

### Context

As Ofgem progresses their technical workstream on a Flexibility Digital Infrastructure (FDI) they have asked for input from selected sector actors, which includes National Grid ESO, on a range of implementation options. This request included completing a System Use Case (SUC) Exercise template for the identified Business Use Cases (BUCs) of Common Asset Registration (BUC.2) and Common User Registration (BUC.4).

ESO are very supportive of the creation of an FDI and will actively engage, input, and support Ofgem in its development. So that we can provide the most value to Ofgem, we will look to support their requests in the most appropriate manner we are able to.

After careful consideration, ESO have decided that we will not complete the SUC Exercise template provided and will instead give the following reflections and input.

### Feedback on the implementation of a Flexibility Digital Infrastructure (FDI)

Based on the SUC implementation information provided by Ofgem, we would give the following feedback:

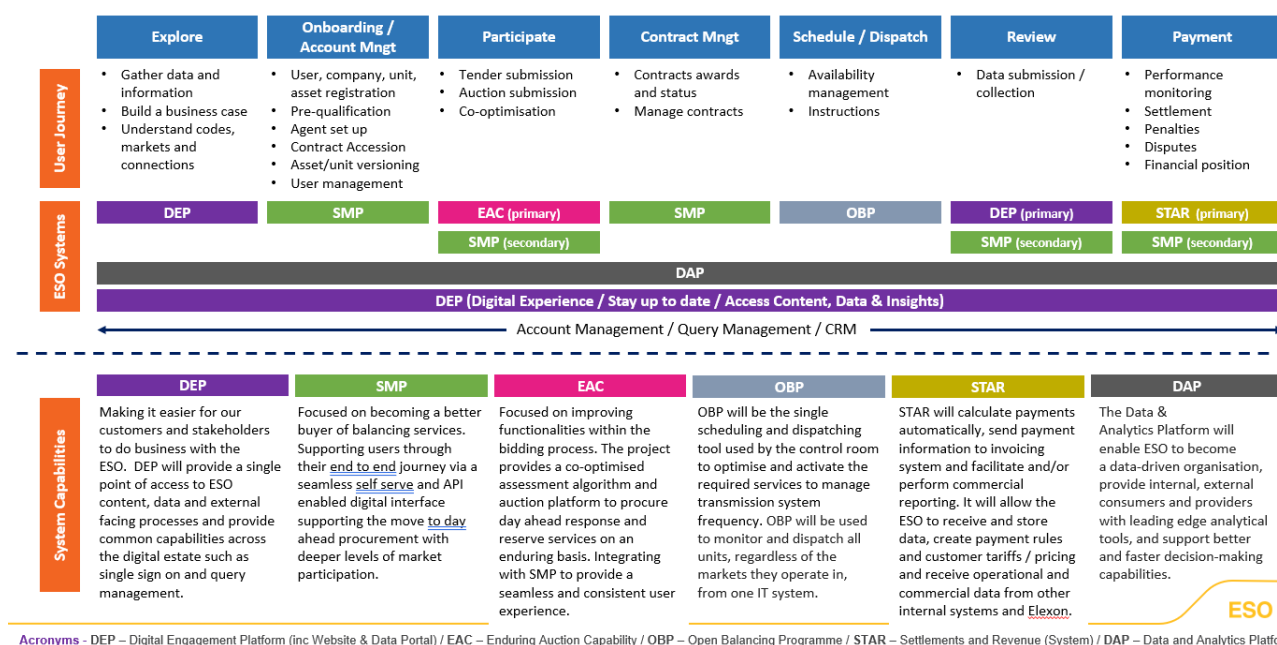
- ESO considers that secure and resilient data sharing at scale across the sector is an important enabler for the sector's digitalisation, in achieving the energy transition, particularly in enabling the growth of distributed and consumer flexibility that are numerous and diverse by nature.
- Efficient data sharing is necessary in both our current role and our future roles as NESO.
- We consider that a suitable sector digital governance model and trust framework is required to enable this success.
- We are supporting the development of an energy sector Data Sharing Infrastructure (DSI) through our Virtual Energy System Programme, which we are undertaking openly and in collaboration with the sector and government.
- We consider that flexibility is a key use case of the DSI, and that the FDI would provide use case specific requirements and tooling that is built on top of the core DSI, such as data frequency and granularity. The FDI is therefore not a separate entity or infrastructure to the DSI.
- We are supportive of activities that enable better data sharing and coordination among system operators (SOs), and between SOs and assets which improves system security and resilience, increases market liquidity, and ultimately benefits consumers.
- We understand from flexibility providers that the key challenges of local flexibility include the lack of coordination and standardisation of flexibility services (among DSO-DSOs and between DSO-DSOs), and barriers-to-entry for new and distributed energy technologies in certain ESO services.
- We believe the above requirements should be addressed in collaboration with network companies, system operators and market participants (such as flexibility assets, aggregators, suppliers, and platform providers) to ensure that solutions meet the changing market needs and can be easily iterated. ESO have received feedback from flexibility providers that the simplification and standardisation of asset registration is an important enabler in encouraging flexibility participation.
- The “*Prepare*”, “*Trust*”, and “*Share*” functional components of the DSI, put forward by the Digital Spine Feasibility Study and referenced in FSNR and the SUC Exercise materials, suggests that:
  - The DSI is a decentralised model for the secure and resilient sharing of data.
  - The “*Prepare*” function, or data preparation node, is a commonly structured component that is deployed on an organisation's own IT infrastructure, and that these ‘*organisations*’ could be market or use case specific services, such as flexibility service(s)/market(s).
  - The “*Trust*” function, or trust framework, provides several legal, identity, and authentication functions, such as user registration.
  - The “*Share*” function, or data sharing mechanism, will contain the minimum possible common services or components necessary for the DSI to efficiently and effectively to function, like a central data catalogue and certain system use case specific tooling such as a common asset register.
  - In this context, there could be a preference, aligned with best practice and the efficient and effective operation of the DSI, that provides common services or components for flexibility that would benefit all system participants, and facilitates the creation of flexibility service(s)/market(s) to operate as ‘nodes’.

