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Octopus is a leading energy technology company, harnessing the power of Kraken, which connects all parts of the energy system, from customer billing to flexible management of renewable generation, energy storage and consumer devices such as EVs, home batteries and heat pumps. Our mission is to use technology to deliver Net Zero in a way that benefits customers. We recognise the significant value of data in delivering this vision.

On this basis, we support efforts to improve transparency and data sharing across the industry. Reduced friction in transferring data between market participants will accelerate the energy transition and reduce costs for customers. We see a clear positive use case in the development of energy flexibility markets, where we expect to see an exponential growth in the number of assets, competitors and volume of data transferred. We also recognise that standardised data transfer/access could support a wide range of current policies and programmes, including market registration, energy smart appliance use and optimisation, and low voltage network visibility and optimisation.

However, we have some concerns about the risks of delivering the Data Sharing Infrastructure (DSI) as currently proposed, which may not be well managed through the governance measures set out in this consultation. The main risks are:

- **Risk of building an obsolete product:** Data requirements and enabling technology is changing fast. Building a solution on a long term plan with a 3-4 year lead time risks sinking customer funds into development of a platform that is out of date at the point of launch.
- **Risk of failing to successfully facilitate ever expanding use cases:** Data preparation nodes, standardised formats and security/sharing/trust protocols may be radically different between different datasets, users and use cases. Whilst we generally agree with the pilot and MVP use cases identified, successfully expanding beyond these into multiple additional use cases simultaneously could be very challenging. This is especially true when expanding from facilitating sharing between a small number of highly regulated network companies to a vast number of decentralised flexibility providers or energy suppliers.
- **Risk of higher net spend by under-utilising existing solutions with lower customer cost:** Many data challenges in the sector can be solved today with better use of existing technology and/or stronger regulatory incentives or enforcement of existing obligations. Placing development of a DSI on the critical path for solving these issues risks delaying resolution, at real customer cost and risk to delivery of Net Zero.

To mitigate these risks, our recommendation is that Ofgem and the DSI coordinator take a more focussed, short term and agile approach to delivery of the DSI. That is not to say that the coordinator would not factor future potential use cases and value into its thinking and decision making. However, instead of taking years to create a future-proof architecture and product it should move at pace to solve specific use cases and use an

open source development protocol to evolve along with technological and market developments. This approach compares to current proposals as follows:

Ofgem’s proposed ‘Centralised’ approach	Agile/iterative approach
Start with MVP then move to full build for wide range of use cases	Start with MVP then identify one further use case to execute and secure incremental customer value
Cross-industry forum with range of stakeholders to engage	Focussed engagement with specific users who benefit from next use case
Centralised procurement of build by a coordinator to contractor(s)	Maximum use of open source protocols to enable users to also expand use cases where they see direct value
DSI becomes default data sharing tool across sector	Lowest cost and most readily available sharing tool used by default

Section 2 Questions

Q1. Do you see potential uses for the DSI within your day-to-day operation in the energy sector?

We can identify many use cases where better data access and utilisation would improve outcomes for customers:

- Sharing operational data with NESO when participating in balancing services;
- Supporting decentralisation and flexibility in the power system with data use;
- Supporting NESO in spatial planning through distribution level data;
- Helping NESO/DNOs in assessing generation connection needs and optimal locations;
- Helping NESO with locational pricing and procurement of flex services using distribution network capacity data;
- Enhancing connectivity and coordination between TSO and DSOs for better decision-making;
- Using test data to expedite the connection process by demonstrating real-time asset performance;
- Improving accuracy in asset de-rating through better data transmission and site-specific insights;
- Facilitating data sharing across flexibility service providers; and
- Facilitating data access for energy smart appliances.

However, our current view is that lack of a centralised data sharing infrastructure is not always the limiting factor in improving data and digitalisation outcomes in the sector.

Whilst a fully functional DSI could streamline interactions for large volumes of distributed market participants, the priority use cases identified for outage management, connections and strategic planning involve data transfer between a limited number of DNOs, TOs and the NESO. Delivering improvements here is a tractable issue with data

standards (e.g. CIM/IES), transfer protocols (e.g. API/open data portals) and data sharing agreements for existing processes in use today.

We agree that data transparency between these market participants should be improved as a priority. However, we are concerned about relying on development of a DSI, a major sector-wide digital infrastructure program, to solve this issue. Doing so risks increasing complexity, cost and timelines to deliver improvements. For example:

- On connections, a single digital view of connections for market participants was committed to by Ofgem/DESNZ in the November 2023 Connections Action Plan. Given the scale of the connections crisis, this must be delivered as a matter of urgency, not as a DSI use case to be planned by the end of 2025.¹
- On strategic planning, timelines have already been delayed for the CSNP and SSEP. Placing any DSI build on the critical path for these documents risks further delays.

As well as waiting for DSI delivery to improve outcomes, Ofgem should drive higher enforcement standards on existing data obligations and work with network companies to increase the pace of execution with the data sharing tools we already have in place today.

In parallel, development of the pilot and MVP of the DSI should continue with a laser-focus on specific use cases that will create customer/system value once solved, and which cannot be solved more easily/efficiently with existing technology.

Q2. Do you have any comments on the funding mentioned within this section?

Utilising RIIO innovation funding to date is reasonable as a way to advance development using existing mechanisms. In the short term, NESO cost pass through is also reasonable, but with the need for strong oversight to mitigate risk of cost/timeline slippage during delivery.

The original Energy Digitalisation Taskforce proposal rightly recommends that the DSI 'is developed as a totally independent project with no commercial interests'². Using a commercial entity to do the actual delivery risks creating perverse incentives for said entity to increase the complexity and resource-intensity of build required.

