



Item 9.3.1: Real-Time Co-optimization (RTC) Update

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Reliability and Markets Committee Meeting

ERCOT Public

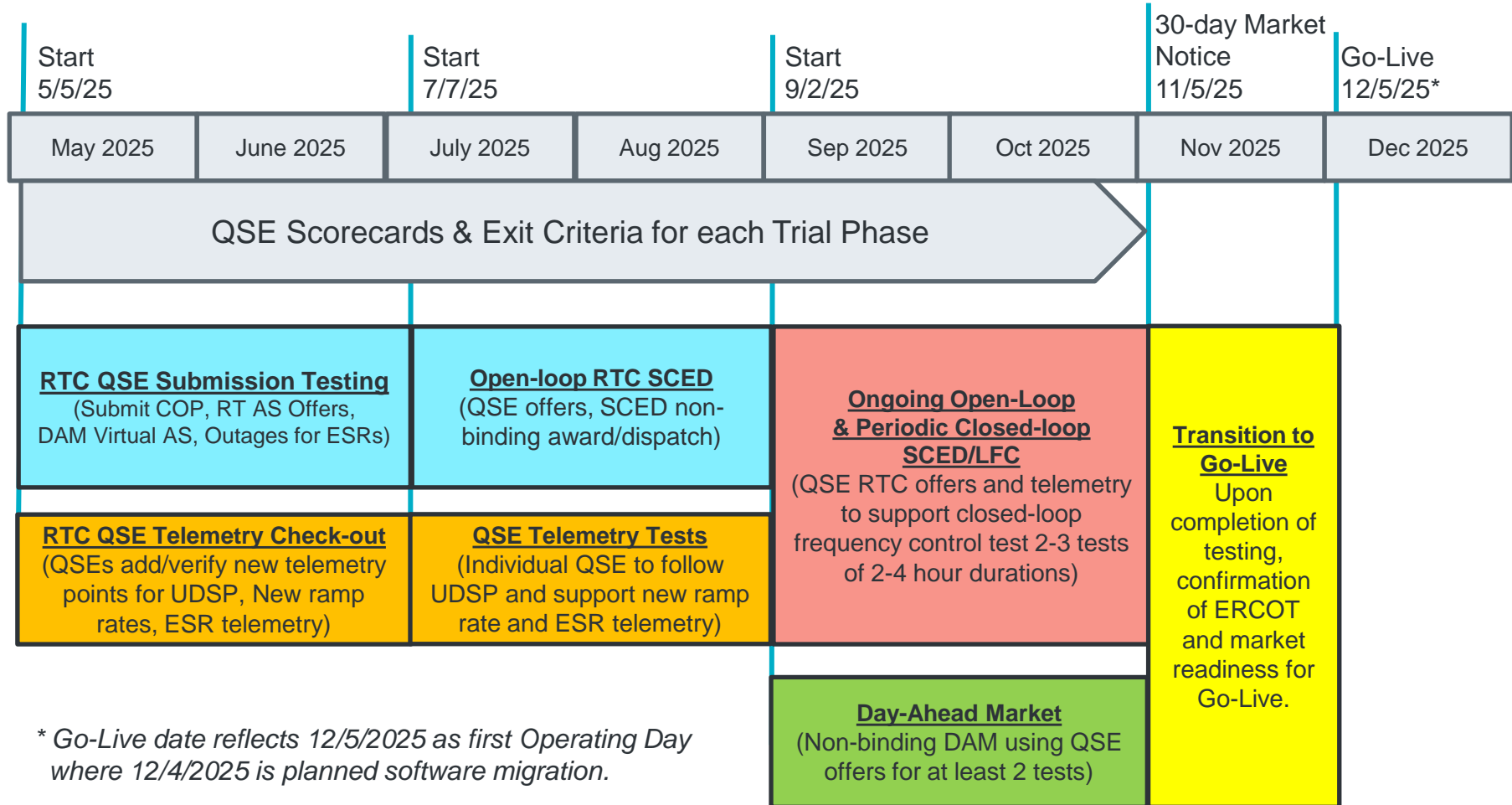
December 2, 2024

Real-Time Co-optimization (RTC) Update

- **Key updates since last Board meeting:**
 - Internal daily activities for RTC+B
 - ERCOT has moved entire RTC program into execution phase
 - Key vendor delivered “beta version” of RTC-SCED
 - External monthly RTCBTF meetings continue:
 - Market Trials Plan approved by TAC
 - Initial Training/Readiness videos posted on RTCBTF website
 - ERCOT publishing RTC Simulator results for RTCBTF (5 historical days)
 - IMM proposed changes to Ancillary Service Demand Curves

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

Sequence and Dates for Market Trials to Go-Live



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

RTCBTF Issues List

- Progress on parameter-values and RTC Simulator Analysis
- More details for Market Readiness progression

Issue to resolve	Protocol needed?	Approval	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-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									
NPRR for RTCB Parameter Changes (from TAC-approved parameters to Protocol values)	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) - Review of AS Demand Curve in context of current policy - Consider AS Indifference	TBD	TBD									
Clean-up Revision Requests to address as-builts and clarifications, as needed	Potentially	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)		TAC									
- Market Trials Handbook for 7/7/25 Trials (OpenLoop SCED and QSE Telemetry Testing)		TAC									
- Market Trials Handbook for 9/2/25 Trials (Closed-Loop Test and Day-Ahead Market)		TAC									
- Annual Operations Training Seminar (6-weeks)											
- Go-Live Transition Plan		TAC									
- 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											

