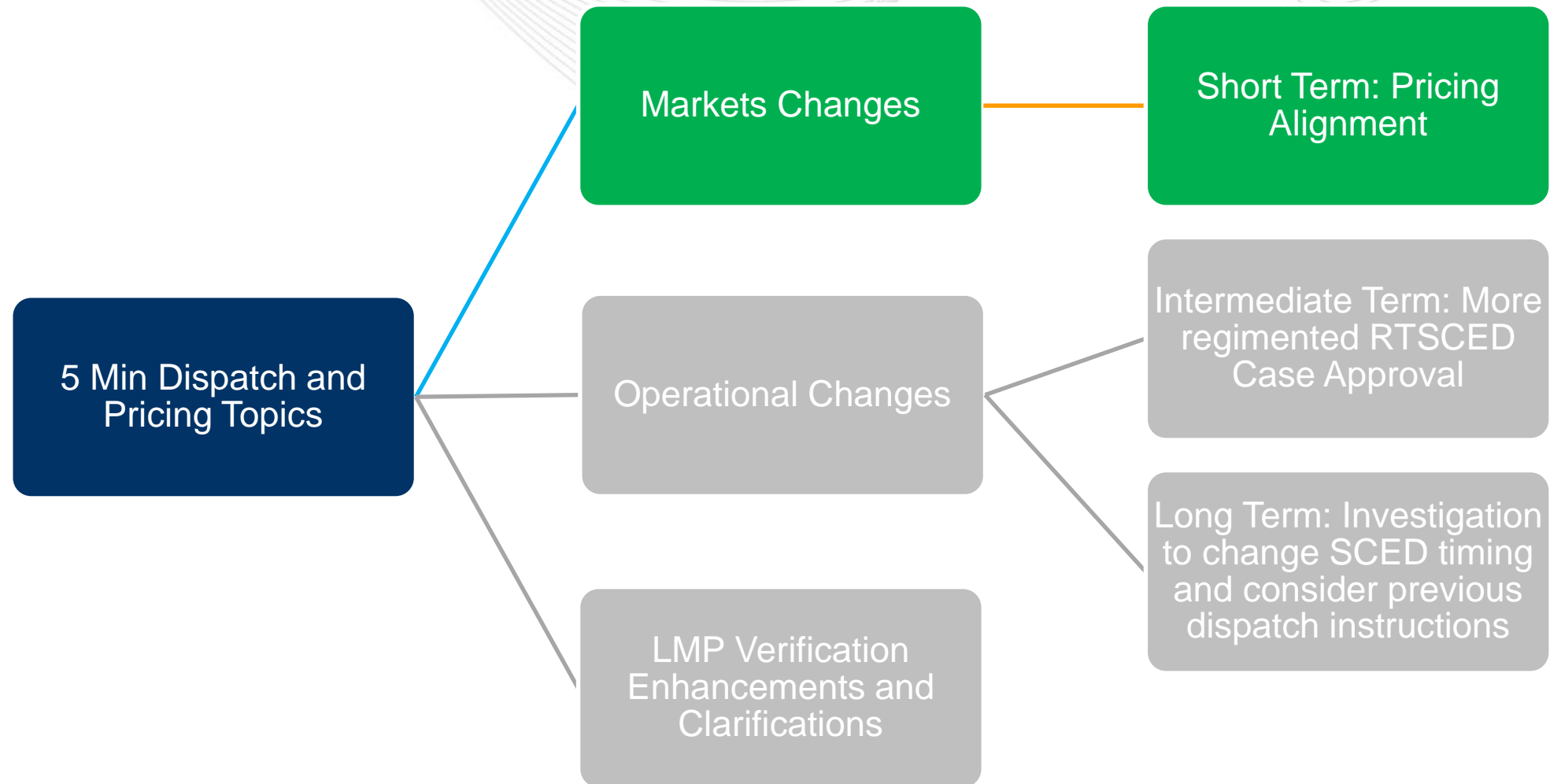# PJM Package Highlights:
5 Minute Dispatch and Pricing

