Public

# RNP: Balancing and Settlement Reforms

## IEP 5: Policy Design, CBA & Implementation Update Pre-Read

1 September 2026

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# Pre-Read Content

Please note these items are for IEP members to review prior to session.

All content is draft for review and feedback from IEP members.

| Policy | Pre-read Items | Slides |
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| General | CBA Central/Low/High Case assumptions | 4-11 |
| | Target Operating Model Methodology | 13-19 |
| Shorter Settlement Period | Policy Design Update | 21 |
| | TOM Outputs | 22-27 |
| Lowering BM Threshold | Policy Design Update | 29 |
| | TOM Outputs | 30-36 |



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# CBA: Key assumptions

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# Principles for defining inputs and assumptions to CBA modelling

"All models are wrong, but some are useful" – George Box (Statistician)

1. **Avoid "boiling the ocean":** CBA modelling should be designed to capture the expected impacts of options relative to the counterfactual. Model complexity and resource is targeted proportionate to the importance of the relevant inputs/assumptions. This means avoiding unnecessary focus on enhanced representation of bits of the market that have a minimal impact on the benefits case.
2. **CBA analysis is intended for option appraisal, not option design**: CBA is not intended to produce/ assess new designs but rather to appraise options, and variants, that have already been designed.
3. **Avoid analysis paralysis**: Some areas of the reform will remain subject to inevitable uncertainty or dependencies on future outcomes. Several tools can be used to support decision making under uncertainty (e.g. sensitivity testing) but cannot eliminate it. Remaining uncertainty should be presented transparently but we must avoid pursuing spurious accuracy of things that are inevitably uncertain.
4. **Simple and transparent > Complex and opaque**: Where genuine uncertainty exists, simple but transparent analysis is preferred over complex analysis that creates a false sense of precision but is opaque. Complexity should be reserved for the things that are most significant to the outcomes, and where it adds genuine high-value precision. This often means abstracting from uncertain specifics to reflect sufficiently representative outcomes – e.g. assuming away minority / corner cases.
5. **Recognise limitations**: Limitations are inevitable but should be reported transparently, including the potential impacts on decision making.
6. **Modelling alongside other evidence**: Modelling is one component feeding into decision making but cannot capture all relevant factors. Broader analysis going beyond the modelling is just as important and should be incorporated into decisions transparently.

# Counterfactual assumptions

We summarise below the evidence base and principles surrounding assumptions under each of the core cases

*Central case assumes defined programmes and improvements are delivered*

*Low case reflects better outcomes under counterfactual such that options deliver lower benefits*

*High case reflects worse outcomes under the counterfactual such that options deliver greater benefits*

| Assumption | Evidence source | Central case | Low case | High case |
|---|---|---|---|---|
| Enhanced visibility impact on counterproductive actions | 1. Current levels of forecast error associated with system imbalance<br>2. Extent of early actions taken by ENCC (TBC)<br>3. NESO workstreams – e.g. PRA | Reflects improved visibility of non-BMU behaviour to same level as BMUs. Does not reflect any forecasting improvements of NIV chasing specifically | Also reflects improved NIV chasing visibility | More limited visibility improvements from PRA, etc in relation to non-BMU behaviour |
| Enhanced visibility impact on reserve procurement | 1. Engagement with NESO reserve procurement teams<br>2. NESO workstreams – e.g. PRA | Assume visibility improvements from ongoing NESO workstreams do not affect reserve procurement at DA | Improved net demand forecasting reduces reserve procurement requirements | N/A – High Case tested through assumptions on options rather than counterfactual |
| Post-GC trading volumes | 1. Data on recent trading volumes post GC<br>2. Analysis of pre/post P342 trading behaviour | *Impacts on trading and liquidity are tested through tipping point analysis (particularly on Package 2) rather than through Central/Low/High Cases* | | |

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# Counterfactual assumptions

We summarise below the evidence base and principles surrounding assumptions under each of the core cases

*Central case assumes defined programmes and improvements are delivered* ↓ *Low case reflects better outcomes under counterfactual* ↓ *High case reflects worse outcomes under counterfactual* ↓

| Assumption | Evidence source | Central case | Low case | High case |
|---|---|---|---|---|
| Voluntary participation of 10-50MW assets | 1. NESO connections register – historic voluntary BM participation by technology and location<br>2. FES Holistic Transition – future capacity trends | Assume constant % of voluntary participation with capacity growth | Additional growth in BM participation driven by enhanced ability and value in BM participation | Assume flat absolute MW voluntary participation |
| Non-BMU physical NIV chasing | 1. Approach and evidence base discussed in last IEP with feedback provided | Reflects 'best expectation' of NIV chasing dynamics based on stakeholder engagement | Greater risk aversion in NIV chasing - lower volumes and less 'unhelpful' actions | Greater risk appetite in NIV chasing - higher volumes and more 'unhelpful' actions |
| BMU intentional imbalance positioning | 1. NESO data on improved FPN accuracy<br>2. Engagement with ENCC on key drivers of system operation challenges | Assume no intentional BMU physical NIV chasing – i.e., that BMUs follow FPNs to metered positions to comply with Grid Code requirements. BMU NIV chasing is limited to imbalance positioning, i.e., intentional differences in traded volumes and metered positions, *explored through the trading and liquidity tipping point analysis*<br>We do not vary this assumption under High and Low Cases based on:<br>1. Assumption that long-term, systematic deviations between FPNs and metered positions would be enforced against<br>2. ENCC view that BMU physical NIV chasing is not a key system operation challenge | | |
| Interconnector trading restrictions | 1. NESO announcement on IC trading restrictions<br>2. NESO views based on engagement with EU TSOs | Interconnector trading limits applied as per today and adjusted for new interconnection in the future. We assume that some form of restriction remains independent of IEM participation based on NESO engagement with EU TSOs.<br>Not varied under High/Low case but may be tested under 'Congestion' sensitivity. | | |

*NB: We discussed our approach to non-BMU physical NIV chasing in the last IEP*

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# LBM assumptions (1/2)

We summarise below the evidence base and principles surrounding assumptions under each of the core cases

NB: Implementation cost estimates will also vary under the Low and High Cases

*Central case makes our most robust assumption about option benefits delivered*

*Low case reflects worse outcomes under the option*

*High case reflects better outcomes under the option*

| Assumption | Evidence source | Central case | Low case | High case |
|---|---|---|---|---|
| 10-50MW capacity that falls under threshold | 1. NESO connections register – historic voluntary BM participation<br>2. FES Holistic Transition – future capacity trends | In line with NESO connections register dataset adjusted for FES pathway | Reduce forward looking participation to reflect intentional sizing of capacity below the 10 MW threshold | No change to central case – other metrics varied instead |
| BM onboarding limit | 1. NESO ENCC input<br><br>***BM registration noted as a key dependency to deliver benefit*** | Assumes BM registration and onboarding is enhanced to allow for new assets to be incorporated into the BM without significant delays | Consider introducing some limit on BM registration and onboarding per year | No change to central case |
| Skip rates | 1. Open Balancing Platform programme plan<br>2. Baringa analysis<br>3. Clean Flexibility Roadmap 2026<br>4. LCP delta: Skip Rates Report | Assume no 'uneconomic' skips from go-live: i.e., remaining skips based only on systems services requirements | Avoidable skip rates fall linearly from implementation to 2035. All new LBM BMUs face tech-specific level of skips | No change to central case |
| Primacy restrictions – ANM | 1. DNO's Network Headroom Reports<br>2. UKPN's constraint breaches report | Application of exclusion restrictions - TBC | Application of exclusion restrictions - TBC | No restrictions on utilisation of ANM assets assuming Primacy rules allow effective deployment |

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# LBM assumptions (2/2)

We summarise below the evidence base and principles surrounding assumptions under each of the core cases

NB: Implementation cost estimates will also vary under the Low and High Cases

*Central case makes our most robust assumption about option benefits delivered*

*Low case reflects worse outcomes under the option*

*High case reflects better outcomes under the option*

| | Assumption | Evidence source | Central case | Low case | High case |
|---|---|---|---|---|---|
| | Primacy restrictions – flex services | 1. Market Participant engagement<br>2. DNO flex procurement and dispatch data (License Condition 31E returns) | No interaction between BM access and flex services | TBC | No interaction between BM access and flex services |
| | Non-participation for techno-economic reasons | 1. Subject matter expert views – both Baringa and external stakeholders<br>2. Implementation assessment | EfW, Bio-CHP and Demand flexibility (CLF) choose not to actively participate in the BM | In line with the central case | In line with central case |
| Approach as outlined for Counterfactual | Enhanced visibility impact on counterproductive actions | 1. Current levels of forecast error associated with system imbalance<br>2. Extent of early actions taken by ENCC (TBC)<br>3. NESO workstreams – e.g. PRA | New BMUs participating in the BM under LBM (and reduced NIV chasing as a result) directly fed through the approach – benefits vary under Central/Low/High cases as a result of differences in assumptions of the level of benefit delivered under ongoing NESO workstreams under the Counterfactual, rather than as a result of differences in LBM treatment/assumptions | | |
| | Link with reduced reserve requirements | 1. Engagement with NESO Reserve procurement teams<br>2. NESO workstreams – e.g. PRA | | | |

