



PUBLIC

Item 10: Real-Time Co-optimization Update

Matt Mereness
Senior Director, Market Operations and
Implementation

Board of Directors Meeting

December 8-9, 2025

*Revised 12/07/25 (Slides 6-9)

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

Key Takeaways

- October/November trials/readiness activities completed successfully, including Oct 30 production test
- Status of go-live for December 5, 2025
- Stabilization of RTC+B (near-term and long-term)

Agenda

	Update for RTC+B Program includes
1	RTC+B Task Force and Market Trials summary since Sept Board
2	Go-Live Cutover Update
3	Stabilization and 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

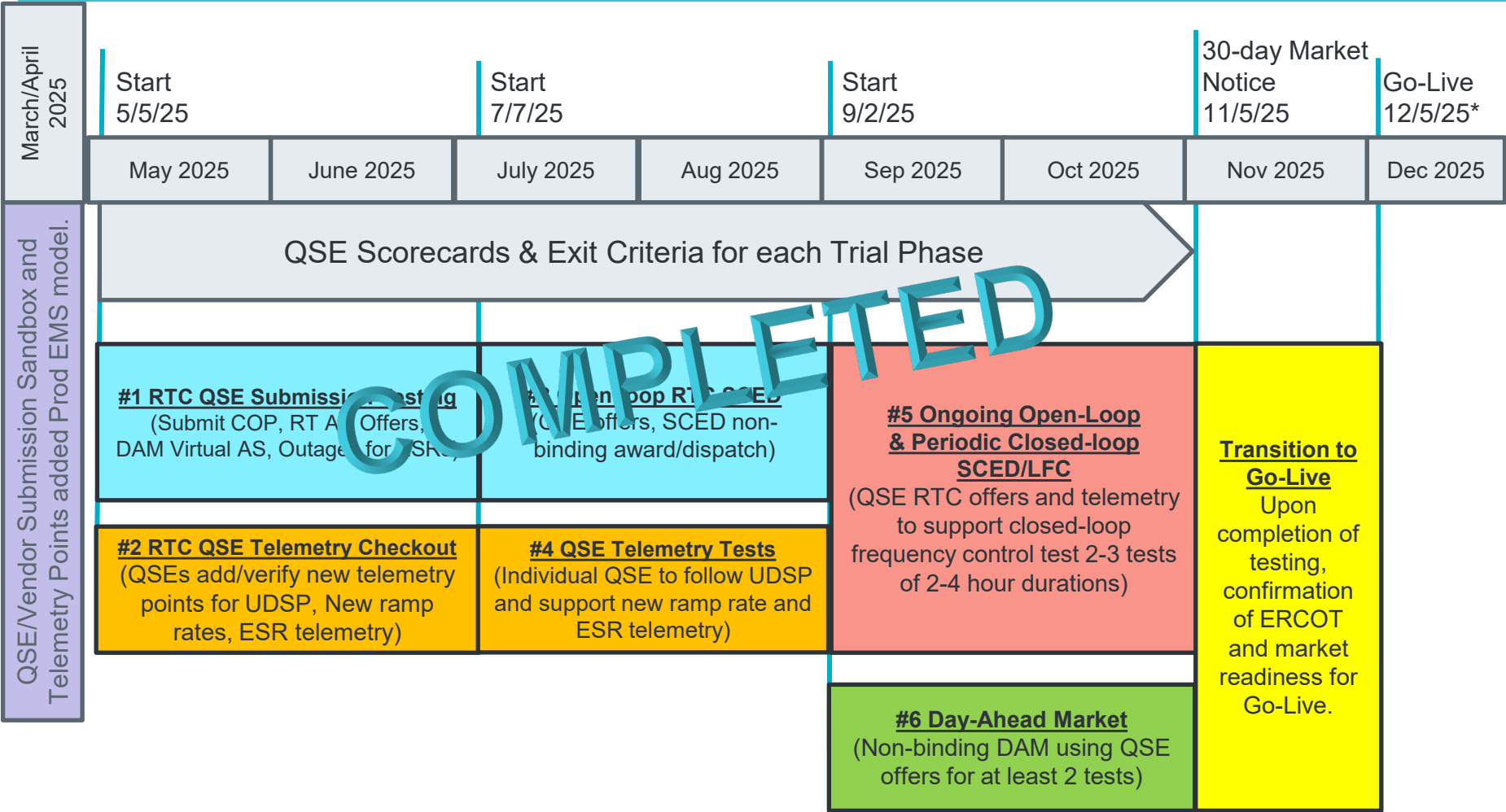
Policy issues and Readiness activities completed for Go-Live on time

