Synchronous Reserve Deployment Task Force SRDTF

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System Operations Subcommittee

- Synchronized reserve events are emergency procedures triggered by PJM to maintain grid reliability in accordance with NERC BAL standards.
  - Caused by a variety of conditions including loss of generation and sudden influx of load

- An All-Call message is sent to units with an instruction to raise to full output.
  - Message is not limited to units with reserve commitments

- RTSCED cases are not consistently used during an event.
  - Cases that align with dispatch instructions are not readily available
  - No expectation to follow case instructions

- SRDTF Established: March, 2021 by OC

- 7 meetings: April through September 2021
  - 70-80 participants on average per meeting

- SRDTF provided education to participants around synchronized reserves and followed CBIR process to create packages

- Updates provided to MC Webinar and SOS

Package A: PJM IRD

– 75% support
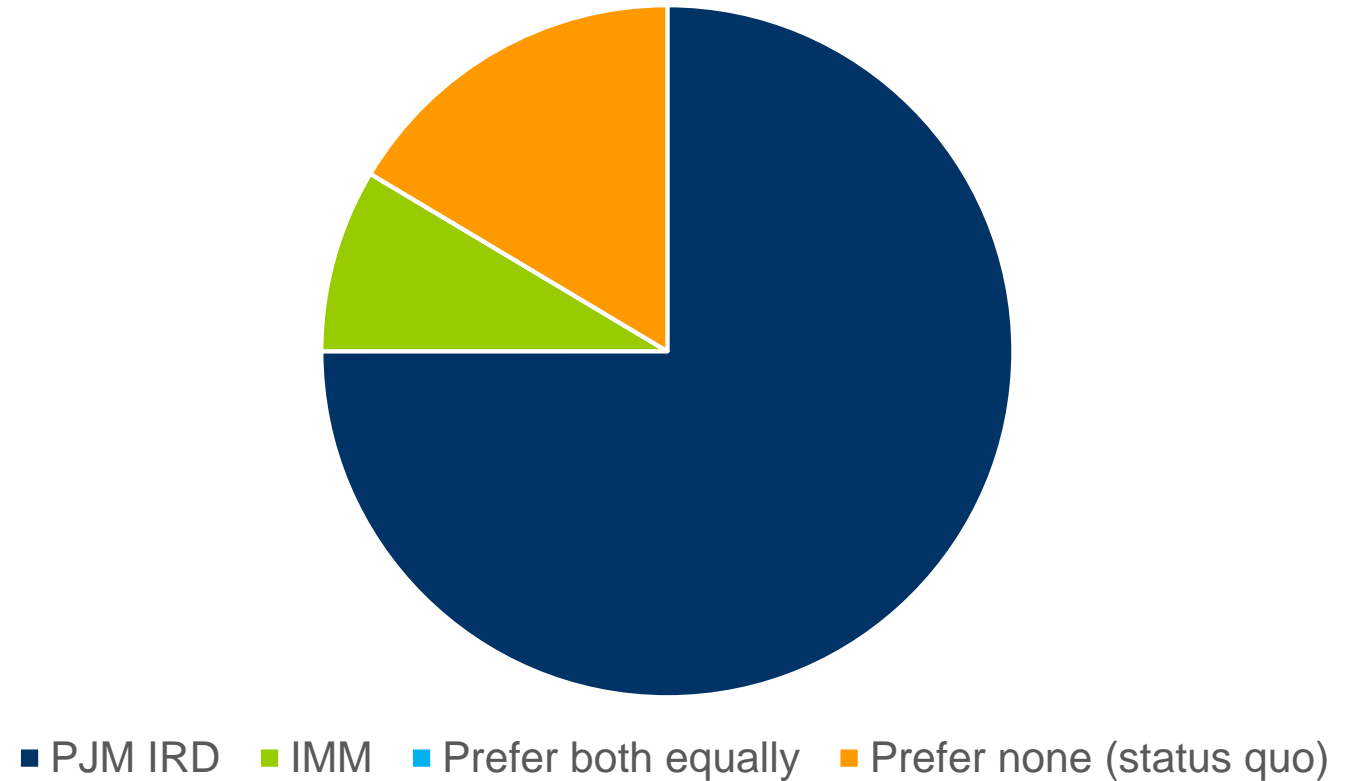
Package B: IMM

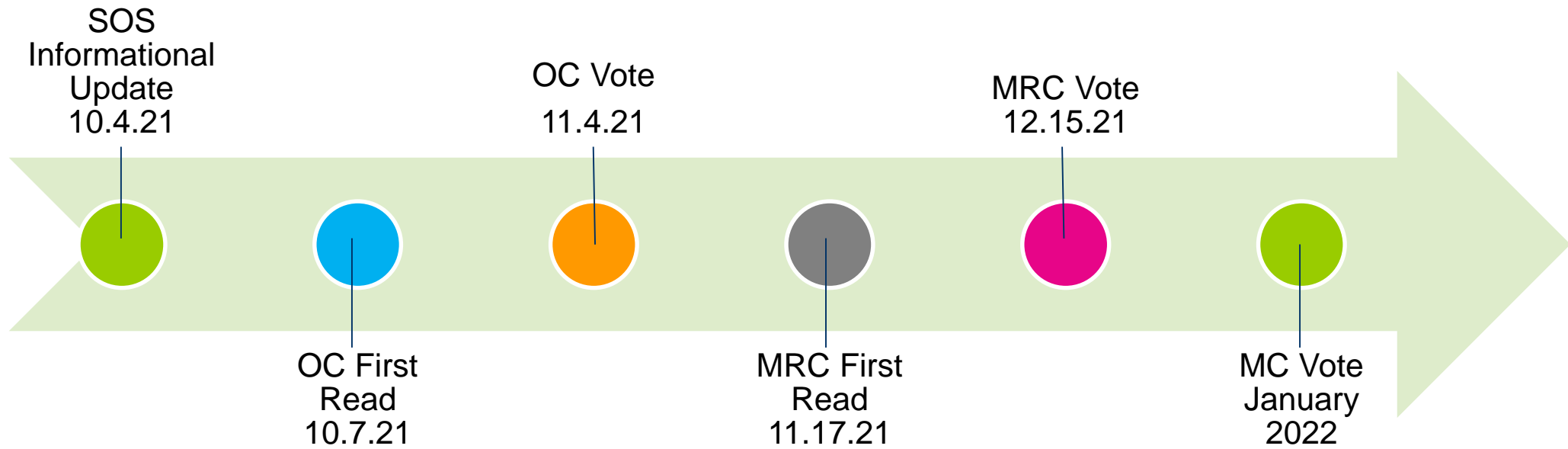– 9% support

Prefer both equally

– 0% support

Prefer none (status quo)

– 16% support

Which package do you prefer?

■ PJM IRD   ■ IMM   ■ Prefer both equally   ■ Prefer none (status quo)

SOS Informational Update 10.4.21

OC First Read 10.7.21

OC Vote 11.4.21

MRC First Read 11.17.21

MRC Vote 12.15.21

MC Vote January 2022

SRDTF – Synchronous Reserve
Deployment Task Force

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Appendix

- The level of unit response is not controlled and hard to predict.
  - Mixture of over and under response across various units
  - Slow initial recovery followed by extended over response
    - Transition period for units to deviate from the dispatch signal to comply with the manual All-Call instruction
- Tools like RTSCED are not consistently used during an event.
  - Pricing and dispatch signals are from a pre-event RTSCED case and often conflict with All-Call instructions
  - Transmission constraints are not proactively controlled and require manual operator actions
  - Inefficient dispatch of units, no economic order

- Controlled deployment of synchronized reserves throughout events.