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# SSP assumptions (1/2)

We summarise below the evidence base and principles surrounding assumptions under each of the core cases

NB: Implementation cost estimates will also vary under the Low and High Cases

*Central case makes our most robust assumption about option benefits delivered*

*Low case reflects worse outcomes under the option*

*High case reflects better outcomes under the option*

| Assumption | Evidence source | Central case | Low case | High case |
|---|---|---|---|---|
| Active adoption of SSPs<br><br>Note: Applicability to 5mins is still being investigated | 1. Official reports on MTU uptake post 15min SDAC and SIDC implementation by the Market Coupling Steering Committee (MCSC), Market and System Design (MSD) joint group<br>2. Stakeholder engagement | All relevant* volumes to shift to the more granular MTU for 15 mins<br>**volumes for baseload generators that do not significantly vary their dispatch may continue trading at less granular MTUs, with no impact on outcomes* | N/A – not varied under the Low/High case, as evidence post IEM implementation of 15min MTUs and SSP suggests 80+% adoption of 15min MTUs in EU-wide DA power trading by Jan 2026, only a few months after SDAC implementation. | |
| Cross-border trading at shorter MTU in ID and DA markets | 1. ENTSO-E's Market Information on SDAC and SDIC<br>2. Stakeholder engagement | Cross border trading between GB and IEM markets moves to 15-mins | | |
| Load shaping for those without 15-min metering capabilities | 1. Implementation team assumptions<br>2. Input from DESNZ smart metering team (confidential)<br>3. Market participant engagement, including with Elexon | Load shaping is not modelled explicitly<br>Extensive load shaping unlikely to be necessary given meter upgrades by 2035 retail implementation date.<br>Improved Elexon load shaping profiles are increasingly accurate given the growing number of customers whose metering data can be used as a reference.<br>Load shaping is only needed for within 30-minute shapes and is therefore highly targeted, improving accuracy where needed. | | |

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# SSP assumptions (2/2)

We summarise below the evidence base and principles surrounding assumptions under each of the core cases

NB: Implementation cost estimates will also vary under the Low and High Cases

*Central case makes our most robust assumption about option benefits delivered*

*Low case reflects worse outcomes under the option*

*High case reflects better outcomes under the option*

| | Assumption | Evidence source | Central case | Low case | High case |
|---|---|---|---|---|---|
| Approach as outlined for Counterfactual | Enhanced visibility impact on counterproductive actions | 1. Current levels of forecast error associated with system imbalance<br>2. Extent of early actions taken by ENCC (TBC)<br>3. NESO workstreams – e.g. PRA | Reduced structural imbalance being resolved in the BM directly feeds through the approach, reducing system imbalance expectations, with implications for counterproductive actions and reserve procurement.<br>As in the case of LBM, SSP benefits in this area may also vary under Central/Low/High cases as a result of Counterfactual assumptions about the level of benefit delivered under ongoing NESO workstreams. | | |
| | Link with reduced reserve requirements | 1. Engagement with NESO Reserve procurement teams<br>2. NESO workstreams – e.g. PRA | | | |

NB: As outlined above, we do not identify an evidence base for varying assumptions driving SSP market impacts under the Low and High Cases. But, the robustness of SSP market impacts can be tested under alternative SSP design variants, e.g., impacting on the timing of SSP applicability to retail, and under alternative implementation timeframes.
The overall CBA of the SSP reform will also vary as a result of the range of implementation pathways and cost estimates under the Low and High cases.

**Key question for stakeholders:** Are there any assumptions impacting a key driver of variation in the size of the SSP market impacts under the Central/Low/High that we have not considered?

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# Breakout discussion

At the IEP we will have time to discuss the key assumptions and provide views.

Given previous feedback, we will assume IEP members have developed views in advance

- Please provide comments on the assumptions made for the central, low and high cases for:
  - The counterfactual: c. 20 mins
  - Lowering the balancing mechanism: c. 20 mins
  - Shorter settlement periods: c. 20 mins
- Where do you disagree with the assumptions made under any of the cases, and what would you propose instead?
- Are there any key assumptions that you expect to affect the benefits/disbenefits of the options that have not been captured?
- Do you have any further information/evidence that would support finalisation of the assumptions used?

# Content & Methodology for Target Operating Model

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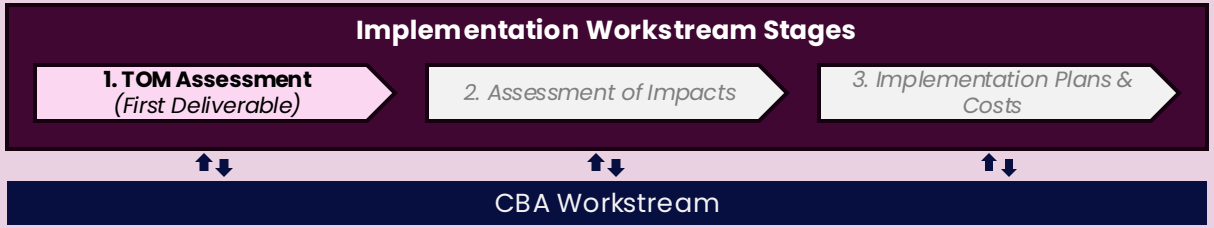
# Purpose of the TOM & Preliminary Assessment of Impact Deliverable

Outlining the context and design principles guiding our TOM analysis

## Purpose of TOM assessment




The Target Operating Model (TOM) represents the first stage (1) of the Implementation Workstream, defining and driving the cross-industry changes required to deliver the reforms across market participants and central bodies. It provides a structured framework to guide and organise engagement with stakeholders, while establishing an initial view of the end-to-end future operating environment, including interactions across the value chain. It identifies preliminary hypotheses of impacts across:

- **Processes**
- **Roles and responsibilities**
- **Data and technology**
- **Capabilities**

The outputs of the TOM serve as the foundation for the next phase of the Implementation Workstream, which will develop a detailed assessment of impacts and quantify costs associated with each reform (2) together with implementation plans (3).

### How this industry TOM differs to typical TOMs

This TOM adopts an industry-wide, reform-driven approach, unlike standard TOMs that focus on a single organisation design. It serves to map reform-driven changes and materially impacted participants. It is centred on identifying where organisations may need to adapt internally, as well as how interactions between different market participants and central bodies may evolve as a result of these changes.

## TOM design principles

The design principles below establish a shared agreement across all involved parties, aligning on a common objective and a consistent understanding of how the Target Operating Model is structured and the purpose it is intended to serve.

| | |
|---|---|
| **Materiality** | Prioritise analysis on the most significant changes from the current state, concentrating effort on areas with the greatest scale, complexity, and impact across participants and processes. |
| **Transparency** | Ensure regular external stakeholder touchpoints to share project outputs, articulate key assumptions, and prioritisation decisions to support stakeholder understanding and confidence. |
| **Evidence-Based** | Ground analysis in data and subject matter expertise, incorporating inputs from stakeholders where relevant. While data requests will be made, stakeholders are encouraged to proactively share information to support. |
| **Managing Uncertainty** | Reflecting the breadth and scope, the TOM provides strategic direction and a foundation for subsequent phases, explicitly outlining areas of uncertainty and further investigation. |

# Methodology

Outlining our methodology with slides 9–12 presenting each stage below in further detail

## 1. Key Inputs

**NESO Material & SMEs** — NESO to Define

- Previous materials from Phase 0 of RNP B&S reform design
- Policy design documents with an interactive Q&A log to track outstanding design questions
- NESO internal process & capability assessment

**IEP Sessions** — Baringa to Define

- Validation and feedback on key stages of the TOM analysis
- Tested and refined market participant segmentation approach
- Tested and refined "as-is" TOM diagrams

**Targeted Bilaterals** — Industry to Provide

- Discussion of key changes and impacts each policy brings to different market participants and their representative segment
- Testing TOM design and key gaps with central bodies including Elexon, Ofgem and DESNZ

**Baringa SME Input** — Baringa to Define

- Leverage specialist industry expertise within Baringa to accelerate analysis, challenge assumptions and refine engagement questions.