Adam Keech

Vijay Shah

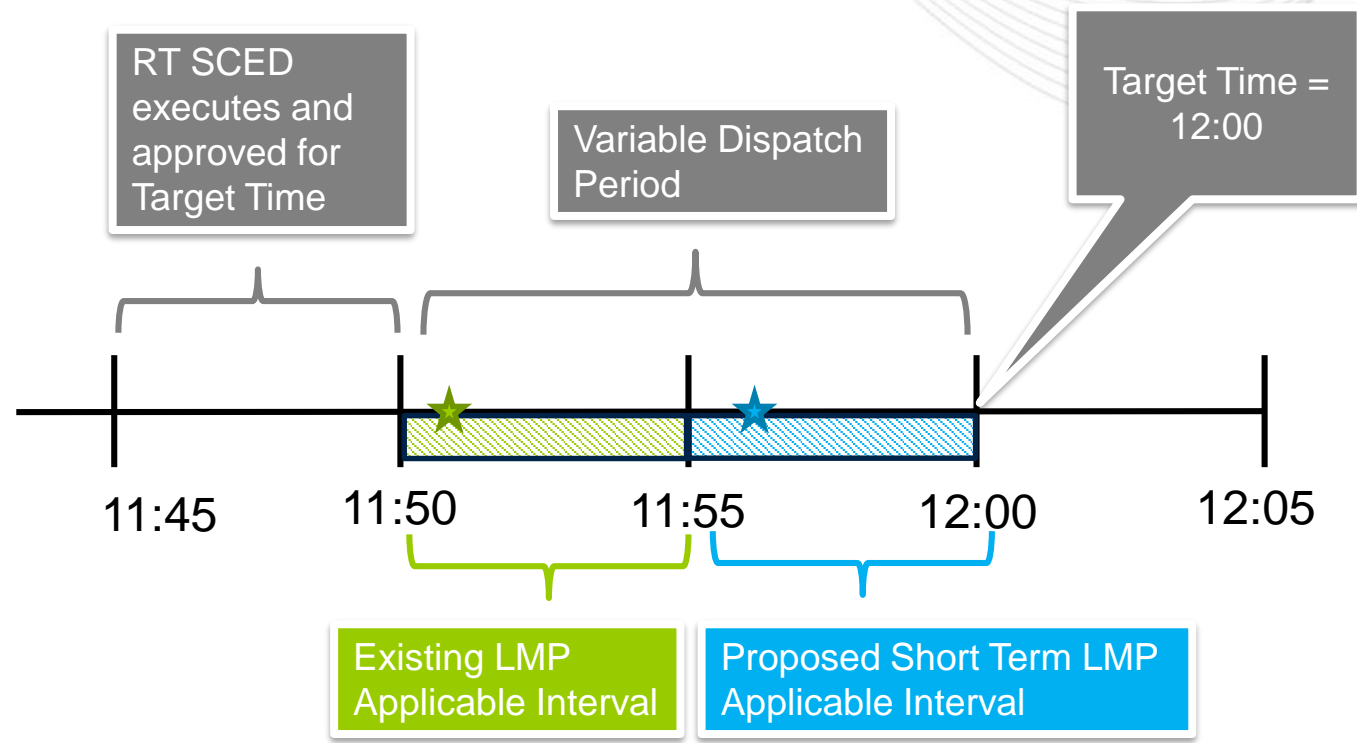Markets and Reliability Committee

June 18, 2020

- Vote is only for benefit of filing and implementing of short-term changes to the PJM market

- Vote is not with regard to whether the short-term change addresses the issues raised by the IMM in the Fast-Start pricing docket