- The preference for the exact implementation would therefore be driven by maximising market participation and liquidity and delivering system security.
- In advance of work commencing on the DSI and the FDI, the ESO was required to make progress in the digital space to recognise that our markets were already in a state of flux. This was evidenced by the move to day ahead procurement and the increasing participation of smaller aggregated assets connected at the distribution level. As a result, we proposed to develop our Single Markets Platform (SMP) a key deliverable within RIIO-2 to centralise ESO market onboarding and contracting. As part of this programme, we are currently conducting a proof of concept of MPAN matching to manage risk of conflict with an DSO (see below) which we hope will help inform how work in this space can progress in the future.

### Single Markets Platform (SMP) Proof of Concept (PoC)

SMP is a key digital deliverable within RIIO-2 and is being developed to support a seamless and consistent user experience in facilitating participation in ESO balancing service markets.

SMP sits within a suite of ESO systems that support the end-to-end user journey as detailed below:



SMP is being developed in an agile way with a “progress over perfection” mindset that has resulted in multiple releases since its initial go live in February 2022. The initial focus has been on supporting the onboarding and contracting processes for a series of day ahead markets such as the Dynamic Frequency Response products.

Onboarding includes the registration of users, companies, assets, and the creation of Units (made up of single or multiple assets) that can then seek pre-qualification for a number of products prior to acceding to generic and specific contract terms. SMP now also hosts the Demand Flexibility Service (DFS), Static Firm Frequency Response, the initial Regional Development Programmes (RDP) and the recently approved Balancing Reserve product. Work is under way to host the future Reserve products.

Alongside enhancing user (internal and external) functionality, which is prioritised in monthly “Show and Listen” user webinars, and integration with other ESO systems SMP is also actively engaging with the DSO / Flexibility community. This is recognised to be an important approach considering that an increasing volume of participating assets in ESO balancing service markets are connected to the electricity network at the Distribution level. These assets may be exposed to a condition of connection or the opportunity to participate in other Flexibility markets resulting in the need for ESO / DSO integration.

SMP is ideally placed to be involved in such work as it is the only system where all assets are recorded that are participating within Balancing Service products. SMP requires that asset level data is updated via a Graphical User Interface (GUI) or Application Programming Interface (API) prior to assets being allocated to a “Unit”; it is the Unit that is then shared with all downstream systems for participation in auction, potential contract award, scheduling and dispatch, performance monitoring and settlement.

In support of the ambition to integrate more closely with DSO / Flexibility markets SMP have led on the development of a proof of concept where MPAN data is being matched to determine potential risks of conflict between DSO and ESO commitments.

This proof of concept is being run in Spring 2024 and seeking to inform how greater levels of visibility and interaction between DSO flexibility markets and ESO balancing markets can be facilitated in the future.