

By e-mail to: flexibility@ofgem.gov.uk

Ofgem
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23rd September 2024

Dear Euan Kirkmorris

Ofgem Consultation: Flexibility Market Asset Registration – Capgemini Invent response

Capgemini Invent welcomes the opportunity to share our views on Ofgem's 'Flexibility Market Asset Registration' consultation.

Capgemini Invent is the consulting, innovation, and digital business of Capgemini. Capgemini is Europe's largest supplier of systems and technology services to the Energy and Utilities Sector. HFS Research have placed Capgemini second globally in their list of business and technology service providers to utilities. Every year we publish the World Energy Markets Observatory (WEMO)¹, the 25th Edition of this was published in November 2023, with the 26th Edition to be published in October 2024. The 25th report consists of 400 pages of detailed analysis and insights on world energy trends, with a focus on security of affordable energy within the global context of a series of successive crises that impact supply, pricing, and consumer behaviour.

We also provide wider services that cover net zero consumer strategy, development of new market services, smart metering implementation, consolidation, harmonisation and digitalisation of retail market codes and wholesale markets. Furthermore, in 2022 we established the Energy Markets 2030+² working group, which involved collaborating with senior cross-industry representatives over a 10-month period to define the future energy system. This has produced a compelling vision for the future that is based on a broad consensus of how the energy system should work.

In responding to the questions outlined in the consultation, we have provided key observations and recommendations as follows:

- We support Ofgem's proposal to introduce a Flexibility Market Asset Registration (FMAR) service and agree that it could aid a broader range of consumers to realise maximum value from their assets.
- We have concerns that the overall approach taken to the implementation of new energy sector digital services (e.g. FMAR, Data Sharing Infrastructure (DSI), Consumer Consent Portal, Digital Spine) is lacking a shared vision and holistic planning. As such, we believe there is a heightened risk of downstream interoperability challenges and technical debt.
- The engagement approach taken to energy sector change programmes and policy initiatives appears to be too narrow and is not targeted at a fair representation of the future energy systems diverse stakeholder group (e.g. flexible asset manufacturers, third/party tech companies, consumer groups). This, and future proposals, are like to require a much broader range of input from parties outside energy system governance that may not be familiar with the consultation/call-for-input process.

We have outlined these considerations in more detail in 'Appendix 1 – Executive Summary' and welcome you to review our thoughts and opinions on this topic. I hope you find these insights and suggestions helpful and if you would like to discuss any areas of our response, please do not hesitate to contact Michael Taylor³, Ranbir Singh⁴ and/or April Louise Harbour⁵.

Yours sincerely,

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¹ Capgemini (2023), World Energy Markets Observatory Report 2023

² <https://www.capgemini.com/gb-en/insights/expert-perspectives/defining-a-unified-vision-of-the-uk-energy-market-in-2030-part-1/>

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Appendix 1: Executive Summary

Capgemini Invent are in support of the digital spine energy system vision and view a Flexible Market Asset Registration (FMAR) system as a core connecting service. Ensuring that flexibility market processes are simple and easy to access will be an essential part of unlocking full-chain flexibility. This is particularly important as optimised flexibility markets will require participation from a new, diverse set of stakeholders that may not be subject to currently energy system governance, or regulatory frameworks.

In this executive summary, we have outlined a few concerns that we have on the approach taken to the digital spine and some further insights on FMAR.

FMAR Vision Statement

We strongly believe that ahead of progressing to the FMAR solution it is necessary to define a clear vision statement. This ensures that subsequent decisions contribute towards an optimised, cohesive solution that is integrated within a larger digital energy system. As such, we are interested in understanding the following:

- What are the main goals and objectives for flexible asset registration and how do they contribute towards overall flexibility market objectives?
- What are the measures of success?
- What benefits will be provided to the industry?
- How do we ensure consumer participation, what are the incentives?
- How will this provide value for the consumers?
- How will this differ from prior registration/database systems?

