



Item 6.1: Real-Time Co-optimization (RTC) Task Force (RTCTF) Update

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Urgent Board of Directors Meeting

ERCOT Public
August 11, 2020

RTCTF Update

- RTCTF Stakeholder Update
 - RTC Key Principles (KPs)
 - RTC Revision Requests (RTCRRs)
- RTCRR Review Schedule & Progress to Date
- Overall RTC Delivery Schedule
- Next Steps
- Appendix
 - Review Processes

RTC Key Principles

- RTC Key Principles were approved (44-page document) at the February 11, 2020 Board meeting:
 - RTC KPs 1-7 are to be used to develop Nodal Protocol Revision Requests (NPRRs) and other applicable Other Binding Documents (OBDs) for the implementation of RTC.
 - Out of Scope design principles and policy issues that have been determined to be beyond the scope of the RTC project have been documented within KP 8, and shall not be considered in the development of NPRRs and/or OBDs for the purpose of implementing RTC.

RTC Revision Requests

- On March 25, 2020, ERCOT filed the RTC Revision Requests (RTCRRs) and a single Impact Analysis (IA) for RTC implementation, in accordance with Section 21 of Protocols.

RTCRRs released March 25, 2020	Pages 549 total
NPRR1007- RTC NP3- Management Activities for the ERCOT System	62
NPRR1008- RTC NP4- Day-Ahead Operations	65
NPRR1009- RTC NP5- Transmission Security Analysis and Reliability Unit Commitment	39
NPRR1010- RTC NP6- Adjustment Period and Real-Time Operations	248
NPRR1011- RTC NP8- Performance Monitoring	49
NPRR1012- RTC NP9- Settlement and Billing	15
NPRR1013- RTC NP 1, 2, 16, 25- Overview, Definitions/Acronyms, Registration and Qualification of MPs, and Market Suspension and Restart	24
NOGRR211- RTC Nodal Operating Guides 2 and 9- System Operations and Control Requirements and Monitoring Programs	21
OBDRR020- RTC - Methodology for Setting Maximum Shadow Prices for Network and Power Balance Constraints	26



RTCRR Review Schedule & Progress to Date

- TAC recommended RTCTF serve as the clearinghouse to address RTCRR language changes and comments. ERCOT will submit all RTCRRs and related comments from RTCTF to PRS for consideration at its November 2020 meeting, with the goal to take them to TAC that month, and the Board December 8, 2020.
 - Mar. 11 – RTCTF (Plan and logistics for RR review)
 - Apr. 8 – RTCTF (Review detailed plan, and begin review process)
 - Apr. 30 – RTCTF
 - May 11 – *Special RTCTF for Potential Design Flaw- AS Price Cap discussion*
 - May 20 – RTCTF
 - Jun. 10 – RTCTF
 - Jun. 22 – *Special RTCTF for Ancillary Service Deployments*
 - Jun. 29 – RTCTF
 - Jul. 15 – *Special RTCTF for AS Deployment Expectations & Durations*
 - Jul. 22 – RTCTF
 - Aug. 12 – RTCTF
 - Sep. 9 – RTCTF
 - Sep. 28 – RTCTF
 - Oct. 21 – RTCTF
 - **Nov. 5 – ROS , Nov. 11 – PRS**
 - Nov. 12 – *RTCTF (if needed)*
 - **Nov. 17 – CWG, Nov. 18 – TAC, Dec. 8 – ERCOT Board**



RTCRR Review Schedule & Progress to Date

- Detailed RTCTF schedule for reviewing the RTCRR language is posted on the [RTCTF](#) page, and excerpt below.
- Of the 193 total Protocol/OBD sections under review, RTCTF has reached consensus on 141 sections to date (73% complete).