## 2. Analysis

**1. Define Key Participants**

- Identify organisations impacted by each B&S policy.
- Define market participants into groups and archetypes
- For each reform, create segmentation to guide analysis
- Validate and refine archetypes through engagement with the IEP and key stakeholders.

**2. Map 'as-is' processes at a targeted level**

- Review relevant outputs from previous work
- Conduct a targeted review of industry documentation (e.g. Grid Code, BSC, market procedures).
- Identify information and data exchanges across orgs
- Map intra-industry current-state end-to-end information flows.

**3. Identify key areas of change**

- Assess current-state process maps against each B&S reform.
- Identify areas of material change, new activities, and altered responsibilities.
- Validate impacts through IEP discussions and structured stakeholder bilaterals

**4. Define 'to-be' processes**

- Design future-state processes based on identified areas of change and policy intent.
- Define key changes to roles, responsibilities, information flows, and decision points.
- Document assumptions underpinning future-state design.

**5. Assess deltas with targeted depth**

- Undertake a preliminary assessment of impacts using bilateral stakeholder sessions to understand what specifically needs to change (e.g. process complexity, system implications, organisational shifts),
- Complement this analysis with other inputs from central bodies

## 3. Outputs

**TOM per Policy**

- A set of E2E high-level process maps with commentary on "as-is" and "to-be" processes
- A deep-dive into key changes broken down by segmentation (market participants and central bodies)
- Identification of any critical new capabilities required by any organisation (to-be validated in Assessment of Impact)

**Preliminary Impacts**

- A longlist of expected impacts to support sizing the assessment of impact phase
- Structure impacts across key dimensions (e.g. Information & data, operational processes)
- Draft preliminary questions to key stakeholders on identified impacts to support next phase of work

### What the TOM will not include

- × Detailed end-to-end "as-is" and "to-be" processes.
- × Detailed system or technology mapping
- × Exhaustive mapping of all stakeholders
- × Internal organisational design within individual entities
- × Conducting full capability assessments of organisations.

# Key Inputs | Content underpinning our analysis

Collating inputs from multiple sources to triangulate key changes expected across each reform



## NESO Materials & SMEs

- **Leveraged Phase 0 outputs** to develop as-is and to-be TOMs, including Visio information flows.
- **Reviewed policy definition documents** for each reform to understand the to-be processes, roles and interactions.
- **Maintained a policy design question log** to clarify areas of ambiguity and capture agreed assumptions where future design decisions remain outstanding.
- **Assessed NESO Process & Capability Impact Assessments** which identified key impacts to NESO across each policy to identify and cross-check findings from our analysis. We note a gap in analysis from NESO in assessing Unit Bidding due to reprioritization of the reform


## IEP Sessions

- **Validated methodology and stakeholder mapping** through IEP 2, including testing of our TOM and impact assessment approach and refinement of market participant archetypes.
- **Reviewed 'as-is' TOMs for each policy** at IEP 3, using breakout discussions to validate key areas of change and challenge assumptions.
- **Used IEP feedback to shape subsequent engagement**, informing targeted bilateral discussions and areas for deeper analysis.
- **Published all IEP feedback and responses** on the NESO website to ensure transparency and traceability.

## Targeted Bilaterals

- **Conducted ~25 bilateral sessions** with market participants representing all key archetypes, drawing on both IEP members and CFI respondents.
- **Focused discussions on priority questions** identified in IEP 3 alongside key gaps from TOM analysis.
- **Captured candid stakeholder views** through non-attributable discussions.
- **Hosted dedicated workshops** with Elexon, DESNZ and Ofgem to map reform impacts across key cross-industry processes.
- **Maintained a comprehensive stakeholder evidence log**, providing a clear audit trail.

## SME Internal Sessions

- **Leveraged specialist industry expertise within Baringa** to accelerate analysis, challenge assumptions and refine engagement questions.
- **This included identifying further market participants** to have bilaterals with alongside validating outputs from market participants
- **Used expert challenge sessions** to validate findings and identify gaps or areas requiring further stakeholder testing.
- **Undertook deep-dive analysis on FPN = TP,** helping to clarify future-state TOM requirements and identify outstanding policy design considerations for NESO.

# Analysis | Defining Industry Segments

Creating bespoke segments per reform to enable focused analysis on key areas of change across different participants

**1. Define Key Participants**

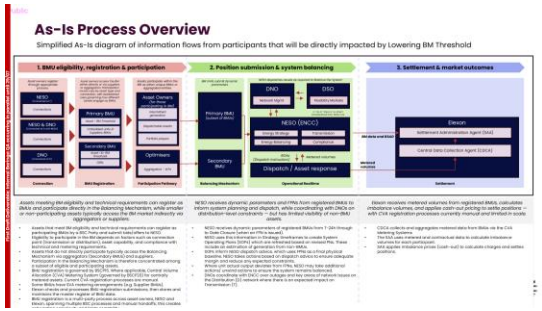
| Group | Archetype (CBA) | Segmentation | | | | |
|---|---|---|---|---|---|---|
| | | **Reform 1 – Lowering BM** | **Reform 2 – Align MTD to GC** | **Reform 3 – FPN submission** | **Reform 4 – Unit-level bidding** | **Reform 5 – Shorter settlement** |
| **Asset Owners** | **Intermittent generation** (price takers) | Wind & Solar > 50MW* | With in-house trading desks | Generators | All – highest impact | 1. Players with in-house technology:<br>1.1. Mature trading operations<br>1.2 Immature trading operations<br>2. Players that outsource |
| | | Wind & Solar < 50 MW | | | | |
| | **Dispatchable Assets** | Asset > 50 MW | | Interconnector users | All impacted | |
| | | Asset < 50 MW | | | | |
| | **Portfolio Players (inc large B2B suppliers)** | Asset > 50 MW | | Generators | All – highest impact | |
| **Suppliers** | | Asset < 50 MW | | Suppliers BRP | | |
| | **Independent Business to Consumer (B2C) & Business to Business (B2B) Suppliers** | All | | Supplier BRP | All – GSP impact | |
| **Optimisers** | **Aggregators** | Virtual Lead Parties (VLPs) | | VTPs & VLPs | VTPs & VLPs | |
| **Assetless traders** | **Non-physical traders** | To be explored | All | n/a – Non-physical traders not required to submit FPNs | Financial trading in IDC | |
| **Consumer** | **I&C customers** | With Flex | *n/a – indirect impact through contracting mechanisms* | | | COP1/2 meters |
| | **Small Medium Enterprises** | | | | | SMETS1/SMETS2/ Trad meters |
| | **Residential consumers** | Without Flex | | | | |
| **Third-Party** | **Technology Providers** | Energy Data Management | Trading platforms | Scheduling & nomination systems | Trading platforms | All systems end-to-end |
| | | SCADA / telemetry | | Position management systems | Energy Data management | |
| | | | | | SCADA / telemetry | |

*Note: 50MW in England and Wales, 30MW in South Scotland and 10MW in North Scotland

# Analysis | Outlining our TOM Activities

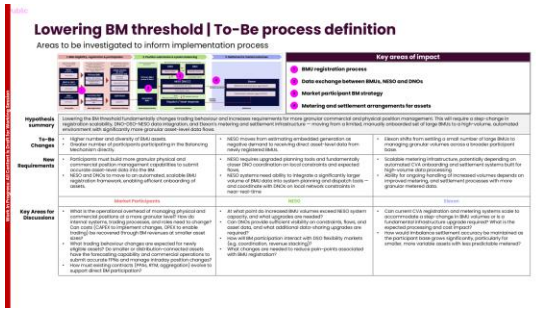
Mapping out “as-is” and “to-be” TOM diagrams to exemplify key areas of change across different industry participants

**2. Map ‘as-is’ processes at a targeted level**



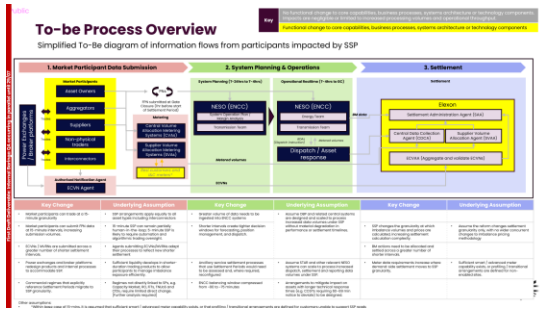

Developed a Target Operating Model map focused on intra-industry interactions and flows, presented at IEP3 on 29 June 2026

**3. Identify key areas of change**




Conducted workshops with NESO, Elexon and internal SMEs to identify key areas of change and develop hypotheses for testing through stakeholder bilateral engagement

**4. Define ‘to-be’ processes**




Synthesised insights from central bodies and market participant engagement to define and validate the to-be processes