Although we appreciate that the consultation document and the Future of Distributed Flexibility (2023) call for input covers aspects of the above questions, we believe further clarity is required to ensure the industry is aligned. A key aspect for this is the 'measure of goodness' which is a tool for defining what needs to be implemented to provide a positive change for the energy market. Some examples might include:

- Creating the motorways (i.e. pathways) for parties to access/share data in an efficient manner
- Improve the quality of data for the system integrator, reducing balancing costs
- Assist with flexible pricing support
- Reduce consumer bills and improve vulnerability support

To reiterate, we are in support of the FMAR proposal but believe that as a starting point it is critical to clearly define the future energy system use-case and needs, such that an approach that delivers the required benefits can be progressed.

Digital Spine Cohesion

In our response to the Data Sharing Infrastructure (DSI) consultation, we highlighted some concerns with the overall approach taken to digital spine implementation. We have attached our response to the DSI consultation within this submission for reference and have summarised the key themes below.

There are currently three consultations being progressed on digital services that will connect to or form a part of the digital spine (DSI, Consumer Consent Portal and FMAR). We are concerned that the current preferred approach of integrating services through independent workstreams introduces an increased risk of downstream interoperability challenges. As such, we believe it would be beneficial to employ a 'right-to-left approach' by first defining the central use-case and vision for the future energy system digital infrastructure, so that connecting services can be designed effectively. If the digital spine is to be a 'physical system' that services connect to, rather than a set of data sharing standard, we strongly recommend that clear onboarding rules are defined as priority to reduce technical debt of connecting services.

Furthermore, the current lack of whole digital service architect, holistic ownership overall system vision and delivery responsibility introduces uncertainty as to how, or when micro-services will be integrated. We believe this needs to be assessed in the immediate term, as it will ultimately impact the overall timescale for creating an operable digital spine.

As such, we believe that introducing a taskforce to provide clarity of vision, policy framework and central use-case of the future energy markets, with a delivery body with overall accountability for the digital spine and coordinating microservice delivery should be progressed as soon as possible.

Delivery Approach

We agree that introducing a FMAR is an important step in ensuring a broad range of consumers can benefit from a flexible energy system. Yet, unlocking domestic level demand flexibility represents a significant behavioural shift. It is likely to introduce several system, market and consumer protection risks, particularly where new market entrants introduce behind the meter asset automation.

It is essential that risks are well understood and that market design, including regulation and market entry rules are robust to mitigate new and potentially unforeseen risk manifestation. Adopting an approach that balances the implementation of robust flexibility market processes and regulation, whilst ensuring overall market design remains sufficiently simple will be critical in unlocking the optimal system and consumer benefits.

Whilst we are in favour of re-visiting the vision and central use-case for the overall energy system digital infrastructure, we recognise the benefits of adopting an iterative implementation approach to new services. For instance, progressing a first phase of FMAR that targets registration of larger assets (e.g. over 1MW) across both transmission and distribution networks may allow for additional time to effectively design and implement controls for behind the meter assets, such as licensing domestic level asset owners. If paired with a clear central vision, this approach may reduce the likelihood of risks, such as market gaming occurring, whilst continuing to deliver required digital services at pace.

As with all asset management systems, maintaining a high standard of data quality will be crucial to the success of this proposal. Data quality has traditionally been an area of concern for the UK energy market. Lessons should be learned from the smart meter roll-out, which had an overcomplex design and subsequent interoperability challenges from the offset. Taking appropriate steps during design and implementation phases, we have an opportunity to ensure that the digital services that will underpin the future energy market are not plagued by the same issues.

As discussed above (see Digital Spine Cohesion), we have concerns that there is an apparent lack of central coordination across new digital energy services, including those being progressed within the flexible asset registration space. We are keen to understand how the current work progressed under the NZIP Automatic Asset Registration (AAR), notably the Central Asset Register (CAR), will integrate. At a minimum, steps should be taken to ensure alignment across data requirements and avoid assets being registered on multiple systems. A simple, 'one-stop-shop' for asset registration, flexibility market access and consumer/asset owner consent must be the priority.

