



Item 8.3.1: Real-Time Co-optimization Update

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Reliability and Markets Committee Meeting

ERCOT Public

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Real-Time Co-optimization (RTC) Update

- **Key updates since last Board meeting:**
 - Internal daily activities for RTC+B
 - Initiated weekly RTC project meetings with key vendor.
 - Transitioning from Business Requirements to market interface changes.
 - External monthly RTCBTF meetings
 - Supporting discussion of 20 implementation-related issues.
 - Highlights of discussion topics in following slides.

• **Key Takeaways**

- RTC+B Program is maintaining momentum and developing software.
- At RTCBTF, ERCOT is partnering with Market Participants (MPs) every month in 2024 to address various implementation details.

Current RTCBTF Issues List

- Link to issues on [RTCBTF home page](#)

Id	Source	Issue to resolve	Type	Protocol needed?	Approval	Review Schedule												
						Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25
1	RTCTF issue	Parameters for Ancillary Service proxy offers (values for the parameters)	Policy	No	TAC													
2	RTCTF issue	ASDCs for use in Reliability Unit Commitment (RUC) studies (values for parameters)	Policy	No	TAC													
3	RTCTF issue	Framework for periodic analysis comparing RTC and the current ORDC design – KP 1.1(8)	Analysis	No	No													
4	RTCTF issue	Verifiable Cost Manual (Change for on-line hydro Resources per Key Principle 1.3(3))	Other	VCMRR NPRR	TAC													
5	RTCTF issue	Additional review of transmission constraint max. shadow price values (Sec 22 protocols per NPRR1211)	Policy	Yes	Normal process													
6	RTCTF issue	Operation Procedures (e.g., removing SASM and HASL/LASL), note to include any needed discussion on triggers for initiating off-cycle SCED execution	Readiness	No	Existing processes													
7	RTCTF issue	Business Practice Manuals (e.g., changes to COP and telemetry)	Readiness	No	Existing processes													
8	RTCTF issue	Mapping of bill determinants to extracts and reporting for developing shadow settlement	Readiness	No	No													
9	RTCTF issue	Changes to ICCP handbook, and documentation for non-ICCP market submissions	Readiness	No	Existing processes													
10	RTCTF issue	Market trials/training/annual seminar engagement (release plans/dates for market trials)	Readiness	?	?													
11	RTCTF issue	Any details MPs need for designing their control systems	Readiness	No	No													
12	ERCOT 2023	Scaling Factor Values for RegU and RegD (ie, ramp sharing as values, dynamic or static?)	Other	No	TAC													
13	ERCOT 2023	How DRRS would work in an RTC paradigm	Other	Yes	TAC													
14	ERCOT 2023	Inclusion of firm load shed in the pricing run - (RTC changes to align with NPRR1081)	Policy	Yes	TAC													
15	ERCOT 2023	Various protocol references need to be updated	Other	Yes	TAC													
16	ERCOT 2023	RTC SOC duration parameter discussion	Policy	No	TAC													
17	ERCOT 2023	RUC Capacity Short Calculations with SOC	Policy	NPRR	TAC													
18	RTCBTF 1/12/24	Review of the AS Demand Curves in the context of current policy.	Other	No	No													
19	RTCBTF 1/12/24	Emergency Price Program alignment to RTC (imbedded within NPRR1216, monitor only for RTCBTF)	Policy	Yes	Normal process													
20	RTCBTF 4/10/24	*New* Review of the Energy and AS Offer Caps in the context of current policy.	Other	No	No													

Blue is to reflect new or updated dates of review
 Gray is to reflect existing review schedule

