

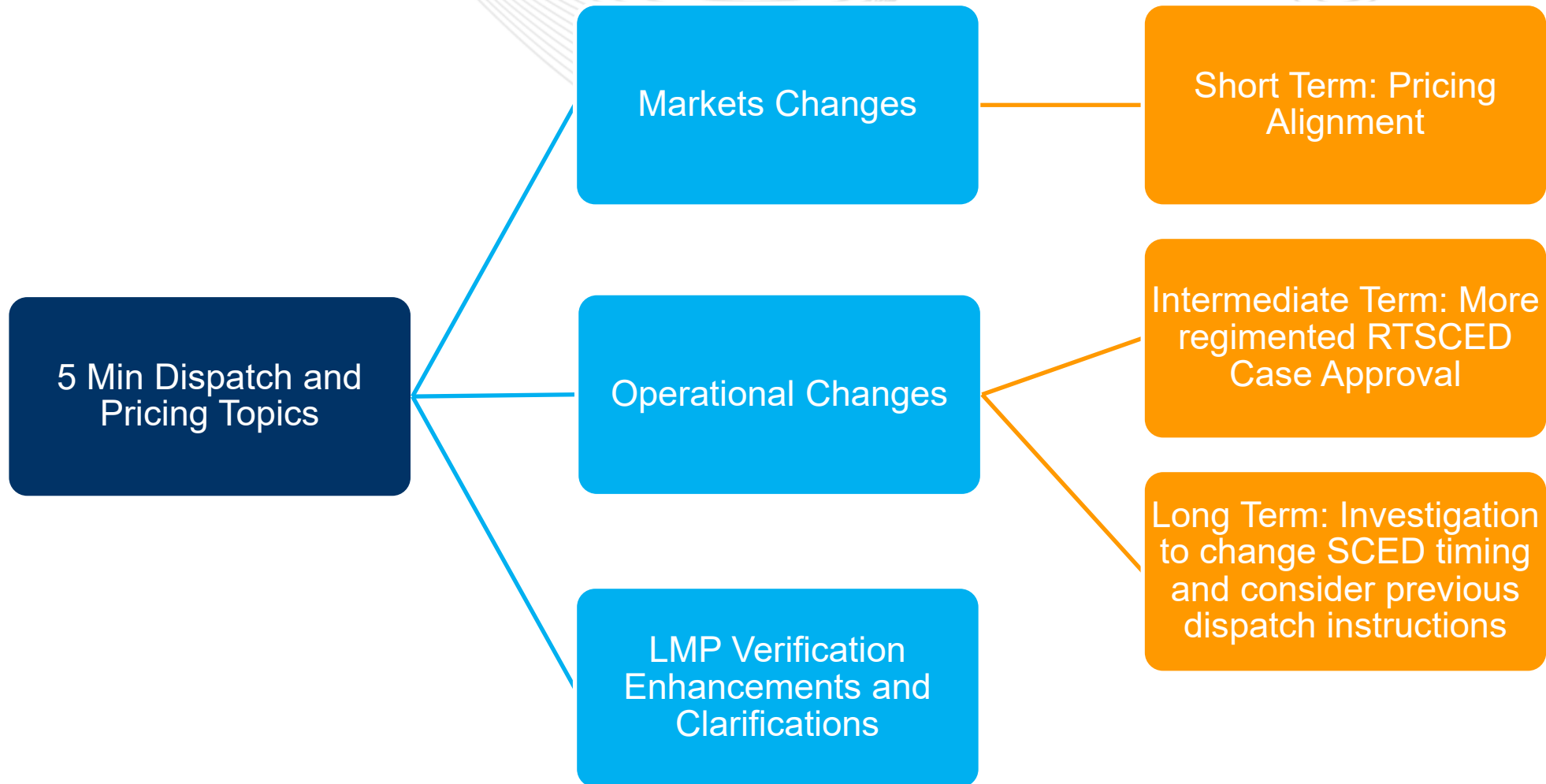


5 Minute Dispatch and Pricing Review Long Term SCED Changes

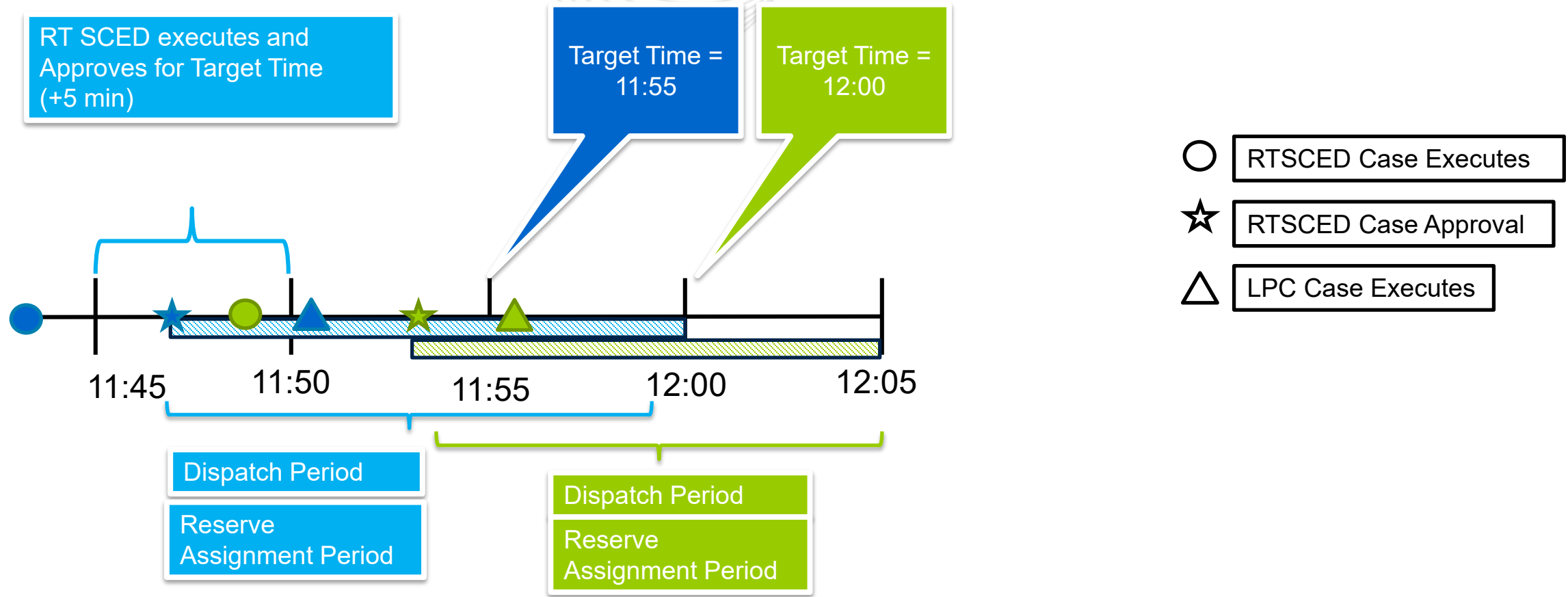
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Synchronous Reserve Deployment Task Force
Five Minute Dispatch and Pricing Review