We assume that one of the first responsibilities of the Market Facilitator will be to harmonise digital flexibility projects. Yet, we believe the market would be encouraged if Ofgem, or Elexon, would provide further clarity on how current and future flexibility projects will be governed, how the Market Facilitator will ensure holistic oversight of digital flexibility projects, and how flexibility services will be integrated with the wider energy system digital architecture (e.g. digital spine, consumer consent, DSI).

Capitalising early on the synergies between other digital service projects being progressed excellent opportunity for tackling wider system challenges. For example, an integrated, single-sign-in consumer consent portal could be leveraged to improve identification of vulnerability and penetration of energy support schemes.

Cross-sector Insights

Unlocking full-chain flexibility is a new challenge for the energy sector that will introduce a diverse set of new stakeholders and may require a significant consumer behavioural shift. It is likely that the governance and leadership model required to effectively tackle this challenge may not be atypical of the energy sector to date. We advise that Ofgem looks at examples of how other sectors to managed large transitions, such as the adoption of mobile phones/mobile data in the telco sector. Insights on how different sectors set-up, deployed regulatory changes, adopted new governance models, and which KPIs were tracked will increase the likelihood of us getting it 'right first time'. Furthermore, new flexibility roles, such as the Market Facilitator, may require additional expert support to ensure that it has access to the capabilities and insights required to design optimal rules and processes.

Stakeholder Management

We are interested to understand which stakeholders have been engaged up until this stage of the proposal. We have concerns that the current stakeholder management approach for energy sector change programmes and policy/regulation development is too narrow and focuses engagement with a small set of incumbent central parties and market participant.

The energy transition is now widely acknowledged as being a whole system challenge, that will impact almost every part of the economy. However, we are yet to adopt a whole system approach to our stakeholder engagement. For example, in progressing flexibility market change there should be a greater emphasis on engaging with new market participants, such asset manufacturers (e.g. Siemens, GE, Bosch etc.), consumer groups, and third parties/tech companies that will likely trade flexibility services (e.g. Google nest, microgrid system operators, VPPs etc.). Ensuring a diverse stakeholder input will be a critical component of developing a robust flexible asset registration service, market design and regulatory framework.

Another group we believe should be targeted for engagement are asset installers and installation accreditation bodies. Aligning asset installation accreditations (e.g. MCS solar panel accreditations) will ensure that the workforce is sufficiently prepared to accurately capture asset data upon installation.

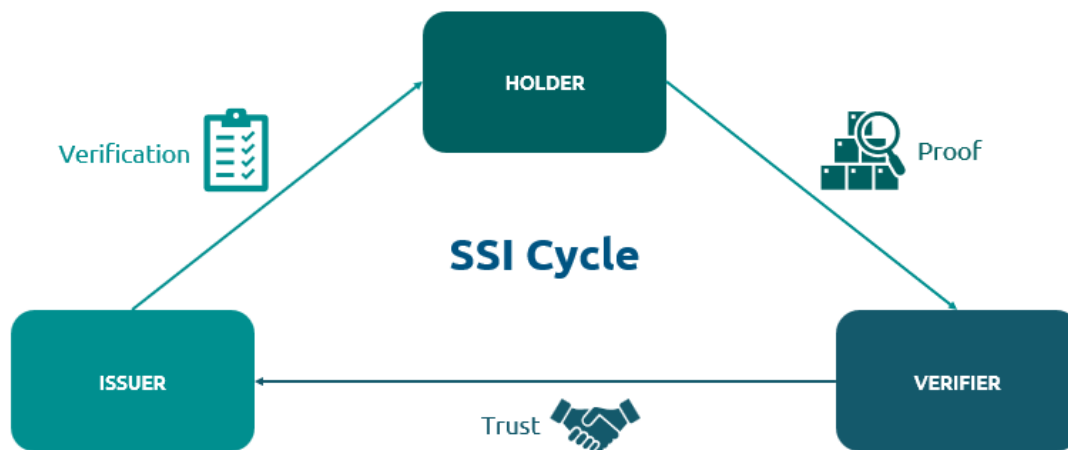
Whilst it may not be practical to elicit active engagement with all stakeholder groups, ensuring there are clear communications with impacted stakeholders. This will be critical in avoiding downstream complications, such as those experienced in the EV charger roll-out, where customers were unaware that they needed to inform the DNO post-installation.