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# Analysis | Assessment of Impact Framework

Defining a framework to inform our preliminary assessment of impact of each RNP B&S policy

**5. Assess deltas using assessment of impact framework**

| # | Category | WHAT it captures | Examples |
|---|---|---|---|
| 1 ID | Information & data | Visibility, accuracy, granularity, timeliness of positions/behaviour/system state | If the BM participation threshold is lowered to 1 MW, then NESO will have visibility of significantly more distributed assets in real time. |
| 2 RO | Rules & obligations | New/changed mandatory requirements, tolerances, enforcement, compliance obligations | If FPNs are required to match traded positions, then market participants will face new mandatory compliance and enforcement obligations. |
| 3 OP | Operational processes | Day-to-day operating workflows and behaviours (scheduling, dispatch/balancing workflow, coordination) | If the market trading deadline is aligned with Gate Closure, then traders will need to finalise trades earlier and manage higher imbalance risk. |
| 4 TS | Technology & systems | IT builds, integrations, data/metering systems, platforms & tooling (build + run) | If settlement periods move to 15 minutes, then settlement systems will need to handle higher-frequency metering and data flows. |
| 5 CI | Commercial outcomes & incentives | Direct cost outcomes, risk exposure, and financial incentives (system cost, bill impacts, market behaviour incentives) | If balancing reforms reduce redispatch volumes, then system balancing costs could reduce and positively impact consumer bills. |
| 6 BV | Business model viability | Whether some business models/technologies become structurally advantaged/disadvantaged (viability/exit/need to redesign) | If unit-level bidding is introduced, then aggregators with diverse portfolios could face increased complexity. |
| 7 CB | Change & delivery burden (transition) | One-off change effort, phasing, migration risk, dependencies, programme constraints | If multiple reforms are implemented together, then central bodies and industry will face a significant phased delivery and migration challenge. |

# Deep Dive into Step 3 | Bilateral Sessions

Highlighting key bilateral engagements supporting this (and future) deliverables

**3. Identify key areas of change (Deep Dive)**

**Market Participants (**Number of Organisations**)**


**Central Bodies (**Number of Bilaterals Held**)**


- Bilateral engagement has occurred across all market participant archetypes, with a higher level of engagement provided to groups with more diverse operating patterns
- Engagement included central bodies including NESO, Elexon, distribution-related organisations, regulators and government to ensure the assessment captures considerations across the wider electricity market ecosystem.
- This broad coverage has helped validate assumptions and identify impacts across both directly affected participants

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# Shorter Settlement Period

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# Shorter Settlement Period

## Fundamental design

| | Length | MTU | Gate Closure | Balancing window |
|---|---|---|---|---|
| Settlement Period | 15-minute (base case) | Aligned to the Settlement Period for both DA and ID | 60 minutes | 75 minutes |
| | 5-minute | | | 65 minutes |

## Implementation approach

| | Metering group | Timeline | Meter rollout | Transition period | Enduring |
|---|---|---|---|---|---|
| Phasing and metering | Wholesale and large consumers | 2032 | Site-specific basis | N/A | Wholesale and retail settlement aligned. Load shaping only for retail customers without metering capability. |
| | Retail consumers (domestic and small commercial) | 2035 | Aligned with current replacement cycles | Load shaping for all retail consumers | |

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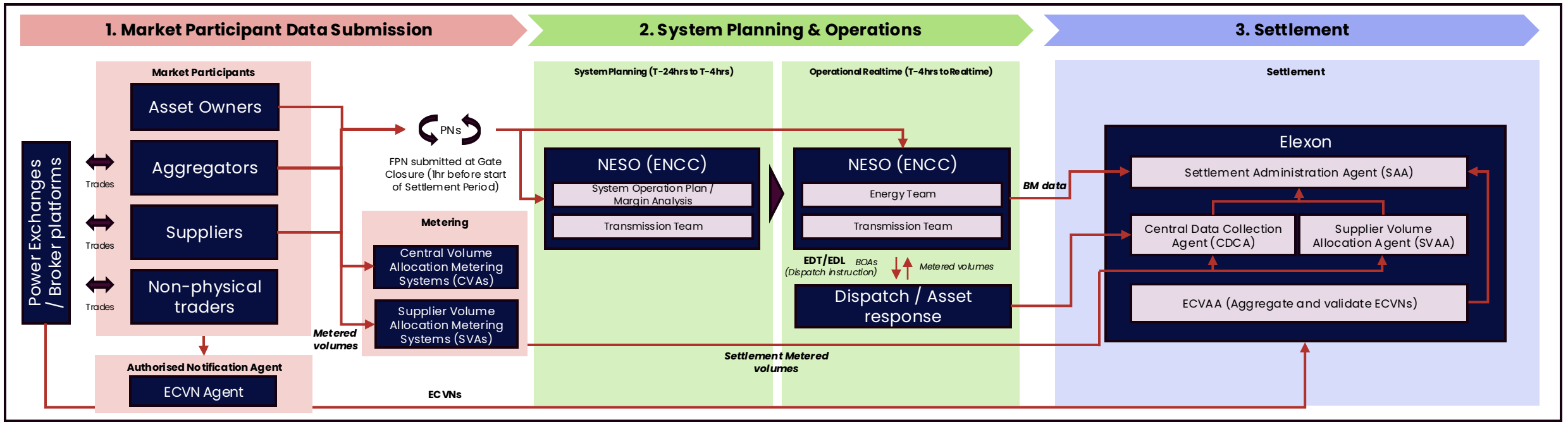
# SSP | As-Is Process Overview

Simplified As-Is diagram of information flows from participants that will be directly impacted by Shorter Settlement Period




| *Positions and physical expectations are submitted at settlement period granularity (FPNs, bids/offers/ECVNs), establishing each party's commercial and physical baseline ahead of real time.* | *NESO receives dynamic parameters and FPNs from registered BMUs to inform system planning and dispatch* | *Elexon receives metered volumes from registered BMUs, calculates imbalance volumes, and applies cash-out pricing to settle positions for each settlement period* |
|---|---|---|
| • Wholesale trading products are currently traded and nominated at 30-minute granularity, forming the commercial baseline for participant imbalance positions.<br>• ECVNs are submitted at Settlement Period granularity, meaning contract notifications and imbalance allocation currently align to 30-minute periods.<br>• PNs/FPNs are submitted at the same settlement-period frequency, providing NESO with the participant's expected physical output or demand position ahead of real time.<br>• Asset-level forecasts, optimisation runs and position-management processes therefore need to produce settlement-period-aligned positions before Gate Closure. | • Some inputs (expected physical output) in the PN/FPNs used in planning and real-time operation are received at Settlement Period granularity.<br>• Other operational inputs are already more granular than the Settlement Period — for example dynamic parameters, operational telemetry, dispatch instructions and asset-response data.<br>• System planning uses PNs/FPNs, dynamic parameters and operational assumptions to form a view of expected generation, demand and system constraints ahead of real time.<br>• Real-time operations rely on both settlement-granular market data and higher-frequency operational data to assess available flexibility and issue dispatch instructions. | • Settlement currently reconciles ECVNs, metered volumes and participant imbalance positions at 30-minute granularity.<br>• Elexon receives metered volumes: CVA metered volumes are collected and processed by the CDCA, while SVA metered volumes are aggregated by the SVAA. Both feed into the SAA for Settlement calculations.<br>• Elexon calculates imbalance volumes for each participant for each settlement period (30-minute granularity).<br>• Elexon applies imbalance pricing (cash-out) and settles positions for each settlement period (30-minute granularity). |

