



Item 9.3.1: Real-Time Co-optimization Update

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Reliability and Markets Committee Meeting

ERCOT Public

February 3, 2025

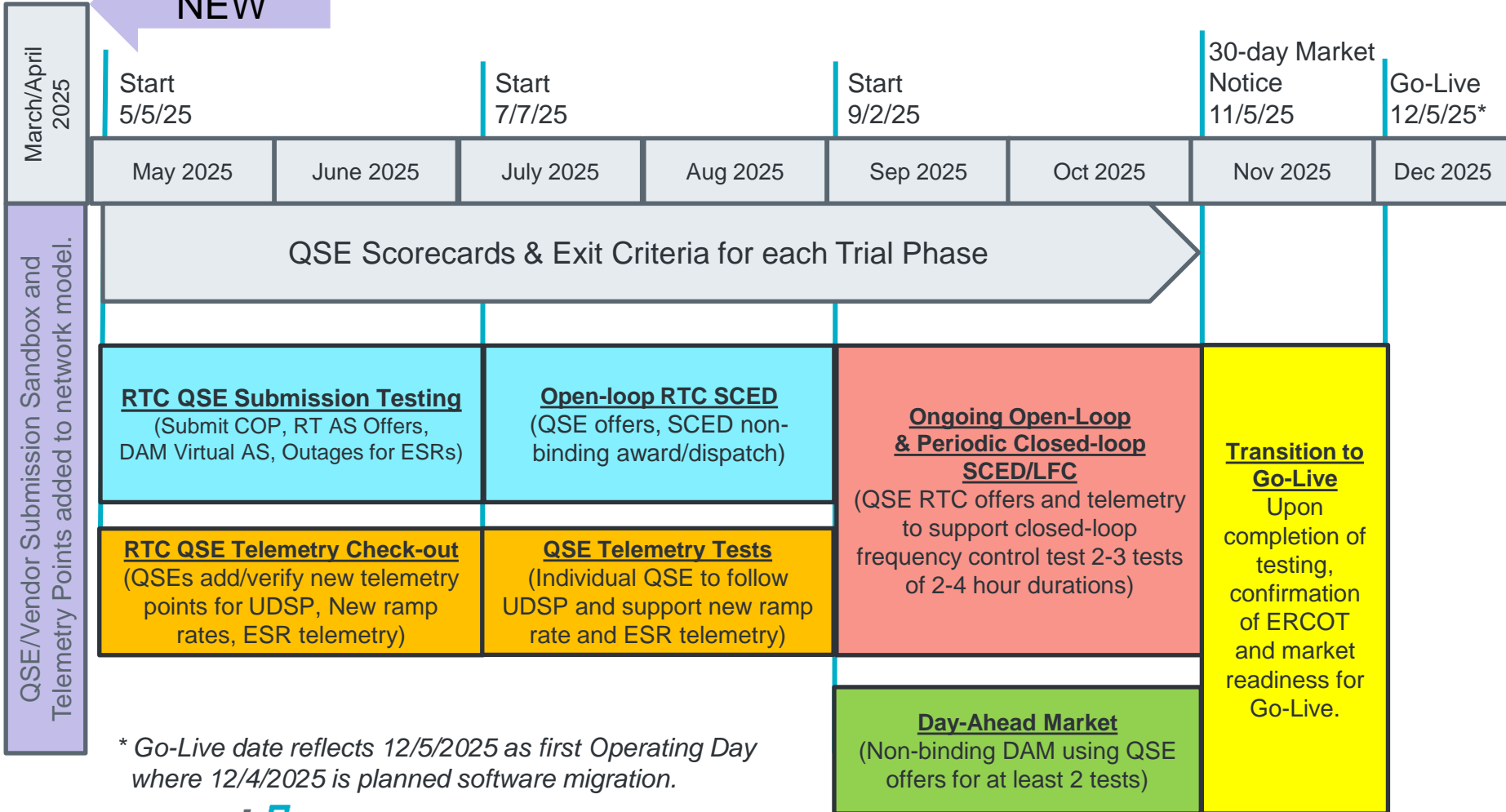
Real-Time Co-optimization (RTC) Update

- **Key updates since last Board meeting:**
 - Internal daily activities for RTC+B
 - ERCOT has received key vendor code and is running core applications in the development environment
 - External monthly RTCBTF meetings continue:
 - Focus on completing Revision Requests for policy issues
 - Additional Training/Readiness video posted on RTCBTF website
 - ERCOT and IMM publishing RTC Simulator studies
 - IMM proposal to change to Ancillary Service Demand Curves (ASDC)

