

Energy and Flexible Reserve

5-minute Dispatch, Pricing, & Flexible Reserve Log in Long term

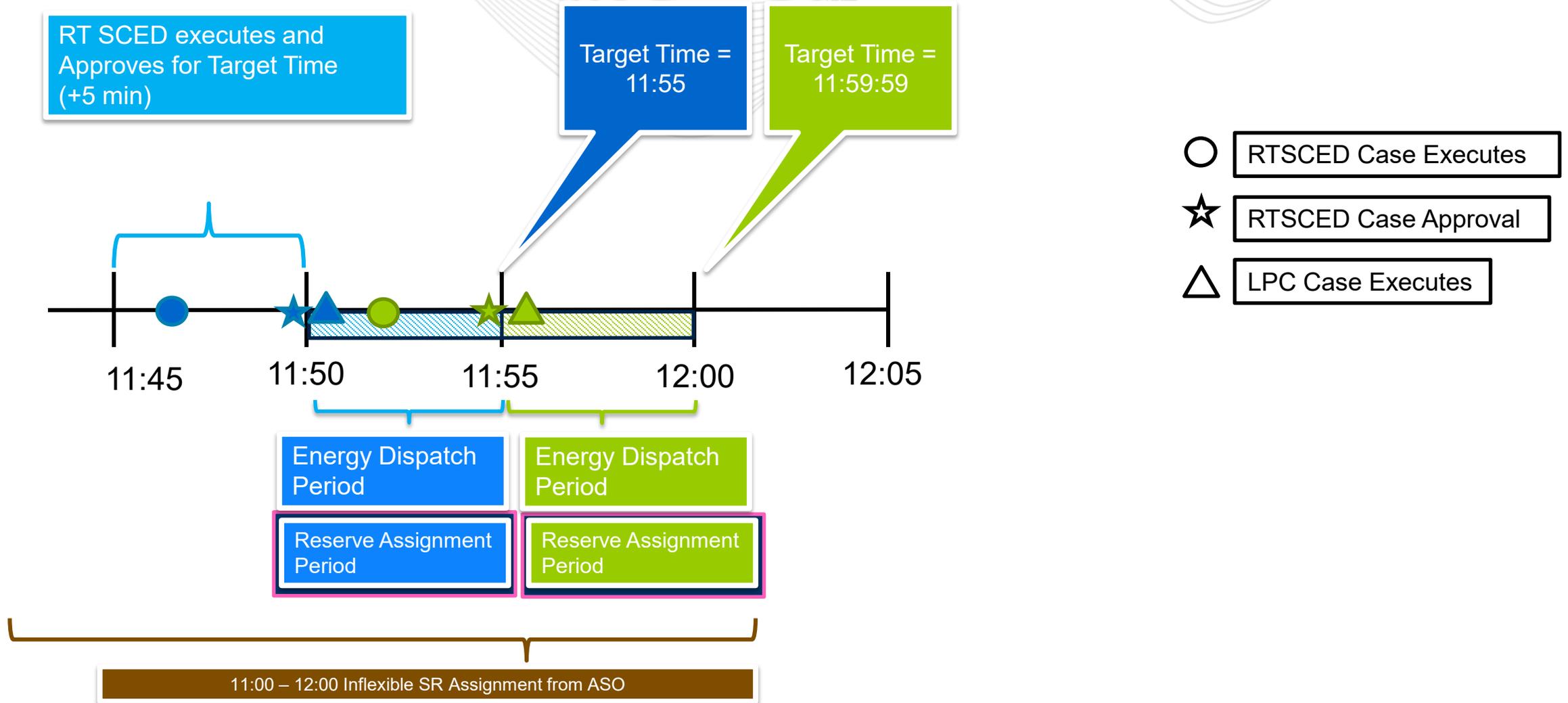
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5 Minute Dispatch and Pricing