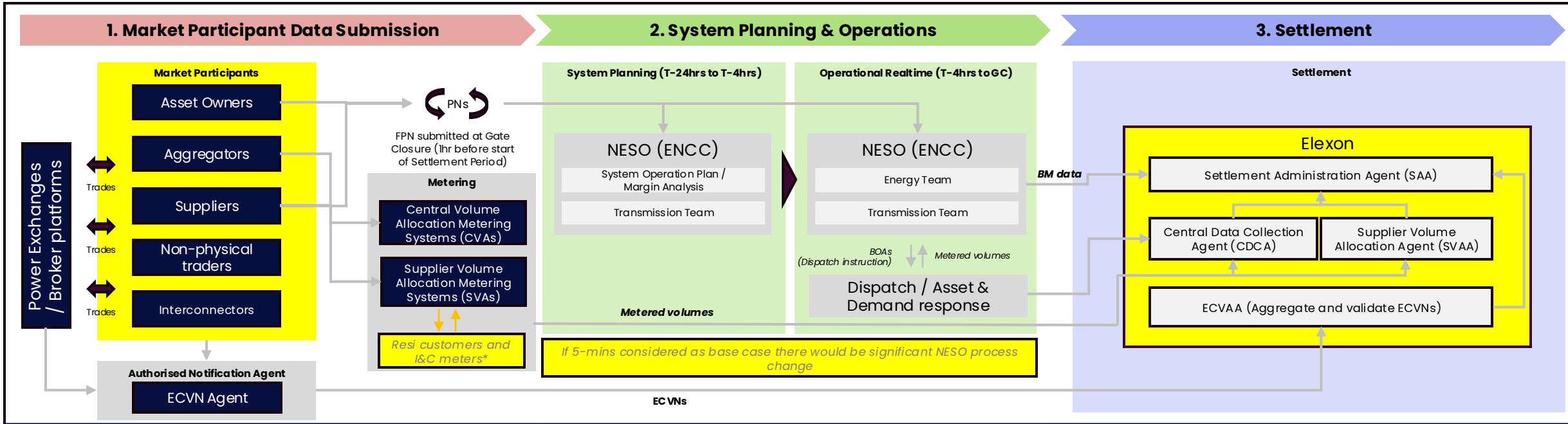
# SSP | To-be Process Overview

**Key**

No functional change to core capabilities, business processes, systems architecture or technology components

Functional change to core capabilities, business processes, systems architecture or technology components

## Simplified To-Be diagram of information flows from participants impacted by SSP




| Key Change | Underlying Assumption | Key Change | Underlying Assumption | Key Change | Underlying Assumption |
|---|---|---|---|---|---|
| • Market participants can trade at a 15-minute granularity | • SSP arrangements apply equally to all asset types including interconnectors | • Greater volume of data needs to be ingested into ENCC systems | • Assume OBP and related central systems are designed and scaled to process increased data volumes under SSP without material degradation in performance or settlement timelines. | • Meter data requirements increase where demand-side settlement moves to SSP granularity.<br>• Transitional arrangements: Elexon to use load-shaping for non-enabled sites to translate gaps between meter interval and settlement interval. | • Sufficient smart (SMETS2 with firmware upgrade)/ advanced meter capability exists. |
| • Market participants can submit FPN data at 15-minute intervals, increasing submission volumes. | • 15-minute SSP can remain partially human-in-the-loop; 5-minute SSP is likely to require automation and algorithmic trading oversight. | • Shorter intervals create tighter decision windows for forecasting, position management, and dispatch. | | | |
| • ECVNs / MVRNs are submitted across a greater number of shorter settlement intervals. | • Agents submitting ECVNs/MVRNs adapt their processes to reflect new shorter settlement | | | • SSP changes the granularity at which imbalance volumes and prices are calculated, increasing settlement calculation complexity. Systems may need to be upgraded and/or support windows extended to allow for greater processing time. | • Assume the reform changes settlement granularity only, with no wider concurrent changes to imbalance pricing methodology (with exception of reviewing CADL) or technical design of ancillary services. |
| • Power exchanges and broker platforms redesign products and internal processes to accommodate SSP. | • Sufficient liquidity develops in shorter-duration trading products to allow participants to manage imbalance exposure efficiently. | • Ancillary service settlement processes that use Settlement Periods would need to be assessed and, where required, reconfigured | • Assume STAR and other relevant NESO systems can scale to process increased dispatch, settlement and reporting data volumes under SSP. | • Interfaces into EMRS may need to be adapted for aggregation of the shorter settlement period. | • Assuming that Capacity Market and CfDs are not aligned to the shorter settlement period as this is independent from the BSC. (Though they could be amended.) |
| • Commercial regimes that explicitly reference Settlement Periods migrate to SSP granularity. | • Regimes not directly linked to SPs, e.g. Capacity Market, RO, FiTs, TNUoS and CfDs, require limited direct change. [Further analysis required] | • ENCC balancing window compressed from ~90 to ~75 minutes | • Arrangements to mitigate impact on assets with longer technical response times (e.g. CCGTs requiring 60–89 min notice to deviate) to be designed. | • BM actions need to be allocated and settled across a greater number of shorter intervals. | |

# SSP (15-minute) | Market Participant Deep Dive

**Overall impact:** Moving to 15-minute settlement periods increases temporal granularity across trading, forecasting, scheduling, metering, settlement and reporting processes. The main impact is a market-wide increase in data volumes, position-management frequency and settlement-system complexity, but the change is generally viewed as more proportionate and deliverable than 5-minute settlement.

## Key impacts

### Information & data

- Settlement data volumes increase materially, requiring more frequent capture, validation, storage and reconciliation of metered volumes, positions and settlement outputs.
- Retail and supplier impacts remain important, especially where smart-meter data, customer settlement and billing processes require changes.

### Technology & systems (TS)

- Participants need to update trading, forecasting, optimisation, PN / ECVN, dispatch, settlement, billing, metering, reporting and reconciliation systems to operate at 15-minute granularity.
- The change is not a single-system upgrade. It affects calculations, interfaces, data models, operational processes and third-party market interfaces.

### Operational processes (OP)

- Trading, forecasting, scheduling and settlement teams would need to manage more frequent position updates, higher transaction volumes and more granular reconciliation cycles.
- 15-minute settlement can still retain a meaningful "human-in-the-loop" trading model for many participants, although higher automation and improved workflow controls are likely to be needed.

### Change & delivery burden (CB)

- 15-minute SSP is generally seen as the more proportionate first step, with lower implementation burden and clearer European precedent than 5-minute settlement.
- Delivery burden scales with the number of affected systems, settlement interfaces, meters, customer / contract touchpoints, third-party providers and central market changes.

### Commercial outcomes & incentives (CI)

- More granular settlement sharpens imbalance and flexibility signals, but also increases forecasting, imbalance-volatility and risk-management requirements for participants.
- Fast-acting flexibility, batteries and flexible demand are positioned to benefit most, provided trading arrangements allow participants to respond close enough to delivery. For intermittent generation and suppliers, more granular settlement can increase forecast-error exposure and volatility-management requirements

## Affected Archetypes

| Groups | Archetype | Segmentation | RAG |
|---|---|---|---|
| Asset Owners | Intermittent generation | *With in-house trading technology* *With outsourced trading technology* | H |
| | Dispatchable Assets | | H |
| | Portfolio Players | | H |
| Suppliers | Independent B2C & B2B Suppliers | | H |
| Optimisers | Aggregators | | H |
| Assetless traders | Non-physical traders | | M |
| Consumers | I&C customers | *COP1/2 meters (for some I&C only) SMETS1/ SMETS2/ Traditional meters* | L |
| | Small Medium Enterprises | | L |
| | Residential consumers | | L |
| Third-Party | Technology Providers | *UK-specific systems* | H |

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# SSP (5-minute) | Market Participant Deep Dive

**Overall impact:** Moving from 15-minute to 5-minute settlement creates a step-change in operational, trading and technology requirements. The incremental impact is driven by the move from more frequent human-led position management to near-real-time, highly automated optimisation, with materially higher data-processing, forecasting, governance and settlement burdens.

## Key impacts

### Information & data

- The burden shifts from "more granular settlement" to near-real-time data readiness across forecasting, telemetry, metering, settlement and risk systems.
- Data quality, latency and automation become more critical, especially for participants managing large portfolios or retail/customer settlement processes.

### Technology & systems (TS)

- 5-minute SSP requires a much larger technology step-change than 15-minute settlement. Trading, optimisation and dispatch models need to process high-frequency positions and respond close to real time.
- Participants lacking algorithmic trading, automated dispatch, near-real-time forecasting and robust data architecture face the largest gap. Bilateral evidence notes that 5-minute settlement would likely require a move towards algorithmic and automated trading

### Operational processes (OP)

- 5-minute settlement materially increases the frequency of position updates and operational decisions. Trading desks may need to move from manual decision-making to automated strategy execution and exception management.
- Forecasting and optimisation processes need to support much shorter reaction windows, with sharper exposure to renewable ramps, asset outages and liquidity changes.

### Change & delivery burden (CB)

- The implementation burden is materially higher than 15-minute SSP and could require substantial changes across end-to-end trading, settlement, metering, reporting and control processes.
- It also creates the greatest market-readiness divergence: automated BESS and specialist optimisers may benefit, while suppliers, less automated generators and smaller participants may face disproportionate costs.

### Commercial outcomes & incentives (CI)

- 5-minute SSP sharpens imbalance and flexibility signals more than 15-minute settlement and could better reward batteries and fast-response assets.
- The same granularity could increase imbalance-price volatility and forecasting-risk exposure for participants that cannot adjust output or trading positions every 5 minutes.