- **Key Takeaway(s)**
 - RTC+B Program continues to move forward on schedule.
 - ERCOT working closely with Market Participants to minimize go-live risk:
 - Currently addressing important policy issues that will come to Board as Revision Requests in April 2025.
 - Continuing development of market readiness materials (videos and handbooks)

Sequence and Dates for Market Trials to Go-Live

NEW



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



RTCBTF Issues List

- First red box will be a single ERCOT NPRR for 4 policy issues
- Second red box is a single IMM NPRR for ASDC changes
- Third red box is a clean-up NPRR and includes explicit AS Qualification issue



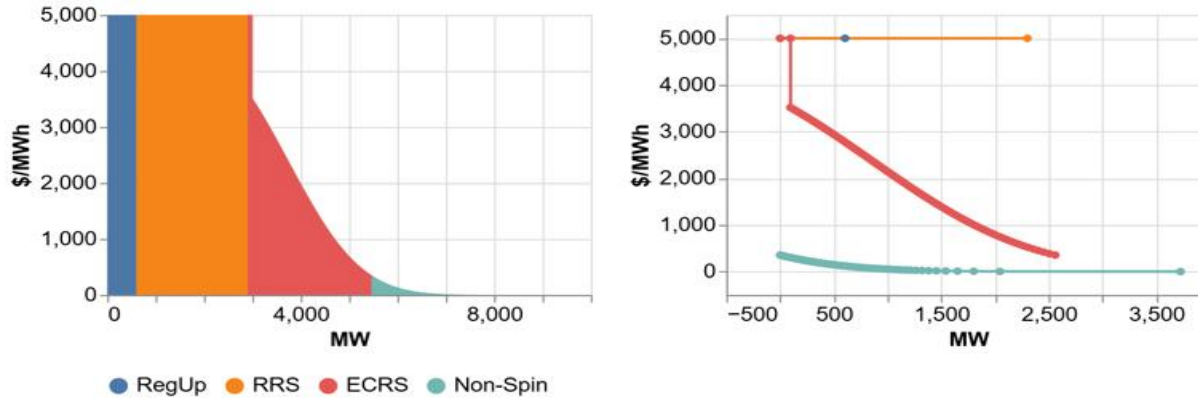
Issue to resolve	Protocol needed?	Approval	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25
Parameters for Ancillary Service proxy offers (values for the parameters)	Yes	PUCT										
Scaling Factor Values for RegUp/RegDown (ie, ramp sharing as values, dynamic or static?)	Yes	PUCT										
ASDCs for use in Reliability Unit Commitment (RUC) studies (values for parameters)	Yes	PUCT										
RTC SOC duration parameter discussion	Yes	PUCT										
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)	TBD	TBD										
- Review of AS Demand Curve in context of current policy - Consider AS Indifference												
Clean-up Revision Requests to address as-builts and clarifications, as needed	Yes	PUCT										
Market Readiness												
- Release Market Trials Sequence and Potential Dates (May 2024)			Complete									
- RTC+B Technical Workshops and release interface specifications (May-June 2024)			Complete									
- Explanation of ICCP Changes (Abhi Gari Masanna- May RTCBTF)			Complete									
- Explanation of Market Submission (Nathan Smith- August RTCBTF)			Complete									
- Release and review Market Trials Plan with RTCBTF (TAC endorsed October 2024)	No	TAC		Complete								
- Execute QSE Attestation (completed August 2024)				Complete								
- Announce Planned Go-Live Date (September 2024)				Complete								
- Outline of Readiness Training modules				Complete								
- Delivery of Training modules to RTCBTF Training page												
- 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)												
- Market Trials Handbook for 9/2/25 Trials (Closed-Loop Test and Day-Ahead Market)												
- Annual Operations Training Seminar (6-weeks)												
- Go-Live Transition Plan												
- Any protocol and/or PUCT waivers needed for market trials and/or transition to Go-Live												
- 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												