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	N/A	N/A							
- 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									
Market Readiness									
- Release Market Trials Sequence and Potential Date (review 2024)									
- RTC+B Technical Workshops and release interface specifications (June 2024)									
- Explanation of ICCP Changes (Abhi G. 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/Cutover Plan						earlier			Posted
- Any protocol and/or PUCT waivers needed for market trials and/or transition to Go-Live						earlier			None
- 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.



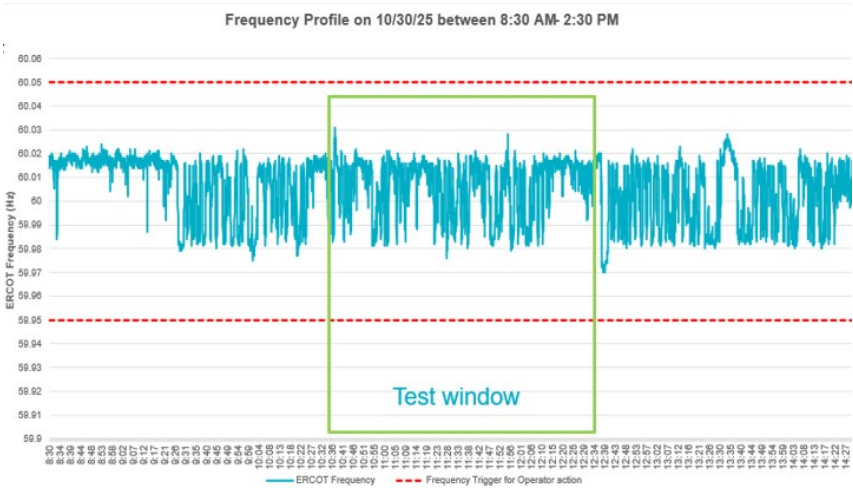
* Go-Live date reflects 12/5/2025 as first Operating Day where 12/4/2025 is planned software migration.



Key activities leading up to Go-Live

ERCOT successfully conducted the second/final RTC+B Production Test on Oct 30, 2025 from 10:35am-12:35pm to manage the Real-Time Market and Load Frequency Control systems:

- Frequency control was improved, QSE performance improved, and no new issues during test



November	9	10 TrialCall	11 DAM run for OD Nov 12	12 SCED OD NCLR s/provide	13 RTCBTF MEETING & Cutover Workshops	14	15
	16	17 TrialCall	18 DAM run for OD Nov 19	19 SCED OD NCLR s/provide	20	21 Go-Live Market Notice	22
	23	24 TrialCall	25	26	27 Thanksgiving Holiday	28 Thanksgiving Holiday	29
	SUN	MON	TUE	WED	TH	FR	SAT
December	Nov 30	1 TrialCall	2 TrialCall	3 TrialCall	4 TrialCall CUTOVER	5 TrialCall CUTOVER	6
	7	8 TrialCall Stabilization	9	10	11	12	13
	14	15 TrialCall Stabilization	16	17	18	19	20

Multiple November Cutover Workshops
Weekly Market Calls through Thanksgiving
Daily cutover calls during Go-Live week



Cutover Summary

9am-3am Webex for QSEs with resources:

