



Next Generation Markets Update

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Market Services Division
Market Implementation Committee
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Multi-year partnership between PJM, MISO, ISO-NE and GE started in April 2017

Goals

- Create a quantum leap in capability and performance
- Enable ISOs to share in costs and system functionality
- Reduce maintenance costs and time-to-market
- Improve system security and quality
- Develop the next generation markets support team at GE and PJM



Product Development

Software products

- Data Transfer Enhancements
- Redesigned Network Applications
- Redesigned Market Clearing Engines
- Redesigned Markets Gateway
- Bidding Service

PJM Product Implementation

Customize and implement

- Data Transfer Enhancements
- Redesigned Network Applications

In 2020, GE released the data transfer enhancements and network applications software to PJM. PJM promoted the Day-Ahead and Real-Time network applications functionality as the production system of record in October 2021.

GE delivered Project Increment 1 of the Day-Ahead Market Clearing Engine to PJM in October 2021. PJM completed test scenarios and acceptance criteria for requirements for Project Increment 2, which is scheduled for delivery in late April 2022. The overall implementation delivery for the Day-Ahead Market Clearing Engine is expected to be complete in Q3 2023, concluding with Factory Acceptance Testing. Production Go Live is dependent on successful completion of Parallel Production Operations.

GE delivered the Real-Time Market Clearing Engine product in December 2021. Planning for the implementation phase will begin in Q4 2022, with planned delivery estimated to be Q3/Q4 2024.

Product Development



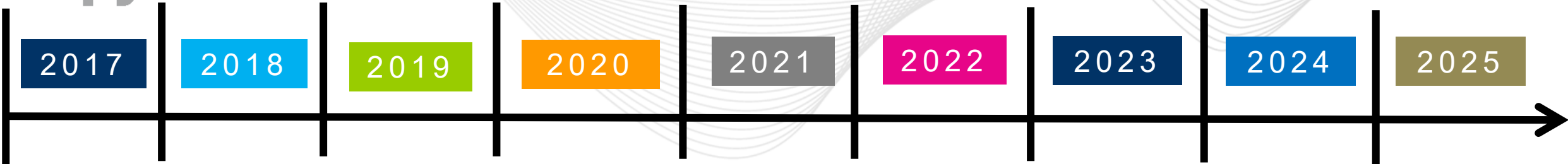
Software products

- Market Clearing Engine User Interface for Market Operators
- Enhanced Combined Cycle Model
- Time-Coupled Security Constrained Unit Commitment (SCUC) and Security Constrained Economic Dispatch (SCED) with Simultaneous Feasibility Test (SFT)
- Clearing Choreographer
- Case Builder

Phase 2 nGEM initial agreement signed in December 2020. Along with MISO and ISO-NE, PJM contracted with GE to receive the Clearing Choreographer (August 2021) and Case Builder (December 2021) components.

Status of Phase 2 Components in Product Development:

- Market Clearing Engine UI – Delivered
- Enhanced Combined Cycle Model – Planning
- Time-Coupled SCUC / SCED with SFT – Development
- Clearing Choreographer – Development
- Case Builder – Not Started



Phase 1

Product development

Product implementation for Data Transfers and Network Applications

Product implementation for Day-Ahead Market Clearing Engine

Day-Ahead MCE in Production

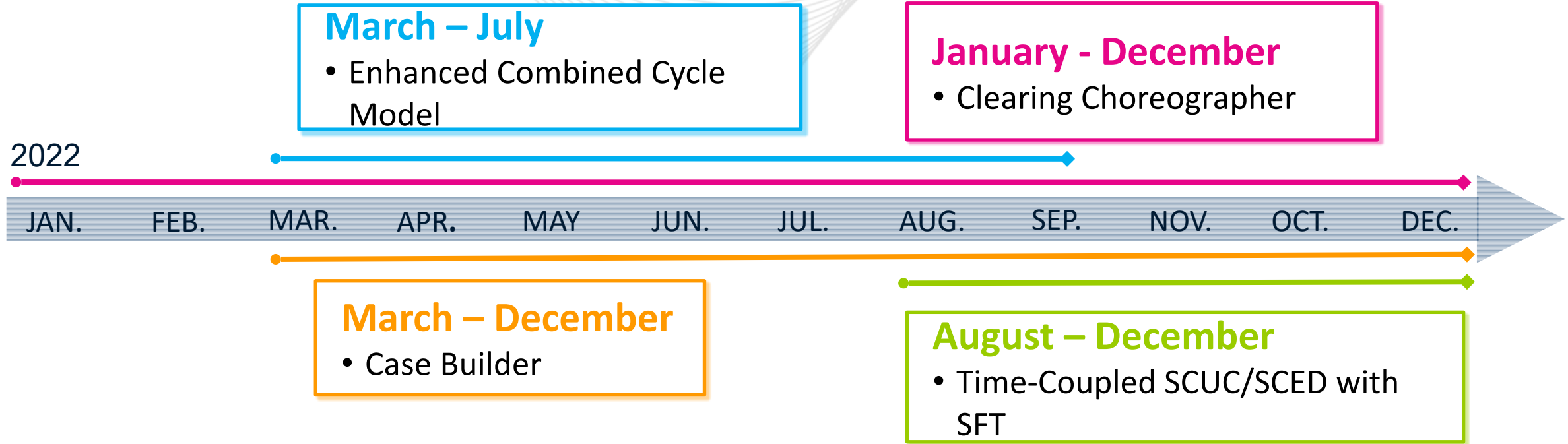
Phase 2

Product development

Product implementation for RT Market Clearing Engines

RT MCE in Production

Phase 2 Product Development Timeline



The Market Clearing Engine User Interface for Market Operators was delivered in April 2021.

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