MIC Special Session

02/17/2021





Proposed Timing Design Detail

Interval	11_11	11_12	12_01	12_02	12_03	12_04	12_05	12_06	12_07	12_08	12_09	12_10	12_11	12_12
RTSCED Execute	11:46:00	11:51:00	11:56:00	12:01:00	12:06:00	12:11:00	12:16:00	12:21:00	12:26:00	12:31:00	12:36:00	12:41:00	12:46:00	12:51:00
RTSCED Approve	11:49:50	11:54:50	11:59:50	12:04:50	12:09:50	12:14:50	12:19:50	12:24:50	12:29:50	12:34:50	12:39:50	12:44:50	12:49:50	12:54:50
RTSCED Target Time	11:55:00	11:59:59	12:05:00	12:10:00	12:15:00	12:20:00	12:25:00	12:30:00	12:35:00	12:40:00	12:45:00	12:50:00	12:55:00	12:59:59
LPC Pricing Execution	11:50:10	11:55:10	12:00:10	12:05:10	12:10:10	12:15:10	12:20:10	12:25:10	12:30:10	12:35:10	12:40:10	12:45:10	12:50:10	12:55:10
Flexible Tier2 Effective	11:50:00	11:55:00	12:00:00	12:05:00	12:10:00	12:15:00	12:20:00	12:25:00	12:30:00	12:35:00	12:40:00	12:45:00	12:50:00	12:55:00
Flexible Tier2 Termination	11:55:00	11:59:59	12:05:00	12:10:00	12:15:00	12:20:00	12:25:00	12:30:00	12:35:00	12:40:00	12:45:00	12:50:00	12:55:00	12:59:59

1. Energy dispatch is effective upon RTSCED case approval;
2. Energy target time will be shortened to 5 minutes;
3. Flexible Tier2 dispatch is proposed to be effective along with energy dispatch;
4. Flexible Tier2 log duration is proposed to last until the next approved RTSCED;
5. LPC will price both Energy and Reserve on the same dispatch instruction.

Comparison of Current vs. Proposed Flexible Reserve Timeline

#	Element	Today	Proposed	Comment
1	Effective Time	5 min before Energy Target Time	Align with Energy Effective (Approved) Time	Eliminates potential for next RTSCED moving unit against SR assignment
2	Termination Time	New RTSCED approved Time	Align with Energy Target Time based on latest approved RTSCED	Eliminates insufficient head room for the procured SR MW. Flexible SR to procure on 5 min ramp time, inline with proposed energy timeline. See Appendix for a sample scenario
3	Reserve Procurement Ramp Time	10 minutes	About 5 min, aligns with Energy dispatch	Consistent parameters between Energy and Reserve
4	Pricing	Inconsistent pricing point on the resource curve for Energy & Reserve	Consistent pricing point on the resource curve for Energy & Reserve	Energy and Reserve priced on the same dispatch instruction

- ❖ Resource Tier2 MW ranges between 0 and $\min\{\text{Tier2 Offer MW}, \text{Ramp Rate} \times 5 \text{ minutes}\}$;
- ❖ Reserve deployment compliance \geq Resource Tier2 MW output @ 10 minutes from start of the spin event

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**MIC Special Session, Five Minute
Dispatch and Pricing**



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Appendix

Flexible Tier2 Assignment and Logging Today

Flexible Tier2 Assignment in RTSCED

RTSCED_CASEID	LOCAL_TARGETTIME	UNITLONGNAME	TIER2MW	LOCAL_APPROVEDTIME
RTSCED_12_15	2/1/2021 12:15	TIER2_FLEX-1	14.5	2/1/2021 12:04
RTSCED_12_20	2/1/2021 12:20	TIER2_FLEX-1	12.3	2/1/2021 12:10
RTSCED_12_25	2/1/2021 12:25	TIER2_FLEX-1	5	2/1/2021 12:15
RTSCED_12_30	2/1/2021 12:30	TIER2_FLEX-1	1.7	2/1/2021 12:20
RTSCED_12_35	2/1/2021 12:35	TIER2_FLEX-1	0	2/1/2021 12:25

Flexible Tier2 Assignment Log

UNITLONGNAME	LOCAL_EFFECTIVETIME	LOCAL_TERMINATIONTIME	TIER2CLEAREDMW	LOCAL_CREATEDDATE
TIER2_FLEX-1	2/1/2021 12:10	2/1/2021 12:15	14.5	2/1/2021 12:04
TIER2_FLEX-1	2/1/2021 12:15	2/1/2021 12:20	12.3	2/1/2021 12:10
TIER2_FLEX-1	2/1/2021 12:20	2/1/2021 12:25	5	2/1/2021 12:15
TIER2_FLEX-1	2/1/2021 12:25	2/1/2021 12:30	1.7	2/1/2021 12:20
TIER2_FLEX-1	2/1/2021 12:30	2/1/2021 13:00	0	2/1/2021 12:25

- The flexible Tier2 log effective time is 5 min before RTSCED solution target time
- RTSCED solution approved time is when dispatch signal is sent to resource