- QSE Telemetry cutover took less than 5-minutes to get the 95 QSEs cutover
- QSE Market Submissions end point change took almost two hours to get the QSEs cutover
 - Mitigated ahead of time by requiring dual market submissions for QSEs

6:30am-10am Webex for QSEs without resources

- Support market submissions for QSEs prior to Day-Ahead Market
 - No significant issues reported by QSEs

Ran Day-Ahead Market and published on time, as well as Reliability Unit Commitment

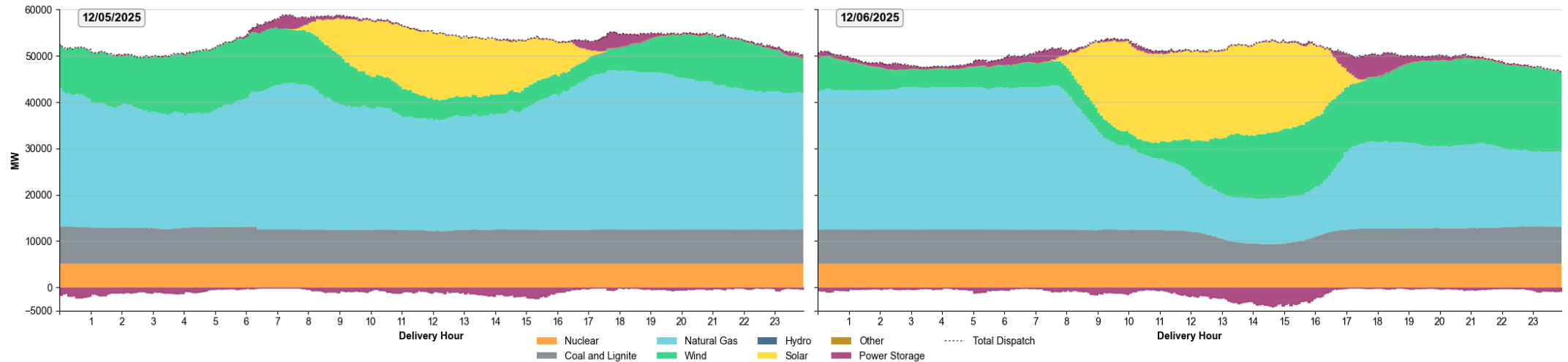
- Potential DAM price correction identified by Price Validation Tools (~\$1.00/MWh) and defect fixed next day

Some other issues identified after go-live and planning for additional releases ahead of Dec 19, 2025 for subset of key issues

Successfully coordinated cutover internally and externally.



System Operations Summary (first 48-hours)



SCED was able to award energy and procure Ancillary Services at or above plan level during all intervals over the first 48 hours post deployment. Minimum PRC Total was 7,272 MW on 12/6/25 around 7:40 am. Further, Load Frequency Control (LFC) was able to control Frequency within NERC requirements. Hourly Average CPS1 score during this periods was 184.