    - Utilize tools like RTSCED to have consistent pricing and dispatch signals
    - Ensure NERC BAL compliance during recovery and coming out of synchronized reserve events
    - Reliable system constraint control transition in and out of events
- Clear rules and expectations addressing the process of approving RTSCED cases around a synchronized reserve event.

- In scope:
  - Reserve deployment method
  - Expectations of resources
  - Evaluation of performance
  - Pricing in aftermath of event
- Out of scope:
  - Penalty rate for nonperformance
  - ORDC/Price Formation changes
  - Reserve procurement changes

- Reviewed education on what synchronized reserves are and how PJM measures performance. This included both PJM actions and expected Member actions during a synchronized reserve event.

- Reviewed education on synchronized reserves practices, how PJM deploys reserves in Real Time Operations, and how PJM's Control Center handles synchronized reserve events.

- Provided education on synchronized reserve deployment and measurement practices used by other ISOs and RTOs.

- Provided education on how the implementation of long term SCED changes will affect options around synchronized reserve events (5-minute dispatch review).

- Reviewed education on unit response statistics during spin events.

- Provided education on upcoming Reserve Price Formation changes and how these changes will affect synchronized reserve clearing, pricing and events.

- Presented information on reserve deployment during recent spin events in 2021.

- Provided education on real time dispatch during synchronized reserve events.

- SRDTF followed the CBIR process to develop interests, design components, solution options for design components, and packages
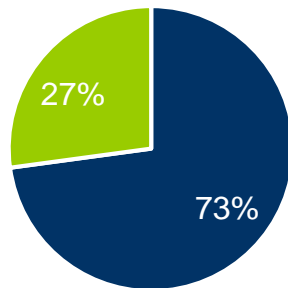
SRDTF Survey Results
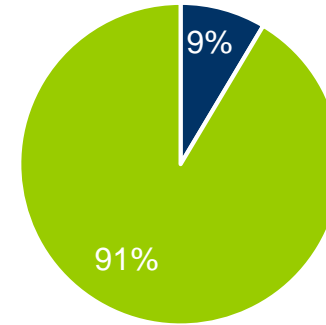
1. Can you support the PJM IRD package?

- ■ Yes ■ No
  - 76% Yes
  - 24% No

3. Can you support the IMM package?
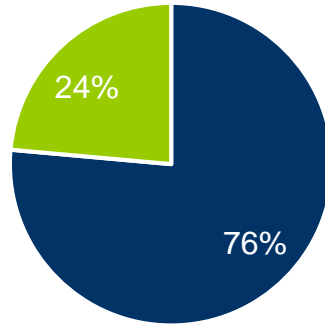
- ■ Yes ■ No
  - 9% Yes
  - 91% No

2. Do you prefer the PJM IRD package over status quo?

- ■ Yes ■ No
  - 73% Yes
  - 27% No

4. Do you prefer the IMM package over status quo?

- ■ Yes ■ No
  - 24% Yes
  - 76% No