## Affected Archetypes

| Groups | Archetype | Segmentation | RAG |
|---|---|---|---|
| Asset Owners | Intermittent generation | *With in-house trading technology*<br>*With outsourced trading technology* | H |
| | Dispatchable Assets | | H |
| | Portfolio Players | | H |
| Suppliers | Independent B2C & B2B Suppliers | | H |
| Optimisers | Aggregators | | H |
| Assetless traders | Non-physical traders | | M |
| Consumers | I&C customers | *COP1/2 meters*<br>*Smart meters*<br>*Traditional meters* | L |
| | Small Medium Enterprises | | L |
| | Residential consumers | | L |
| Third-Party | Technology Providers | *UK-specific systems* | H |

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# SSP | NESO Deep Dive

**Overall impact:** Shorter Settlement Periods would have a significant impact on NESO, requiring changes across System Operations, Markets and Finance, with systems, processes and operating models evolving to manage increased data volumes, more frequent settlement cycles and tighter decision-making timelines.

## Key impacts

### Information & data (ID)

- Increased volumes of operational data processed across NESO.
- More granular data required for forecasting, producing dispatch advice, undertaking market analysis, participant monitoring.
- Additional data management challenges associated with long/short settlement days and transition arrangements.

### Technology & systems (TS)

- Scaling of ENCC OBP and other systems to process higher data volumes and more frequent settlement periods.
- Potential upgrades to network bandwidth, processing power and data storage infrastructure.
- Increased automation required to manage data processing and operational activities efficiently.
- Scaling and resilience testing of STAR and other finance/settlement systems.

### Commercial outcomes & incentives (CI)

- Changes in market participant behaviour driven by more granular settlement incentives.
- Potential longer-term reduction in reserve requirements due to improved forecasting and system balancing efficiency.

### Operational processes (OP)

- More frequent forecasting, balancing and operational decision-making cycles.
- Increased communications and coordination between NESO, market participants and other industry parties.
- Changes to ENCC operational processes due to tighter decision timescales and increased data flows.
- Potential redesign of operational processes to increase automation and reduce manual intervention.

### Rules & Obligations (RO)

- Potential updates to network charging, settlement and billing frameworks.
- Development of operational measures to accommodate assets with longer technical response requirements.

### Change & Delivery Burden (CD)

- System development, integration, testing and readiness activities across multiple platforms.
- Parallel running, transition management and implementation assurance activities before go-live.
- Ongoing stakeholder engagement and coordination with industry participants, Elexon and wider market bodies.
- Additional headcount and specialist capability likely required to manage increased volumes and complexity.

## Areas of Greatest Change

| Capability (L2) | Capability (L3) | |
|---|---|---|
| Forecasting | Whole System Forecasting | L |
| | Operational Forecasting | M |
| Operational Planning | Network Access Planning | L |
| | Constraint Management | M |
| | Energy Trading Management | M |
| Regulation & Licence Mgmt | Performance Management | L |
| System Operation | ENCC Strategy | H |
| | ENCC Operations | H |
| | Operational Coordination | L |
| | Cross-Border Trading | H |
| Energy Markets | GB Market Design & Reform | M |
| | Market Operations | M |
| Industry Framework Mgmt | UK & EU Framework Dev | M |
| Contract Management | Charging/Billing Management | M |
| | Settlement | M |
| | Tariff Setting | M |

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# SSP | ELEXON Deep Dive

**Overall impact:** Shorter Settlement Periods increase settlement data volumes, processing requirements and operational complexity across Elexon's settlement and metering functions. The largest impacts relate to legacy system changes, metering implementation and coordination of industry transition.

## Key impacts

### Information & data (ID)

- Increased settlement data volumes and reporting granularity for settlement calculations, validations and outputs.
- Additional data transformation and assurance activity during transition to handle both 30 mins and shorter periods.
- Increased reliance on load shaping where metering data is unavailable at the target Settlement Period granularity.

### Technology & systems (TS)

- Legacy settlement and notification platforms designed around 30-minute Settlement Periods require significant modification or replacement, with ECVAA and associated settlement platforms identified as key impact areas. Long settlement day could also be challenging.
- Increased processing volumes drive longer runtimes and system performance impacts, with potential need for extend support and maintenance arrangements.

### Operational processes (OP)

- Increased operational effort across settlement processing, validation, reconciliation and reporting from higher data volumes.
- Reduced operational headroom as longer processing times compress investigation, support and recovery windows.
- Existing manual and semi-manual processes become less scalable under higher-frequency settlement arrangements.

### Rules & Obligations (RO)

- Amendments to BSC and supporting procedures to define and operate shorter Settlement Periods.
- Design dependency on whether EMRS and Capacity Market arrangements align to shorter Settlement Periods or retain 30-minute structures, with a different process to update those schemes.

### Change & Delivery Burden (CD)

- Significant implementation effort across central systems, settlement processes and industry interfaces, with materially greater impact under 5-minute settlement than 15-minute settlement.
- CVA metering changes may require site visits, meter reconfiguration, testing and recommissioning activities. Meter Operator resource availability is a key delivery dependency given the volume of site-based changes required across CVA, SVA, AMR.
- Careful planning and sequencing required to manage site access, commissioning requirements and meter operator capacity constraints.
- Extended testing, shadow settlement and parallel running required to reduce implementation and cutover risk.
- MHHS-style industry coordination and migration support, extending delivery effort beyond internal system implementation. Potential to leverage existing delivery capability depending on timing.

## Areas of Greatest Change

| Business Activity | |
|---|---|
| Settlement Systems | H |
| Metering & Assurance | H |
| Industry Migration & Coordination | H |
| Settlement Operations | H |
| Market Data & Reporting | M |
| BSC Governance & Change | M |
| EMRS / Capacity Market Settlement | M* |
| Settlement Assurance & PAB | L |

*Depends on whether EMRS, CM and related schemes align to shorter Settlement Periods.

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# Lowering the BM Threshold

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# Lower BM: Proposed design overview

| | Threshold | Requirements | Scope | Aggregation | Contract |
|---|---|---|---|---|---|
| Retrospective application | ≥30MW | Full participation: Dynamic parameters; Bids and Offers; PNs; operational metering | Existing Demand assets and Generation assets commissioned post-G99. | Already aggregated units can remain aggregated. Future aggregation not permitted. | A new connection contract will be required (similar to a BEGA) which will allow the option of CVA or SVA metering for settlements. |
| Full participation for new* assets | ≥10MW | Full participation: Dynamic parameters; Bids and Offers; PNs; operational metering | New* Generation and Demand. | | |
| Visibility-only for new* assets | ≥1MW | PNs and operational metering | New* Generation Units only | Aggregation allowed however then must participate fully in BM. | |

## Implementation approach

| | | |
|---|---|---|
| Now | Phase 0 | Existing visibility programmes |
| From 2029 | Phase 1 | All new* assets above 30MW |
| From 2030 | Phase 2 | All new* assets above 10MW |
| From 2032 | Phase 3 | 1MW visibility + 30 MW retrospectivity for post-G99 assets |

## Elements of design still under consideration

- Level of retrospectivity: threshold and how far back
- Aggregation arrangements
- Visibility option and demand threshold
- Contractual arrangements

*New: applies to assets not currently connected to the NETS, including those in the connections queue and those who have already received Gate 2 offers

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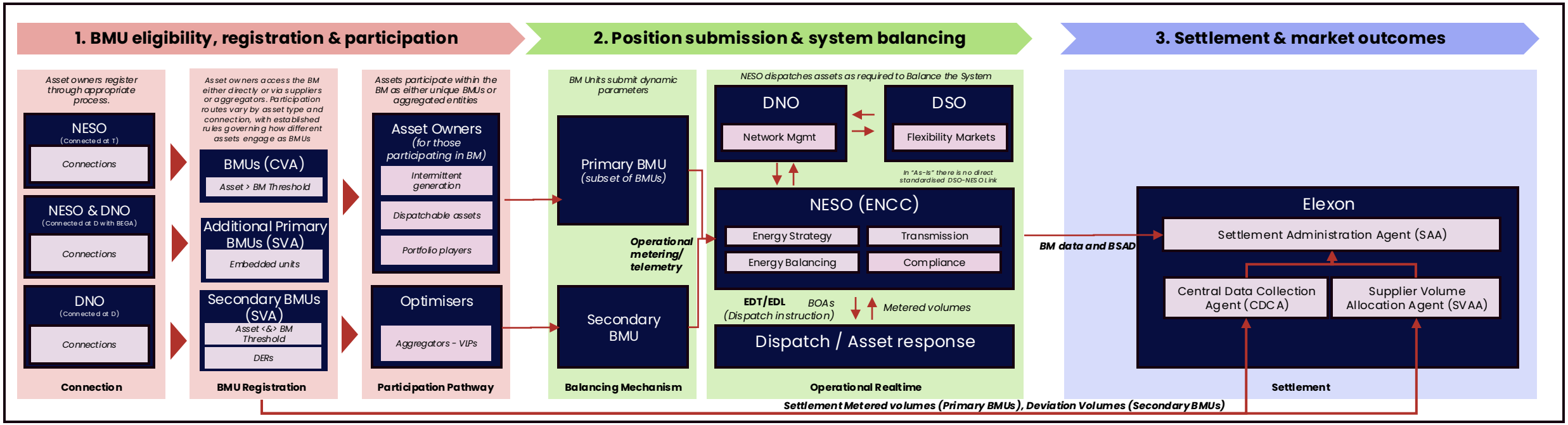
# LBM | As-Is Process Overview