Recent Progress to share

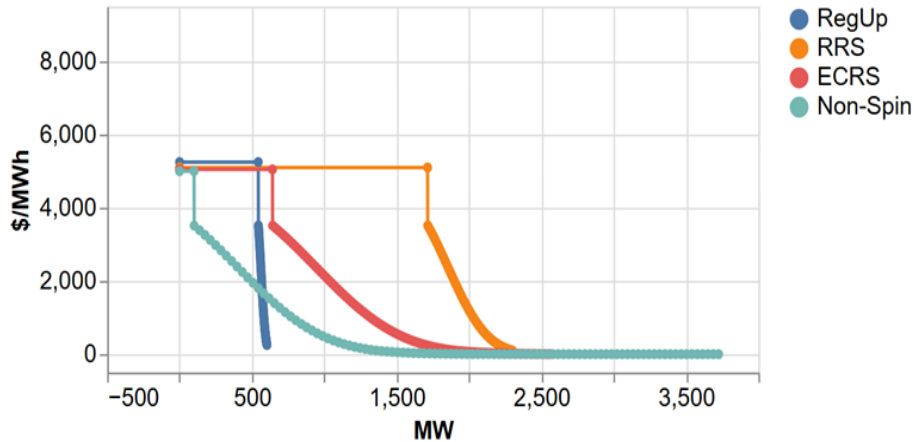
- ERCOT added [RTC+B Education video](#) to RTC+B Readiness library posted here: [Market Readiness/Training Topics](#)
- RTCBTF reviewed first 2 Market Trials Handbooks and there were no issues identified (market submission and telemetry testing activities).
- Discussions of single NPRR for RTC+B Parameters (ERCOT staff)
 - Ramp Rate sharing (NPRR language)
 - AS Proxy Offer Floor (NPRR language to consider leveraging modified ASDC)
 - ASDC for RUC discussion (NPRR sections impacted and presentation)
 - AS Duration Requirements (still under study and will be de-coupled into another NPRR)
- ERCOT adding revisions to specify qualification requirements for A/S providers
- Refreshed RTC Efficiency Cost Savings (ERCOT)
 - [ERCOT study](#) of annual RTC cost savings in 2023-2024 (now \$2.5-6.4B)
- Ancillary Service Demand Curves (ASDC) policy discussion
 - [IMM study](#) of 3 ASDC concepts and drafted NPRR language (next slide)

IMM AS Demand Curves

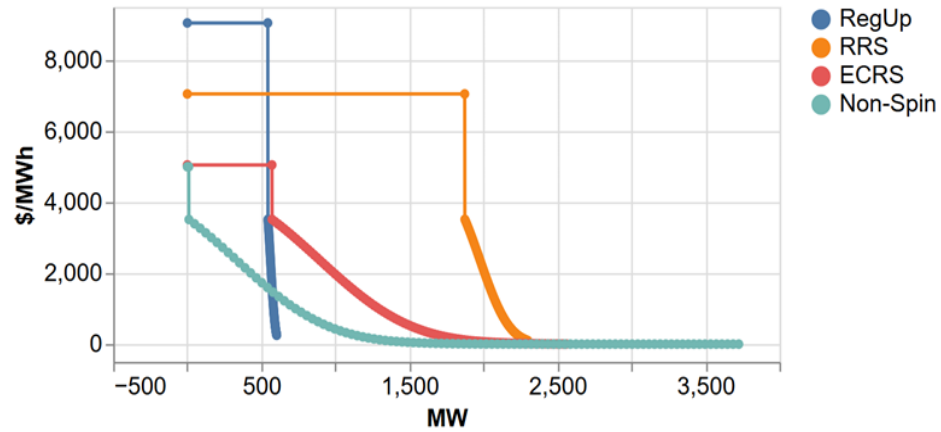
- Protocol approved distribution under Operating Reserve Demand Curve (ORDC):



- IMM original blended proposal:



- IMM Adjusted Blended Based on MP feedback*:



* Note- ASDC above \$5k will be capped and published at \$5k



Summary and Timeline of NPRRs that will be in flight

Expecting Board consideration of policy issues at the April Board meeting

- NPRR for Parameter/Policy Changes (ERCOT sponsor)
 - AS Proxy Offer Floors
 - ASDCs for Reliability Unit Commitment
 - Ramp Rate Sharing
 - AS Duration Requirements (ie, State of Charge- separate NPRR)
- NPRR for AS Qualification details (ERCOT sponsor)
- NPRR for ASDC Modifications (IMM sponsor)

Timeline and vetting of RTC+B NPRRs

File NPRRs (No impacts) Jan 28	PRS Urgency & Table NPRRs Feb 12	PRS Approval March 12 TAC approval March 26	Board Approval April 8	PUCT Approval May 15	
Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	June 2025
RTCBTF: 1/14, 1/23, 2/7, 2/19 (can add meetings) Stakeholder comments in Feb and March			ERCOT window for “re-factoring” development	ERCOT market trials deployed and begin on May 5, 2025	

Next steps

- ERCOT continuing focus on details of delivering the RTC+B Program both internally and in close coordination with the market on Readiness needs
- ERCOT supporting RTC Simulations for historical Operating Days and studies for policy decisions
- ERCOT and IMM poised to submit NPRRs to finalize policy and parameter values for the policy items discussed on previous slide (exception is State-of Charge duration parameters)

- **Key Takeaway(s)**

- RTC+B Program on-schedule for target 12/5/25 Go-Live
- ERCOT working closely with Market Participants and policy makers to ensure alignment and no roadblocks in delivery of the program