	A	B	I	J	K	L	P	Q	R	S	T
1	Document Typ	Document Sec	Mapped KPs	Note	Topic for Scheduling	RTCTF Review Complet	6/10/20	6/29/20	7/22/20	8/12/20	9/9/20
110	NPRR1010	6.5.1.1	KP 1.2(1,2,3), KP 1.4(1)		RTM General Update	6/29/2020	c	c			
111	NPRR1010	6.5.1.2	KP 1.3(12), KP 6		RTM General Update	6/29/2020	c	c			
112	NPRR1010	6.5.7	KP 1.4(1)		RTM General Update	6/29/2020	c	c			
113	NPRR1010	6.5.9.2	KP 1.1(6), KP 1.4(1,2), KP 1.5(13)		RTM General Update	6/29/2020	c	c			
114	NPRR1010	6.5.9.3.3	KP 4, KP 5(3)		RTM General Update	6/29/2020	c	c			
115	NPRR1010	6.5.9.3.4	KP 5(3)		RTM General Update	6/29/2020	c	c			
116	NPRR1010	6.5.9.4	KP 1.5(9)		RTM General Update	6/29/2020	c	c			
117	NPRR1011	8.1.1.1	KP 1.4(1)		RTM General Update	6/29/2020	c	c	X		
118	NPRR1011	8.1.1.2	KP 1.4(1)		RTM General Update	6/29/2020	c	c			
119	NPRR1007	3.5.2.1	KP 1.1(1)		RTM Settlement			c	X	X	
120	NPRR1007	3.5.2.2	KP 1.1(1)		RTM Settlement			c	X	X	
121	NPRR1007	3.5.2.3	KP 1.1(1)		RTM Settlement			c	X	X	
122	NPRR1007	3.5.2.4	KP 1.1(1)		RTM Settlement			c	X	X	
123	NPRR1007	3.5.2.5	KP 1.1(1)		RTM Settlement			c	X	X	
124	NPRR1007	3.5.2.6	KP 1.1(1)		RTM Settlement			c	X	X	
125	NPRR1007	3.5.2.7	KP 1.1(1)		RTM Settlement			c	X	X	
126	NPRR1010	6.6.1	KP 1.1(1)		RTM Settlement			c	X	X	
127	NPRR1010	6.6.1.1	KP 1.1(1)		RTM Settlement			c	X	X	
128	NPRR1010	6.6.1.2	KP 1.1(1)		RTM Settlement			c	X	X	
129	NPRR1010	6.6.1.6	KP 1.1(1,2,3,6)		RTM Settlement			c	X	X	
130	NPRR1010	6.6.1.7	KP 1.1(1,2,3,6)		RTM Settlement			c	X	X	
131	NPRR1010	6.6.3.1	KP 1.1(1)		RTM Settlement			c	X	X	
132	NPRR1010	6.6.3.7	KP 1.1(1), KP 1.4(1)		RTM Settlement			c	X	X	

Overall RTC Delivery Schedule

- Draft Implementation Timeline



- As RTCRRs are completed, the RTC Business Requirements will begin (before year end).
- There are still several items/policies, beyond RTCRRs, that must be addressed prior to the implementation of RTC—e.g.:
 - Proxy Offer Curves, RUC AS Demand Curves, Transitional language for RTC go-live (if any), ORDC/RTC results comparison; and
 - Target dates for MP detailed requirements (e.g., SCADA changes, XML changes, Market Trials plans).

