
DENTON MUNICIPAL ELECTRIC	G	G	G	G	G	G	G	G	G	G	G	G
DERIVA ENERGY SERVICES LLC	G	G	G	G	G	G	G	G	G	G	G	G
DIRECT ENERGY LP	G	G	G	G	G	G	G	G	G	G	G	G
EDF NORTH AMERICA	G	G	G	G	G	G	G	G	G	G	G	G
ENEL TRADING NORTH AMERICA LLC	G	G	G	G	G	G	G	G	G	G	G	G
ENEL X NORTH AMERICA INC	G	G	G	G	G	G	G	G	G	G	G	G
ENERWISE GLOBAL TECHNOLOGIES LLC	G	G	G	G	G	G	G	G	G	G	G	G
ENGIE ENERGY MARKETING NA INC	G	G	G	G	G	G	G	G	G	G	G	G
ESV ENERGY MANAGEMENT LLC (QSE)	G	G	G	G	G	G	G	G	G	G	G	G
ETC ENDURE ENERGY LLC	G	G	G	G	G	G	G	G	G	G	G	G
FORMOSA UTILITY VENTURE LTD	G	G	G	G	G	G	G	G	G	G	G	G
GALT POWER INC	G	G	G	G	G	G	G	G	G	G	G	G
GERDAU AMERISTEEL ENERGY INC	G	G	G	G	G	G	G	G	G	G	G	G
GEUS	G	G	G	G	G	G	G	G	G	G	G	G
GEXA ENERGY LP	G	G	G	G	G	G	G	G	G	G	G	G
GOLDEN SPREAD ELECTRIC COOPERATIVE INC	G	G	G	G	G	G	G	G	G	G	G	G
GOLDTHWAITE WIND ENERGY LLC	G	G	G	G	G	G	G	G	G	G	G	G
GRIDBEYOND LLC	G	G	G	G	G	G	G	G	G	G	G	G
GRIDMATIC EQUISSETUM LLC (SQ4)	G	G	G	G	G	G	G	G	G	G	G	G
GUIDEPOST ENERGY LLC	G	G	G	G	G	G	G	G	G	G	G	G
GUNSIGHT MOUNTAIN WIND ENERGY LLC	G	G	G	G	G	G	G	G	G	G	G	G
HABITAT ENERGY INC	G	G	G	G	G	G	G	G	G	G	G	G
HE11 INC	G	G	G	G	G	G	G	G	G	G	G	G
HE13 INC	G	G	G	G	G	G	G	G	G	G	G	G
HE14 INC	G	G	G	G	G	G	G	G	G	G	G	G
HEN POWER MARKETING LLC	G	G	G	G	G	G	G	G	G	G	G	G
IP LUMINA II LLC	G	G	G	G	G	G	G	G	G	G	G	G
IP LUMINA LLC	G	G	G	G	G	G	G	G	G	G	G	G
IP LUMINA LLC (QSE)	G	G	G	G	G	G	G	G	G	G	G	G
HE13 INC (QSE)	G	G	G	G	G	G	G	G	G	G	G	G
HEN POWER MARKETING LLC (QSE)	G	G	G	G	G	G	G	G	G	G	G	G
IP LUMINA II LLC (QSE)	G	G	G	G	G	G	G	G	G	G	G	G
IP LUMINA LLC (QSE)	G	G	G	G	G	G	G	G	G	G	G	G

Final round of Market Trials in Flight



Sep & Oct: Optional Day-Ahead Market

- Voluntary Day-Ahead Market for all QSEs will be conducted at least 2 times.
- QSE can test their market submissions for Day-Ahead AS Self-Arrangement, AS Only Offers, Trades and normal submissions.
- DAM participation is strongly encouraged but not required in Readiness metrics since RTC procures AS in Real-Time.
- Participation includes much broader QSE population (marketers and load-only QSEs).

Sep & Oct: Required **live-production test** to ensure effective frequency dispatch and control.

- ERCOT and QSEs will conduct **live-production tests** of RTC-SCED and Load Frequency Control (LFC) prior to go-live.
- RTC-SCED and frequency control dispatch during the tests will be binding to manage the reliable operations of the grid for 2-4 hours.
- ERCOT will coordinate with QSEs on how to submit RTC offers and telemetry for Energy and AS for the two systems (current and RTC system).
- ERCOT will provide a summary of the test and use analysis and engineering judgement to assess if the test was successful in controlling frequency.



Outcome of first Production Closed-Loop LFC Test

TO BE UPDATED
AFTER SEP 11 TEST



Next Steps: Final Push to the Finish

Progress to date since re-starting the program in July 2023

- 27 RTCBTF meetings to collaborate and implement 25+ Revision Requests
- On-time deliveries of ERCOT and Vendor code- with four tests of “bid-to-bill” Operating Days since Apr-2025
- Currently at 5 months of interactive Market Trials to test and stabilize systems

Remaining push to Go-Live in 73 days

- Six weeks of Market Trials (additional October LFC Test and Day-Ahead Market runs)
- 30-Day Market Notice on November 5 to confirm protocols and system transition
 - If needed, ERCOT will file Good Cause Exception with PUCT for cutover protocol support
- Go-Live Transition begins Monday after Thanksgiving for December 1-5, 2025

December Board Meeting is 3 days after Go-Live for an almost real-time update.

