

ENA Innovation

19th September 2023

Brian Wann – Project Manager

transition
Moving to a smart future

Our flexibility market trials are;



Being run in areas across Oxfordshire



A unique collaborative programme of trials bringing two key energy innovation projects together



Trialling new innovative markets and commercial approaches, smart systems and platforms in a real world environment



Running across seven bulk supply points and 13 primary substation areas



Open to businesses across the trial areas able to offer flexibility services



Unique opportunities for peers to trade spare connection capacities between each other

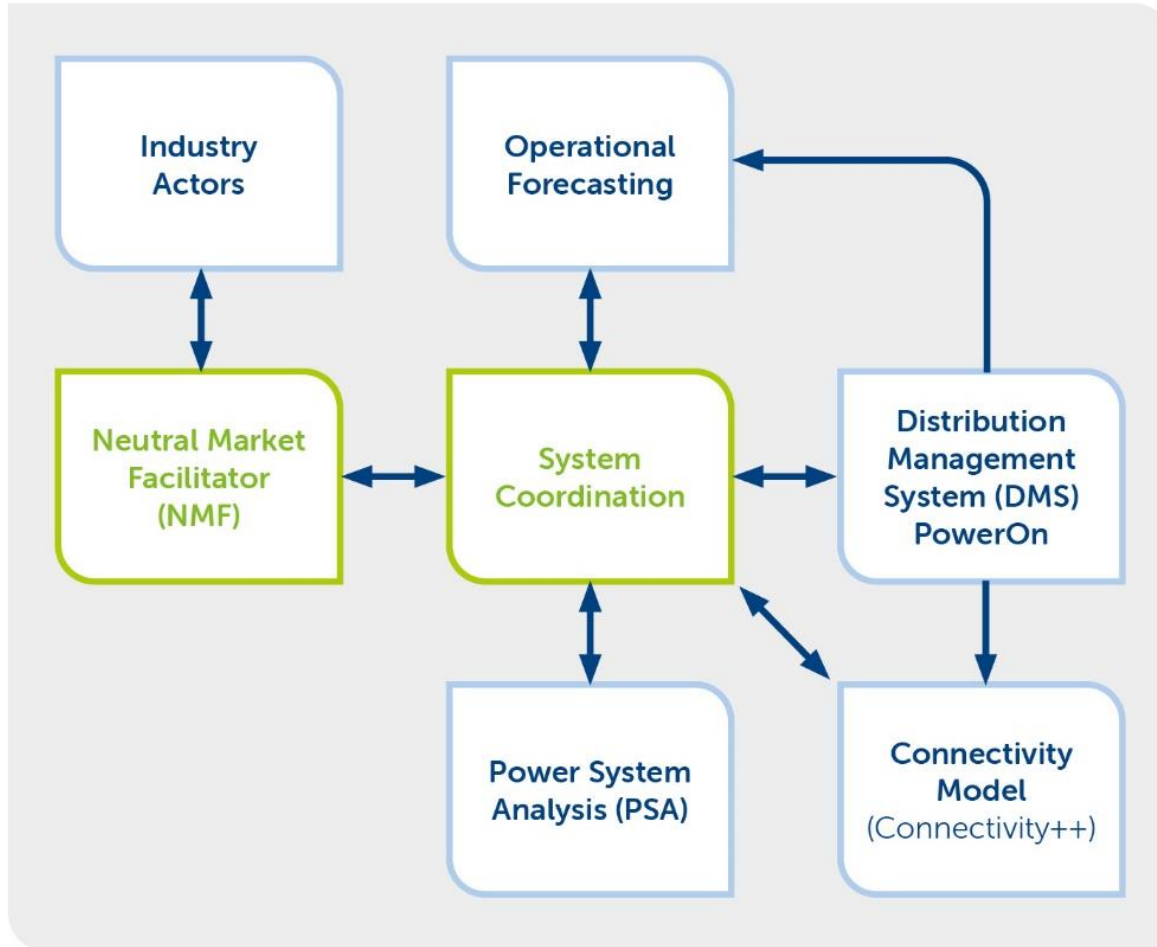


³ RIIO-ED2 Final Determinations Overview document (ofgem.gov.uk)