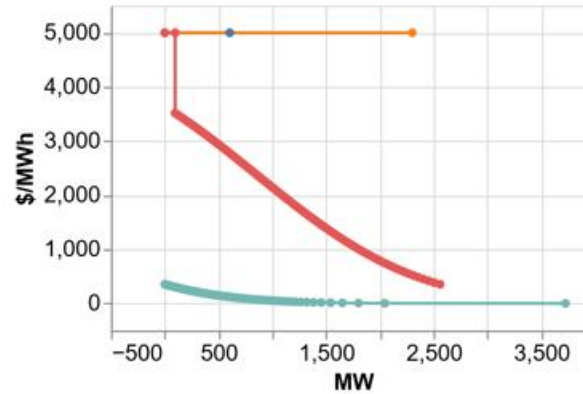
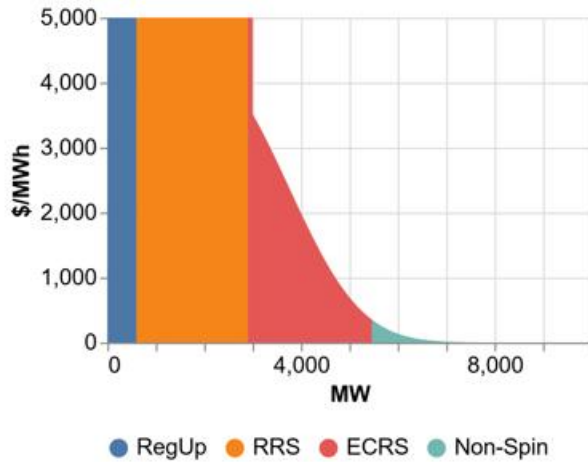


Recent Progress to share

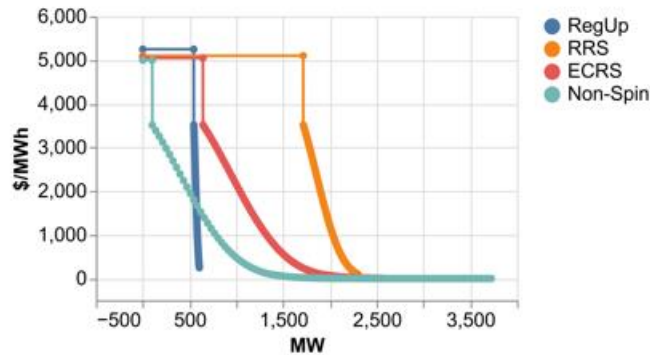
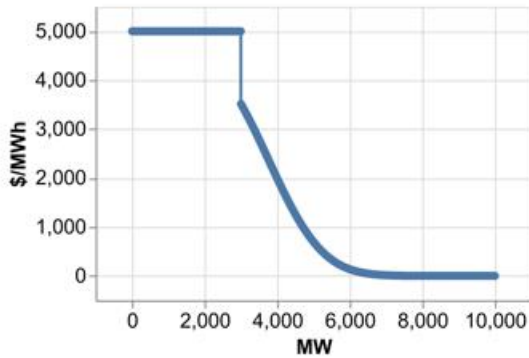
- TAC endorsed the [RTC+B Market Trials Plan](#) at its October 30th meeting.
- ERCOT created webpage for RTC+B [Market Readiness/Training Topics](#)
 - Defined components/areas of training- Basics, Markets, Operations, Settlements, etc.
- ERCOT shared analysis of 5 historical days using the RTC Simulator (ERCOT in-house tool)
 - [Historical Analysis for 9/6/23 \(scarcity\), 7/10/23 \(congestion\), 10/20/23 \(reliability deployment adds\)](#)
 - [Historical Analysis for 6/19/23 \(volatility\) and 11/16/23 \(mild day\)](#)
- ERCOT proposed new alternative to Parameters of the AS Proxy Offer Curves
 - Rather than \$0 or \$2,000, use Ancillary Service Demand Curve values
 - More discussion at December RTCBTF
- Update on Ancillary Service Demand Curves (ASDC) policy discussion
 - Reminder ERCOT drafted and [posted ASDC whitepaper to TAC](#) to clarify and explain the evolution of the currently approved ASDCs and summarized market discussion and concerns.
 - [IMM proposed ramp-in values for curves at the Nov 13 RTCBTF meeting](#)

IMM AS Demand Curves

- Protocol approved:



- IMM 11/13/2024 blended proposal:



Parameters/Policy Needing NPRR

- Current scope of NPRR for Parameter/Policy Changes
 - AS Proxy Offer Floors
 - Ramp Rate Sharing
 - ASDCs for Reliability Unit Commitment
 - Ancillary Services Duration Requirements (ie, State of Charge)
- Timeline of NPRR for the RTC+B Parameter Changes
 - ERCOT will file NPRR in December 2024 or January 2025
 - In parallel, RTCBTF can be vetting the values and filling in the blanks/values
 - MP can document positions in NPRR formal comments
 - Target completing RTCBTF analysis by March to then move NPRR through stakeholder process.
 - Best before trials start in early May 2025):
 - RTCBTF discussions in meetings (Dec2024-Feb2024)
 - Potentially add a RTCBTF meeting in early March
 - PRS Approval March 12, 2025 (assumes Urgent status)
 - TAC approval March 26, 2025
 - Board approval April 8, 2025
 - PUCT consideration May 15, 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, including some supporting studies for policy decisions (eg Proxy Floors)
- ERCOT will develop and submit NPRR to finalize policy and parameter values for the 4 items discussed on previous slide (does not include potential ASDC changes)

- **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