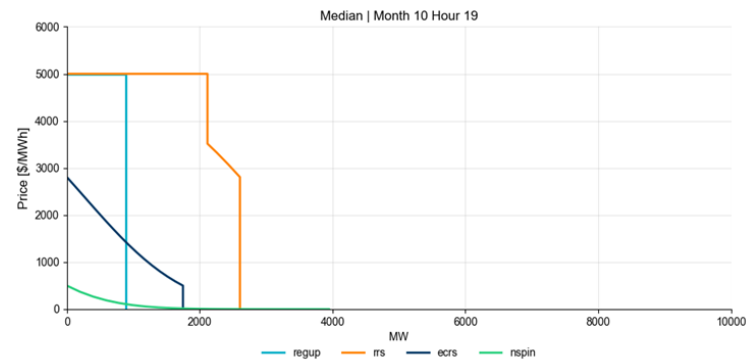
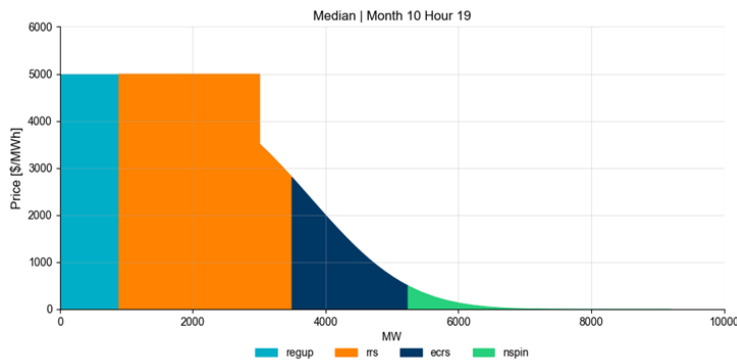
- Moving up discussion of interface changes and market trials
- Added discussion of Ancillary Service (AS) Demand Curves per MP requests

Status of in-flight discussions

- Issue 17 – Reliability Unit Commitment (RUC) Capacity Short
 - Third round of three discussions
 - Walked through MP examples
 - One suggestion to simplify and/or remove RUC capacity short. Policy to move to allocating all RUC make-whole to Load appears outside the scope of the task force.
 - ERCOT bringing draft protocol language to April meeting.
- Issue 4 - Change for on-line hydro Resources mitigation per Key Principle 1.3(3)
 - Second round of three discussions
 - Initial review of concept
 - Given that Hydro Resources operating in synchronous condenser mode are not dispatched by SCED, ERCOT proposes setting the Mitigated Offer Cap for all Hydro Resources to SWCAP.
 - Plan to bring draft NPRR and verifiable cost language changes to April meeting
- These two issues need to be resolved prior to go-live to close gaps in protocols.

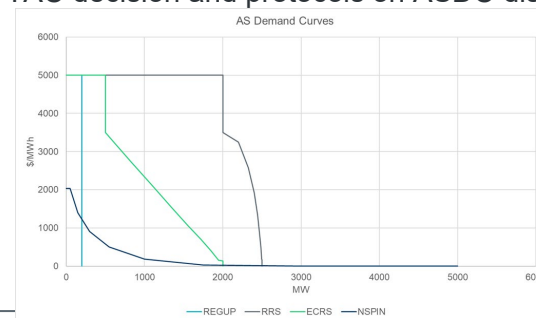
ASDC Concerns and Potential Next Steps

- Issue 18 - Review of the AS Demand Curves (ASDCs) in the context of current policy
 - From an implementation perspective, ERCOT has developed the business requirements necessary to implement the AS Demand Curves per protocols.
 - At request from MPs, ERCOT shared the current shape and distribution of AS Demand Curves as defined in protocols at the February RTCBTF



- Extensive MP discussion at March meeting regarding concerns over price formation with current protocol defined curves
 - Some MPs raised questions as to whether the currently defined ORDC is aligned with operations (shape of ORDC).
 - Some MPs raised questions of whether to revisit TAC decision and protocols on ASDC distribution under ORDC.

% of capacity in each block from each AS			
Blocks	RRS%	ECRS %	NSRS %
1	40	21.25	1
2	25	18.75	2
3	15	16.25	3
4	9	13.75	5
5	5	11.25	9
6	3	8.75	15
7	2	6.25	25
8	1	3.75	40



RTCBTF Next Steps

- Approach shared with TAC on Issue 18 AS Demand Curves
 - Facilitate discussion among MPs of next steps, but...
 - Recognize ERCOT will continue forward on current approved design for implementation
 - RTCBTF can be leveraged to discuss options, but market design changes will be done through normal policy and protocol change processes
 - For changing shape of ORDC
 - AS Demand Curves based on ORDC (current guidance from [2019 memo](#) to use ORDC for ASDC)
 - Re-shaping ORDC (or de-coupling ASDC from ORDC) would be PUCT policy change (would likely take at least 9 months)
 - Requires Protocol changes
 - System changes are not expected (parameterized values) and could be implemented within a month of approval
 - For changing distribution of ASDC under ORDC curve
 - Requires Protocol changes
 - Requires system changes to change distribution logic
 - Currently ERCOT would consider this a Baseline 2 change (after initial go-live)
- RTC+B Technical Workshops (April-June 2024)
 - Target audience, vendors and IT development/implementation staff
 - ICCP configuration approaches for parallel testing and transition
 - Technical review of initial versions of telemetry and market submission design specifications
- Questions?