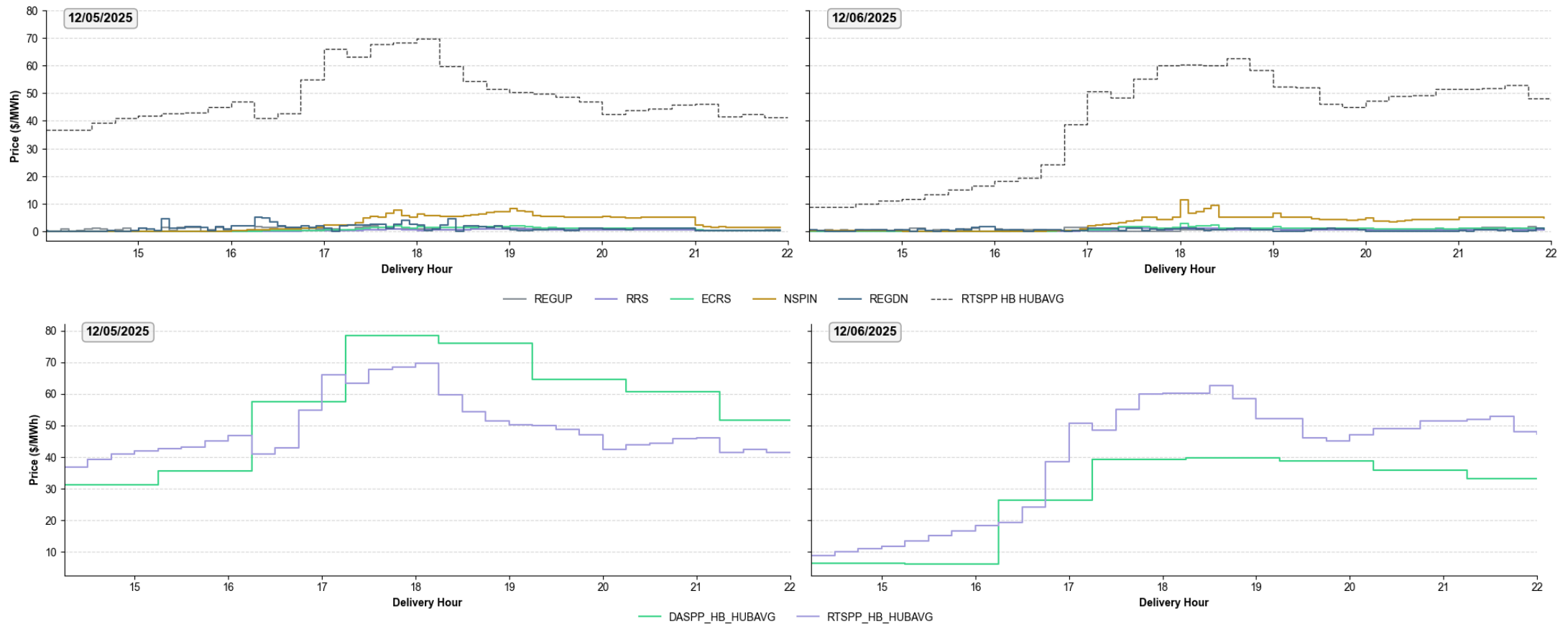
There were 2 unit trips during the last 48 hours, the grid was able to arrest frequency and restore under 15 minutes.

On 12/6/25 at 16:43, the available headroom not carrying reserves was insufficient to meet the 30 minute ahead forecasted Net Load. 1,415 MWs of offline Non-Spin was deployed. The deployment lasted for 1 hour and 31 minutes. In the 1600 hour wind and solar generations were lower than forecasted, resulting in an offline non-spin deployment.

RTC+B System has been able to maintain reliable grid operations by awarding energy and procuring AS.



Market Operations Summary (first 48-hours)



RTC+B is co-optimizing energy and all Ancillary Services every 5 minutes

Day-Ahead Market prices were higher than Real-Time Market OD 12/5, and lower on OD 12/6

ERCOT continuing to closely evaluate market outcomes to ensure accuracy and quality in solutions.



Next Steps: Stabilization & Transition to normal processes

From Program perspective

- ERCOT filing Protocol violations and corresponding mitigation plans with PUCT (currently 5 identified)
- Next 2 weeks are critical for emergency fixes to stabilize systems
- First few months of 2026 will include multiple releases for remaining non-critical defects

From Stakeholder perspective

- ERCOT to sponsor any urgent Revision Requests for gaps identified (e.g., [NPRR1311](#))
- Coordinate and prioritize the key RTCBTF issues to transition to TAC (analysis of Ancillary Service Deployment Factors, Ancillary Service Demand Curves, and other important issues to monitor)
- Working with TAC leadership on the timing of retiring RTCBTF

ERCOT appreciates the unified support of the PUCT, Board, TAC, and stakeholder community on this large program implementation