⁴ National Grid - EFFS

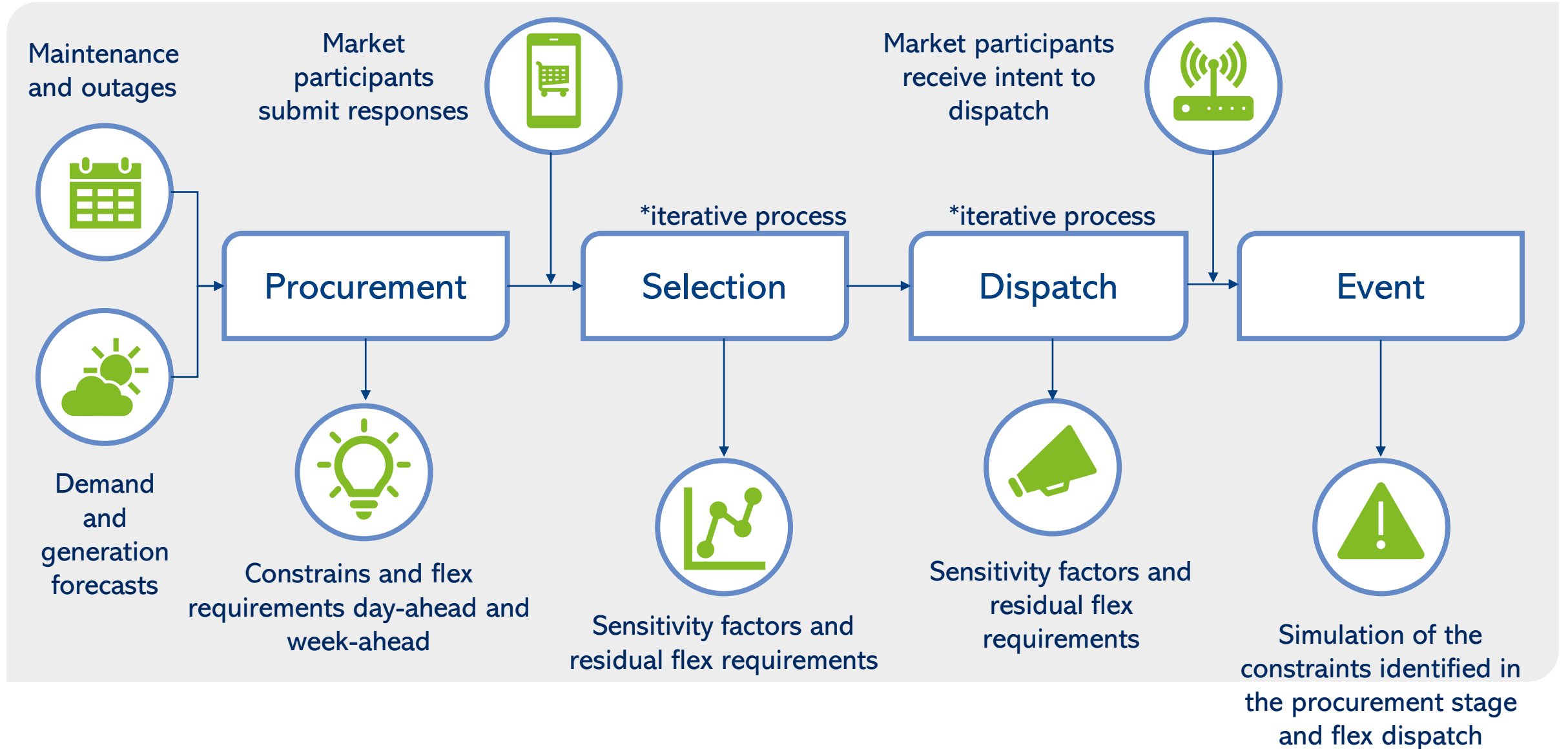
⁵ Fusion - SP Energy Networks

TRANSITION HLD of Tools



- **Operational Forecasting:** provides a view of **demand/generation** profiles at granular nodal level for 0-10 days ahead of real-time
- **Distribution Management System (PowerOn):** Provides control room view of **live/real-time network connectivity** and power flows
- **Power System Analysis (PSA):** Computes anticipated **power flows** under different near-term topology change and forecast scenarios
- **System Coordinator (WSC):** Provides the core intelligence for **flex market decision making**, allows an input interface for control room, and manages automated data flows between sub-component DSO systems
- **Neutral Market Facilitator (NMF):** Provides a user interface **portal for DSO interaction with the Industry Actors** to enter/accept their available flex service volumes/costs, and for them to request approval for peer-to-peer (P2P) capacity trades
- **Connectivity model (Connectivity++):** The **master model that holds the network** and how customers relate to it and master repository for key **network parameters** (e.g., impedance, ratings and normal running arrangement).

Process Flow



Market Trials

Trial Period 1

November 2021 - February 2022

Cumulative No. of Contracts - 35
Flex Delivered - 560.2
Number of Assets - 24

Type of Auction:
Week Ahead

Scheduled Events

Highlights:

- Tested the Sustain Peak Management, Trading Import Capacity (Exceeding MIC) and Trading Export Capacity (Exceeding MEC services.
- Ran auctions on three BSPs
- Contracted flexibility at Week-Ahead
- Enabled two platforms to provide participants with an alternative route to market - Battery, V2G, Hydro and Solar PV

Trial Period 2

May 2022 - September 2022

Cumulative No. of Contracts - 92
Flex Delivered - 1118.7
Number of Assets - 39

Type of Auction:
Season Ahead
Week Ahead
Day Ahead

Scheduled Events

Highlights:

- Tested three additional services: Sustain Export Peak Management, Dynamic Constraint Management and Secure Constraint Management
- Added auctions on three more BSPs
- Contracted flexibility at Day Ahead
- Increased diversity of participating DERs and market participants, including those providing flexibility from domestic appliances and HVAC

Trial Period 3

November 2022 - February 2023

Cumulative No. of Contracts - 180
Flex Delivered - 3078.2
Number of DERs - 82

Type of Auction:
Season Ahead
Week Ahead
Day Ahead

Scheduled Events

Highlights:

- Added auctions on four primary substations
- Contracted flexibility at Season Ahead
- Onboarded an aggregator who enabled flexibility from domestic assets at the grid edge
- Enabled participants to stack contacts for different services

Technical Trials

March 2023 until May 2023

Cumulative No. of Contracts - 307
Flex Delivered - 4757
Number of DERs - 16

Type of Auction:
Week Ahead
Day Ahead

Forecasted Events

Highlights:

- Advanced the technical capabilities, processes, data and tools required to run a flexibility market and test these in an integrated manner
- Procured for contracts based off of real-time data
- Procured flexibility using Sensitivity Factors