Simplified As-Is diagram of information flows from participants that will be directly impacted by Lowering BM Threshold




*Assets meeting BM eligibility and technical requirements can register as BMUs and participate directly in the Balancing Mechanism, while smaller assets typically access the BM market indirectly via aggregators or suppliers.*

- Assets that meet Balancing Mechanism (BM) eligibility and technical requirements can register as participating BMUs through a BSC Party and submit bids/offers to NESO.
- Assets can participate through different pathways depending on their registration and metering arrangements, including direct participation and supplier or aggregator-led routes.
- Eligibility depends on factors such as connection point (transmission or distribution), asset capability, and compliance with technical and metering requirements.
- CVA BMUs use centrally registered metering systems (BSCP20), with current CVA registration processes largely manual.
- Assets that do not directly participate typically access the BM through suppliers or aggregator-led SVA participation routes (includes Supplier Additional Primary BMUs and Secondary BMUs).
- Elexon processes BMU registrations and maintains the central BMU register.
- BMU registration is a multi-party process involving asset owners, NESO and Elexon, creating onboarding complexity and scalability challenges.

*NESO receives dynamic parameters and FPNs from registered BMUs to inform system planning and dispatch, while coordinating with DNOs on distribution-level constraints — but has limited visibility of non-BMU assets.*

- NESO receives dynamic parameters of registered BMUs from T-24h through to Gate Closure (when an FPN is issued).
- NESO uses this information in Strategy timeframes to create System Operating Plans (SOPs) which are refreshed based on revised PNs. These include an estimation of generation from non-BMUs.
- SOPs inform NESO dispatch advice, which uses FPNs as a final physical baseline. NESO takes actions based on dispatch advice to ensure adequate margin and reduce any expected constraints.
- Where unit actual output deviates from FPNs, NESO may take additional actions/ unwind actions to ensure the system remains balanced.
- DNOs coordinate with ENCC over outages and key areas of network issues on the Distribution (D) network where there is an expected impact on Transmission (T).

*Elexon receives metered volumes from registered BMUs, calculates imbalance volumes, and applies cash-out pricing to settle positions — with CVA registration processes currently manual and limited in scale.*

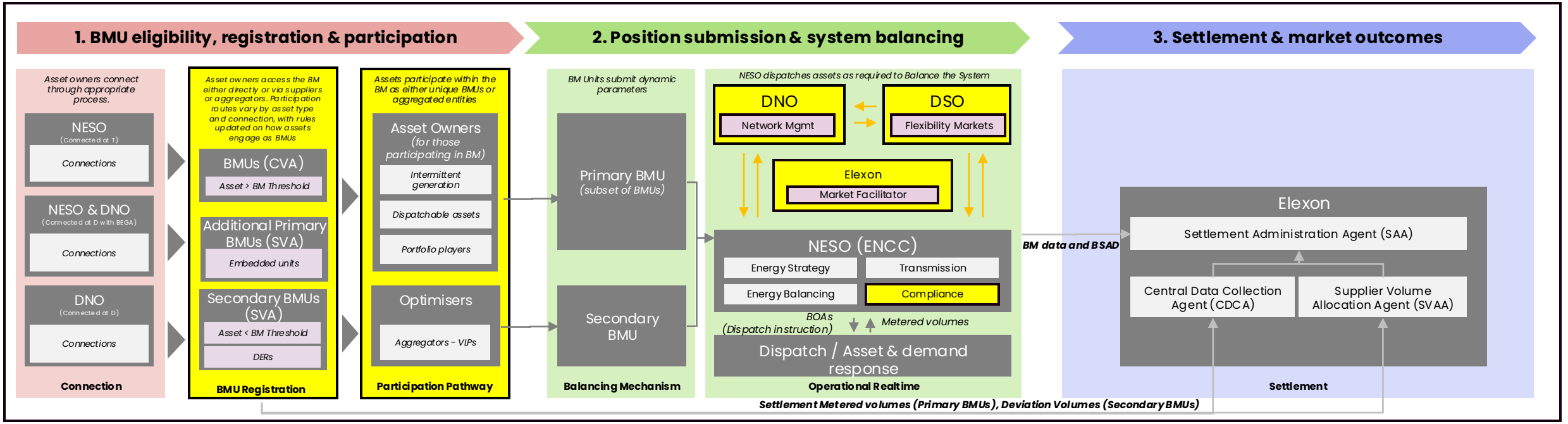
- Elexon receives metered volumes: CVA metered volumes are collected and processed by the CDCA, while SVA metered volumes are aggregated by the SVAA. Both feed into the SAA for Settlement calculations.
- BM activity data, including accepted Balancing Mechanism actions and Balancing Services Adjustment Data (BSAD), is incorporated into settlement calculations.
- The SAA uses metered and contractual data to calculate imbalance volumes for each participant.
- Secondary BMUs participate operationally in the BM, but the associated energy remains allocated to a Primary BMU for settlement purposes.
- SAA applies imbalance prices (cash-out) to calculate charges and settles positions.
- Elexon calculates imbalance volumes for each participant for each settlement period.
- Elexon applies imbalance pricing (cash-out) and settles positions for each settlement period.

# LBM | To-Be Process Overview

**Key**

- No functional change to core capabilities, business processes, systems architecture or technology components
- Functional change to core capabilities, business processes, systems architecture or technology components

## Simplified To-Be diagram of information flows from participants impacted by Lowering BM Threshold




| Key Change | Underlying Assumption | Key Change | Underlying Assumption | Key Change | Underlying Assumption |
|---|---|---|---|---|---|
| • Increase in volume of connectees requesting changes to their Connection agreements | • NESO Connections Team can scale to accommodate demand | • NESO processes and utilises a higher volume and granularity of data within strategy and operational timeframes | • Data-sharing infrastructure can accommodate increased data volumes and submission frequencies. | • Elexon conducts settlement calculations on an increased numbers of BMUs | • Systems are scaled to process the increased volume of settlement data resulting from wider participation. |
| • BMU registration process reformed to enable lower BM units to register in a streamlined process | • Processes redesigned to reduce fragmentation and increasing registration and testing throughput. | | | | |
| • A broader range of assets become subject to BM metering, operational and data requirements. | • Proportionate metering and compliance requirements are introduced for newly eligible assets. | • NESO increase their access to a sufficiently large and valuable pool of D-connected assets | • Primacy rules are defined by the market facilitator<br>• NESO's IT infrastructure adapts to meet requirements set by the primacy rules | | |
| • Licensing thresholds and exemption orders are redefined (e.g. reviewing BEGAs). | • DESNZ and NESO establish appropriate thresholds for newly in-scope, unlicensed generators | • New data-sharing arrangements created with DNO/DSOs & TOs | | | |
| • Participants build more granular physical and commercial position management capabilities to submit accurate asset-level data | | • Compliance, monitoring and assurance activities expand to reflect increased participation | • NESO has sufficient operational capability, resource and tooling to support enhanced monitoring | | |

Other assumptions: (1) Connections Reform changes are implemented prior to B&S go-live. (2) Market participation BMU routes remain unchanged (CVA BMU, SVA Primary BMU and SVA Secondary BMU)

# LBM | Market Participant Deep Dive

**Overall impact:** Requires affected market participants to operate at greater asset-level and time-level granularity, with changes concentrated in BMU onboarding, metering / telemetry, scheduling, trading, forecasting, settlement, compliance and contract processes. Impact scales with number of affected assets, current level of automation, reliance on portfolio optimisation and third-party service dependencies.

## Key impacts

### Information & data (ID)

- Sub-threshold asset owners must provide asset-level data and forecasts directly to NESO — hardest for intermittent generators with limited metering;

### Technology & systems (TS)

- Newly eligible assets must invest in BM-grade trading, dispatch and telemetry systems (CVA), with internal systems and trading processes reworked for assets never previously in the BM — the greatest gap for small intermittent generators.
- Participants with larger portfolios of small assets may need system changes to onboard and manage many more BMUs, including updates to internal trading, notification and asset-control platforms.