  - FERC will ultimately decide in Fast-Start docket

  - Vote indicates your support for the short-term change

  - While PJM believes this change would satisfy the concerns raised in the Fast-Start proceeding, stakeholders will have the opportunity to state their position on this issue in the Fast-Start docket when PJM makes its informational filing

- If short-term changes are approved, PJM will file with FERC and also indicate the current state of the intermediate term changes

- PJM is pursuing the intermediate term changes:
  - First test of 5-minute auto case execution was successful
  - The next test is for the week of June 22
  - If everything is successful PJM will keep this intermediate term design component in place permanently
    - If that occurs, PJM will bring forward conforming manual changes for member endorsement memorializing these changes to its operational business practices
- PJM has not, at this point, identified any Tariff/OA changes necessary to implement the intermediate term changes

- Align LPC to use the reference RTSCED case for the same target time
  - Example: LPC calculates prices for interval from 11:55 to 12:00 using RT SCED solution with target time 12:00
  - Execute LPC cases every five minutes after the start of dispatch interval. Therefore, a delay of approx. 5-6 minutes will occur between when the RTSCED case is approved and priced
- Resource Offers, Parameters and Ancillary Service assignments corresponding to the interval ending at the target dispatch time are used as input to the RTSCED Case
  - Example: Offers for 11:00 to 12:00 will be effective up to and including the 12:00 target time, Offers 12:00 to 13:00 will be applied to dispatch target time of 12:05
- LPC will use the most recently approved RTSCED case prior to target time if no approved RTSCED case exists for the same target time

RT SCED executes and approved for Target Time

Variable Dispatch Period

Target Time = 12:00

11:45   11:50   11:55   12:00   12:05

Existing LMP Applicable Interval

Proposed Short Term LMP Applicable Interval

⭐ Existing LPC case execution time
⭐ Proposed LPC case execution time

SCED Changes:

- Hourly Offer Curves for 11:00 hour used instead of 12:00 hour
- Inflexible Sync Reserve and Regulation awards determined by ASO for 11:00 hour instead of 12:00 hour

LPC Changes:

- Align LPC to use the latest approved RT SCED case for the same target time (interval ending)
- LPC case executed at a predefined time, shortly after the start of dispatch interval
  - I.e. the LMP for 11:55 - 12:00 is calculated at 11:56:30

Short Term Timeline

Committee	Action
May MIC	1st Read
June MIC	Vote
June MRC	1st Read
July MRC/MC	Vote
October 2020	Tentative implementation pending FERC approval

- Updates on Intermediate changes and progress

- Continue to pursue LMP Verification Enhancements

- Evaluate Long Term changes

- Strong desire from members to evaluate/enhance the dispatch algorithm

- PJM is dedicated to working with stakeholders on this issue

- Propose to hold the discussion as a working issue at the MIC with reports provided to the OC

- Start detailed discussion at the September 2020 MIC(?)

- Side-by-side comparison of the different methods in use today
  - MISO/SPP, CAISO, ERCOT and PJM
- Determine a process by which to qualitatively measure the pros/cons of each method
- Build software to simulate selected model(s)
- Run models in parallel with production
- Determine a method to measure benefits
- Develop a cutover plan
- Cutover to new dispatch and pricing process

PJM is looking for feedback on this approach.

Assuming a change is beneficial.

Appendix A

Intermediate term and LMP Verification Enhancements/Clarifications

- The objective is to execute and approve one RTSCED case for each 5 minute dispatch target time subject to minimal deviations
  - Auto execution of RTSCED cases changes from every 4 minutes to every 5 minutes
  - Additional cases may be manually executed and approved as needed by dispatch
  - PJM will transition to this state through operator training and software changes
- May include changes to ancillary service requirements or other items necessary to accommodate less frequent dispatch cases

LMP Verification Enhancements and Clarifications

– Changes to be pursued separately

– Clarify Operating Agreement language regarding LMP and Clearing Price reposting

– Conforming manual language changes

  • Align with the current Verification process

  • Updated Dead Bus Replacement Logic