Insight from Europe

In addition to the European examples highlighted within the consultation document, we would like to draw attention to a study in Belgium and Germany, that looks to simplify and automate asset registry using Self-Sovereign Identify (SSI) keys. SSI keys provide a mechanism for decentralised identification and verification of assets, which relies on scanning tags/QR codes installed on assets during the manufacturing stage (working in a similar manner to identification cards/passports). Paired with a tool to automatically loaded into an asset registration platform, it can remove the need for manual data retrieval, and increase security rigor around data collection and transfer processes.

The solution architecture for the SSI scheme, identifies three core roles within the solution.

- **Holder:** a user or identity owner who is responsible for managing their own data
- **Issuer:** responsible for issuing verifiable credentials, which are directly linked to a holder's identity
- **Verifier:** (or requester) of identity related data. Verifiers request Verification Certificates (VCs) based and confirm the identity as part of a process known as a Verifiable Presentation (VP)



These roles have the powers to provide unique identification information, request identification information and consent to that information being provided in a streamlined and simplified manner.

Whilst the use of SSI for flexibility assets study is still in its discovery phase, it has flagged several insights that will be relevant to the UK energy sector. Principally, the study has highlighted complexities with how to ensure participation from asset manufacturers that are based outside of the regulatory jurisdiction of the EU. As a service-based economy, the UK will encounter similar challenges when importing net zero technology.

Whilst regulatory standards can be applied to imported goods, reliance of foreign manufacturers is likely to limit our ability to progress innovation projects, such as SSI. This is not a challenge limited to flexibility assets only but is likely to impact the wider energy transition. We recognise that similar challenges are being investigated in the Smart Secure Energy Systems (SSES) programme and look forward to seeing the outcomes.

Delivery body options

In our response to the Data Sharing Infrastructure (DSI) consultation, we discussed adopting a right to left implementation approach to the digital spine and energy sector digital services (e.g. DSI, consumer consent). Once a shared vision has been defined, the task of selecting a suitable delivery body that has the right capabilities and management structures to deliver the intended outcome becomes significantly simpler. It should be recognised that a different type of organisation may be more suitable to deliver these requirements than the energy sector central bodies that are typically chosen.

Potential Risks

Whilst we support the progression of FMAR and wider flexibility market changes, we would like to bring Ofgem's attention to several flexibility market risks. Obtaining early visibility of registered asset operators will be key in monitoring trading behaviour across flexibility markets and mitigating 'gaming'. Operators that are controlling large volumes of behind the meter assets may be able to artificially create demand/supply needs and inflated market prices through asset behaviour manipulation. Equally, ineffective market pricing may cause assets that can trade in multiple markets behave in a way that causes rapid demand/supply swings. As such, ensuring alignment and a pricing model that ensures assets contribute to electricity system stability will be essential.

We also view the electricity centrality of flexibility markets and the wider energy transition as a potential risk. Whilst electricity network balancing is and will remain a core component of flexibility, we believe it is important that the transfer of energy into different states is understood as a critical enabler of storage and flexibility. We need to understand the flexibility requirements of different existing energy vectors/technologies (e.g. heat networks, hot water tanks), whilst ensuring we do not discount future vectors/technologies (e.g. compressed air, chemical bonded storage). Adopting a whole system approach to flexibility will be key essential in designing an optimal market.

Conclusion

We support Ofgem's proposal to introduce a Flexibility Market Asset Registration service and agree with the premise that it could aid in allowing a broader range of consumers to realise the maximum value from their assets. However, we strongly recommend that Ofgem re-visits the overarching vision and policy framework for the future energy sector digital services, such that there is clarity on roles, responsibilities and overall architecture. For the avoidance of doubt, we recognise that additional policy intervention will be necessary in the future to address factors that cannot be predicted at this stage. Moving quickly on the introduction of a taskforce to define the above will likely accelerate cross-service implementation and bring the benefits realisation period forward.