### Commercial outcomes & incentives (CI)

- At the smallest sizes (toward 10MW) BM revenues may not cover the CAPEX to implement and OPEX to trade, so net value can be negative without phasing or proportionate compliance and metering requirements.
- Existing assets (above-threshold assets) face more competition in the BM potentially changing the economics of the assets;

### Business model viability (BV)

- Aggregation and optimisation models may need to adapt where more assets participate directly or require asset-level visibility, reducing reliance on purely portfolio-level operation.

### Operational processes (OP)

- Operational burden is expected to be higher for smaller / distributed assets that have not previously operated within BM processes, especially where third-party onboarding or data services are required.
- The overhead of managing physical and commercial positions at finer granularity is excepted to add material operational burden, especially for smaller participants.

### Change & Delivery Burden (CD)

- Implementation burden scales with the number of affected assets, extent of metering / telemetry upgrades, BMU registration effort, contract touchpoints and third-party provider dependencies.
- Delivery complexity may increase where onboarding many smaller assets competes for the same internal delivery teams, registration processes, testing windows and external service providers

## Affected archetypes

| Groups | Archetype | Segmentation | RAG |
|---|---|---|---|
| Asset Owners | Intermittent generation | *Sub-threshold assets* | H |
| | Dispatchable Assets | | M |
| Suppliers | Portfolio Players | | M |
| | Independent B2C & B2B Suppliers | | M |
| Optimisers | Aggregators | | H |
| Assetless traders | Non-physical traders | *n/a* | |
| Consumers | I&C customers | *With Flex* | L/M |
| | Small Medium Enterprises | | L |
| | Residential consumers | | L |
| Third-Party | Technology Providers | *EDL/EDT providers* | L |

# LBM | NESO Deep Dive

**Overall impact:** Lowering the BM threshold would significantly expand participation in the Balancing Mechanism, requiring substantial changes to data flows, operational processes, systems, governance arrangements and compliance frameworks to support a larger and more diverse population of BMUs.

## Key impacts

### Information & data (ID)

- Significant increase in telemetry, metering and operational data volumes from newly registered BMUs.
- New data sharing infrastructure required between NESO, Elexon, DNOs and DSOs to support wider BM participation.
- New forecasting inputs and data quality controls required as assets transition into BM processes.
- Data ownership, primacy and governance arrangements need to be defined for distributed assets.

### Technology & systems (TS)

- NESO systems require enhancements to support increased BMU registration, compliance monitoring and dispatch activity.
- Network modelling tools may require updates to accommodate a larger volume of BMUs.
- Settlement and charging systems must be scaled to process increased transaction volumes.
- Potential upgrades required to support increased telemetry ingestion and operational monitoring.

### Commercial outcomes & incentives (CI)

- Increased access to balancing resources could reduce reserve holding requirements and improve system efficiency.
- Some ancillary service settlement processes may be simplified as more assets participate directly in the BM.

### Operational processes (OP)

- Significant redesign required across BM registration, compliance and connection management processes.
- Increased volume of BMUs will create additional operational activity across dispatch, forecasting and settlement functions.
- New processes required to manage embedded generation assets and associated contract changes. Customer engagement and support processes must evolve to accommodate new participant groups.

### Rules & Obligations (RO)

- New or amended registration, testing and compliance requirements required for newly in-scope assets.
- Clear governance and primacy rules required for interactions between NESO, Elexon, DNOs and DSOs.
- Existing connection and contractual arrangements may need revision to reflect BM participation requirements.

### Change & Delivery Burden (CD)

- Extensive process redesign, staff training and stakeholder engagement required prior to implementation.
- Additional headcount and specialist capability likely required to manage increased volumes and complexity.

## Areas of Greatest Change

| Capability (L2) | Capability (L3) | |
|---|---|---|
| **Forecasting** | Whole System Forecasting | M |
| | Operational Forecasting | M |
| **Operational Planning** | Network Access Planning | H |
| | Constraint Management | H |
| **Customer Experience** | Customer Relationship | L |
| **Strategic Energy Planning** | Network Owner Interface | H |
| **System Operation** | ENCC Strategy | H |
| | ENCC Operations | H |
| | Operational Coordination | H |
| | System support and insights | M |
| **Energy Markets** | GB Market Design & Reform | M |
| | Market Operations | M |
| **Connections Management** | Customer Registration | H |
| | Customer Application Management | H |
| | Technical Assessments | H |
| | Customer Commissioning | H |
| **Contract Management** | Charging/Billing Management | M |
| | Settlement | M |
| | Tariff Setting | L |

# LBM | ELEXON Deep Dive

**Overall impact:** Lowering the BM threshold increases the volume of BMU registration, standing data management, metering administration, settlement data processing and participant support activity undertaken by Elexon. The scale of impact depends heavily on the participation model adopted, as direct CVA participation requires more change.

## Key impacts

### Information & data (ID)

- Increased volumes of BMU standing data maintenance, BMU creation, BMU updates and associated registration records.
- Increased administration of Additional BMU and Secondary BMU registrations where newly in-scope assets participate via existing SVA routes.
- Increased settlement data volumes due to larger numbers of participating BMUs.

### Technology & systems (TS)

- Existing registration, standing data and settlement systems would process greater participant and BMU volumes.
- Registration processes may require increased automation if onboarding volumes increase materially, particularly where manual activities remain.
- Only if participation requires migration to CVA arrangements: existing BSCP20 registration processes, CVA metering administration and associated data flows could require material redesign and automation as current processes remain largely manual.

### Operational processes (OP)

- Increased operational effort associated with BMU creation, standing data updates and participant onboarding activities.
- Additional resourcing may be required where registration activities continue to rely on manual data entry and validation.
- Supplier Additional BMU and Secondary BMU registration routes are existing participation mechanisms designed to support larger populations of distributed assets, meaning impacts are primarily increased operational throughput rather than the introduction of new operational processes where newly in-scope assets participate through these routes.

### Rules & Obligations (RO)

- Depending on final policy design, if NESO introduces participation requirements, Elexon may need to amend configurations assurance to align with new requirements.

### Change & Delivery Burden (CD)

- Potential requirement to manage temporary operational resource during transition period.
- Only if assets must use CVA: significant delivery effort associated with metering upgrades, BSCP20 process redesign, CVA automation and assurance activities.

## Areas of Greatest Change

| Business Activity | |
|---|---|
| Registration Services & BMU Onboarding | H |
| Standing Data Management | M |
| Participant Onboarding & Support | M |
| Metering & Assurance | H/L* |
| CVA Administration | H/L* |
| Settlement Data Processing | M |
| Settlement Assurance & PAB | L |
| Settlement Systems | L |

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# LBM | Outstanding Questions

| Category | Question | RAG | Comment |
|---|---|---|---|
| | Will there be any limit to newly in-scope assets participating through aggregation / supplier additional BMUs?<br>*Working assumption that VLP / aggregation routes only open to new assets below 10MW. Existing assets above 10MW that are already aggregated can remain in their aggregated units.* | H | *As per NESO's policy update* |
| | What level of locational granularity is required to support operational decision-making?<br>*Working assumption this would be to GSP level* | M | |
| | If aggregation remains permissible, does the resulting visibility and controllability satisfy NESO's objectives? If not, does this reveal an issue with current arrangements or how assets that are smaller than the new proposed threshold being aggregated up will be treated?<br>*Note: Whilst GSP group aggregation is known issue with not aligning with constraint boundaries, it's assumed that the volumes are small enough to not impact operations significantly.* | M | |
| | How would a revised registration process and settlement arrangements work? | H | *To be discussed and included in the implementation timeline as an activity* |
| | What resilience requirements should apply to large-scale aggregation models and communication pathways? | H | |
| Exemptions | Will exemptions for demand be considered similarly to what they exist for generation? As well as proportionate metering and FPN requirements?<br>*Working assumption demand exemptions are similar to generation* | H | |
| | How does the policy interact with the exemptions order and asset types (e.g. CHP, EfW)?<br>*Working assumption these exemption orders remain* | H | |
| NESO/DSO | How should participants interact with DSO flexibility markets, primacy arrangements and revenue stacking rules? | H | *To be addressed as part of Primacy Arrangements work - Reform not dependent on changes (optional for maximum benefits)* |

# Breakout discussion

At the IEP we will have time to discuss the TOM and provide views.

Given previous feedback, we will assume IEP members have developed views in advance

- Are there any key points captured in these slides that you disagree with (for instance the underlying assumptions or deep dive impacts), and if so, how would you like to see them adjusted and why?
- Do you have any further information/evidence that would support or counter the content?