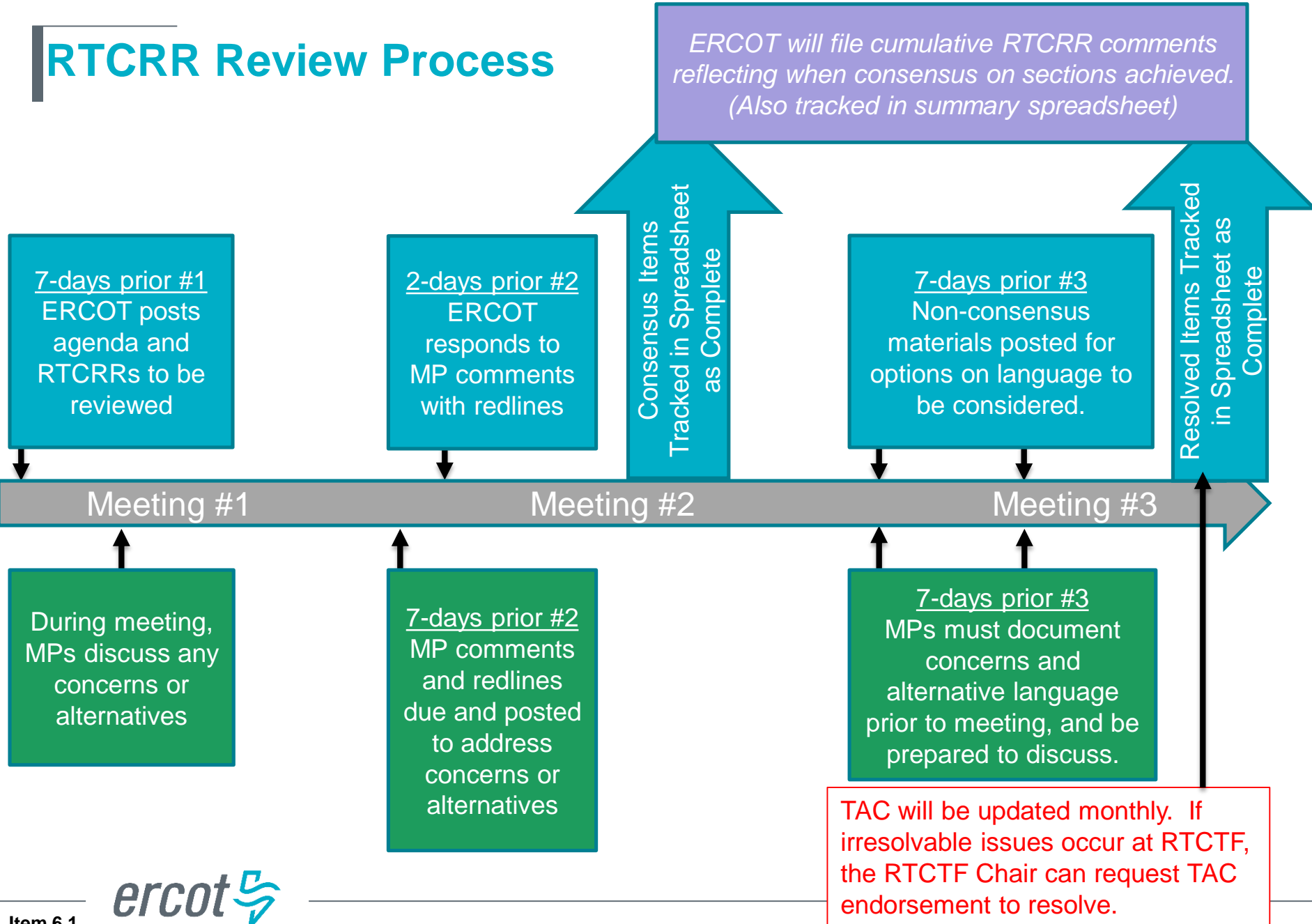
Next Steps

- RTCTF is currently on schedule and continues to review, discuss, and obtain consensus on RTCRRs.
- ERCOT, on behalf of RTCTF, filed a consolidated set of comments on consensus items on July 8, 2020 and will continue to file comments as additional consensus is reached.
- The October/November stakeholder meetings will be critical to completing the approvals in time for Board consideration of the RTCRRs at the December 8, 2020 Board meeting and may continue to exercise the use of special meetings.
- Key Artifacts posted on RTCTF Homepage and Calendar:
 - [“RTC Revision Request Mapping, Schedule, and Tracking”](#)- Breakdown of review schedule by theme, KP, Protocol section, and dates of review.
 - [“RTC Key Principle Quick Reference”](#)- Board approved KPs in condensed 19 page document.
- Special thanks for the market support and continuing to press forward.
- Any questions?

APPENDIX

- Review Processes

RTCRR Review Process



TAC will be updated monthly. If irresolvable issues occur at RTCTF, the RTCTF Chair can request TAC endorsement to resolve.



RTC Review Process (continued)

- At the May 2020 TAC meeting there was no opposition to the following process (if needed) to potentially modify RTCRRs beyond the scope of the RTC KPs if a market design flaw or error was discovered following Board approval of the RTC KPs:
 - A. The modification complies with PUC directives;*
 - B. The modification will not incur additional RTC project costs or schedule delays; and*
 - C. The modification will not delay timely implementation of RTCRRs (i.e., will not prevent the Board from considering the NPRR at the December 8, 2020 Board meeting).*
- Next slide describes the review and escalation process from RTCTF to TAC

RTC Review Process (continued)

- **Proposed process for modifying RTCRRs beyond scope of Board-approved KPs:**
 - A Market Participant has the right to express concerns with a RTCRR.
 - A Market Participant may file comments to modify a RTCRR beyond the scope of the Board-approved KPs.
 - In comments to modify an RTCRR, the submitting party shall explain how the revisions meet the criteria proposed on the previous slide.
 - RTCTF will provide:
 - The technical forum (e.g., an extra off-cycle meeting) for discussion of the proposed RTCRR changes with the understanding that RTCTF consensus is not practical and will not occur.
 - At TAC:
 - RTCTF Chair will advise TAC leadership of any RTCRR Comments that propose to modify the scope of the KPs beyond that which was approved by the Board, and
 - Request time for the MP to present to TAC for consideration, as well as another MP to present the counterpoints (if any) as to why the existing KP should continue to be maintained and aligned with RTCRRs.
 - TAC may take a straw poll to endorse the proposed NPRR comments; the vote would not be binding and therefore non-appealable, but would classify the modified/added concept as valid.
 - If TAC endorses the alternative, the RTCTF Chair would update the Board of the straw poll decision.
 - The RTCRR comments would subsequently be considered at PRS, TAC, and ultimately the ERCOT Board, consistent Protocol Section 21.