April 8, 2021

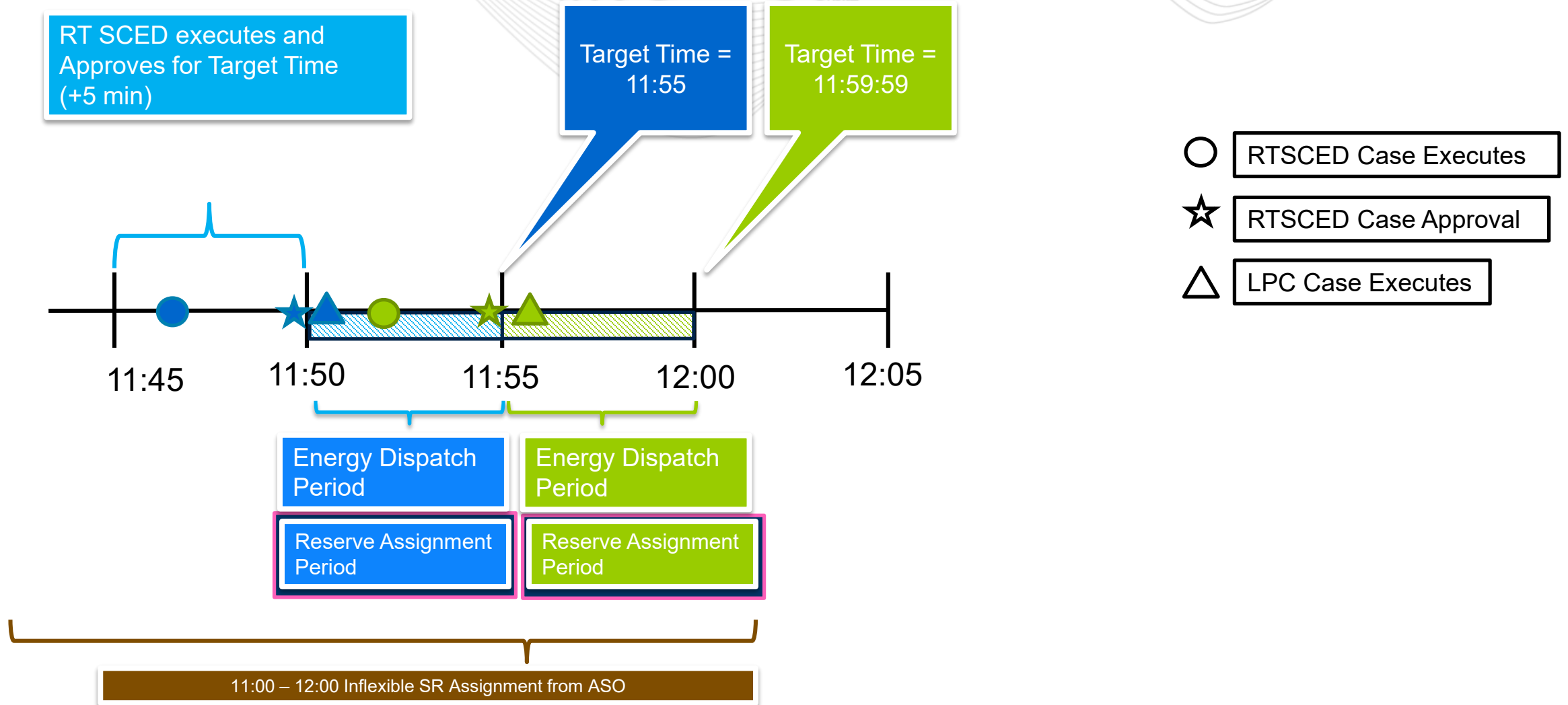


Inputs Used	Description	Frequency
Bid Data	Latest Participant Bid data (eco-limits, hour offer curves)	1 Minute
EMS Data	Latest State Estimator run, Constraint specific Distribution Factors and Loss Penalty Factor	2 Minutes
Load Forecast	RT SCED uses Neural Net Load Forecast (VSTLF). It is a rolling 6 hours into the future and is updated every 5 minutes	5 Minutes
Reg/Spin	Current Regulation/Spin assignments	Available Each case execution
Interchange	Energy Schedules	5 Minutes
Load Bias	Bias utilization is based on actual load, actual interchange, and the actual performance/availability of generation resources	Ad hoc
Operator specific Inputs	Hydro Schedules, Constraint Control %,Marginal Value Limit Overrides	Ad hoc



- RTSCED will utilize previous generator dispatch instructions to create new dispatch instructions (new dispatch methodology entirely)
- Cases approved and priced in a much more regimented construct
- PJM Dispatchers provided flexibility for exceptions for case approval to maintain system reliably
- Removal of DGP (antiquated logic)
- Adjust auto-execution of Location Pricing Calculator (LPC) case to be closer to the start of the 5 minute interval
- Several user interface and logic enhancements to core dispatch applications for new RTSCED approval process that requires dispatch re-training per PJM and NERC protocols

Proposed Energy and Reserve and Timing Design





Proposed Market Case Timing

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

Does the implementation of long-term SCED changes impact synchronized reserve events?

- When event occurs
 - Gap of time between the execution of RTSCED and approval of RTSCED as well as updated SE information will determine when a synchronized event is priced
- Pricing gap exists today and in the Long Term Design (5-10 or more minutes)

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Synchronous Reserve Deployment Task Force, Five Minute Dispatch and Pricing Review



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