Releasing funding through a cost pass through mechanism also means there are no clear incentives for NESO to minimise the amount of customer money spent on DSI build.

Ofgem must therefore have robust oversight of any procurement and contract management processes and should exercise proportional cost assessment/benchmarking tests on cost against comparable software builds in other industries.

Over the short and long term, the level of central software development required should be kept as light as possible, with reliance on open source protocols fulfilled by system users based on the benefits available from using the DSI. This will minimise costs to

¹ Timeline stated on consultation document p.23

² <https://esc-production-2021.s3.eu-west-2.amazonaws.com/2022/01/ESC-Energy-Digitalisation-Taskforce-Report-2021-web.pdf> p.32

customers that need to be socialised through network/system charges. Creating additional costs or charges for users will disincentivise use of the DSI and risk undermining growth of competition in nascent flexible and decentralised energy markets, which often already have tight margins.

Crucially, Ofgem and DESNZ must oversee delivery with a robust view of value for money throughout. This will be made easier through an iterative and user-focussed release cycle, which (as set out above) we see as preferable to a long build phase covering multiple speculative use cases. Such an approach would allow build and associated cost accumulation to pause after each use-case is delivered, giving a chance for NESO/Ofgem/DESNZ to understand who is actually using the DSI and whether it is creating real value for money now, and how this might value might evolve as the market and use case grows.

Q3. Do you have any comments on the timeline shown?

We broadly agree with the process and timelines set out for the pilot and MVP, with the important caveat that these projects must not delay progress on addressing other urgent issues faced today by market participants interacting with the networks (see Q1 above).

Once the MVP is live, the focus should then be on feedback and iteration to judge the value in expanding to more use cases or market participants. Use of open source technology can also allow for the system to evolve organically, reducing the need for centralised development. On this basis, setting out a 6+ year roadmap is unnecessary. The project should focus on short time horizons, lean delivery and constant iteration through user engagement to minimise the risk of customer money being wasted. This approach will also help forge alignment across DESNZ, Ofgem and the NESO policy and programmes that are influencing what data is produced, collected and used.

Section 3 Questions

Q4 / Q5: Do you agree with our short-term governance structure model where the Interim DSI Coordinator is responsible for leading the short-term governance (2024 – 2028) of the DSI? If not, state your reasons and propose an alternative governance model or improvements to our proposed solution.

We agree that an entity needs to manage delivery of the MVP and oversee some centralised functions on an ongoing basis. This role would be analogous to that of the Open Banking Implementation Entity (OBIE) in the Open Banking context. We broadly agree with the 'essential short term governance requirements' set out in the consultation on p.28.

However, governance obligations placed on this entity should be kept as lean as possible by:

1. Iterating through use cases beyond the MVP only when and where there is clear user need, rather than embarking on a major multi-year build program with the associated extra governance burden (e.g. for programme management, cost control, reporting, stakeholder engagement). Stakeholders to other government

policy and programmes that might call on this infrastructure should scrutinise and support decision making on future use cases.

2. Maximising decentralised governance through open source software protocols. Once an MVP goes live using open source, other system actors can use standardised core infrastructure to develop new DSI capabilities where it is useful for them. This process has been a core principle and success in Open Banking. Open source software is fully transparent, enabling scrutiny from a wide range of stakeholders without the need for formal governance channels. Open source development can also allow for governance features such as audit trails, consents and security to be implemented as part of the underlying code, rather than relying on a single organisation to implement.

Over time, governance structures can also evolve to stay aligned with how the DSI is actually being used by market participants. Starting quickly with a focussed governance structure is preferable to spending >1 year designing a governance structure to last to 2028 or beyond.

We agree that robust input and oversight from Ofgem will help reduce the risks set out on page 1 above of overbuild, misalignment with use cases and failure to utilise the lowest cost solution.

Whilst having input from industry experts is useful, the stakeholder advisory group(s) should be kept lean with membership focussed on the specific users of the next use case being delivered. This will help the solution delivery keep moving at pace and ensure real user input shapes the design from an early stage.

Q6. Are there any additional governance roles that are not covered by the proposed governance model? If so, what are these?

As set out above, governance should be kept as streamlined as possible between the delivery body/DSI coordinator, Ofgem oversight to protect customer interests and value for money, and a route for feedback from users. Over time, good use of open source software principles will also enable decentralised/self-governance from users of the DSI infrastructure. This will reduce the burden of additional governance roles required from users or the delivery body.

Within this streamlined structure the coordinator also needs to have a clear decision making/appeals process. This includes creating and managing a decisions log that will keep a clear record of all decisions made and why. This would naturally be part of the knowledge function.

Q7. Do you agree with the responsibilities of the interim DSI Coordinator? Are there any additional responsibilities that it should undertake?

Those mentioned are reasonable but with the following considerations:

- Industry engagement should be focussed on users for the next use case being developed, rather than being cross-industry/stakeholder by default. A large engagement group would be unnecessary and slow progress.

- The interim DSI coordinator should be responsible for justifying early use cases selected for build out using customer funds. These justifications should provide a solid reason why the DSI is needed, explaining why existing tools cannot be used at lower cost. This should also include a technology assessment as referenced in paragraph 3.12 bullet point 4. This is crucial for avoiding wasting customer funds. Ofgem must play a key role in scrutinising these justifications. Comparison with best practice and other systems used in international markets or other sectors may help with this justification.
- Maximising use of open source, decentralised governance should be an explicit responsibility for the interim coordinator from day 1. This should minimise the need for annual reports on potential future use cases, instead allowing users to define how they use the DSI and crowding in third party innovators to develop the DSI code base where the infrastructure is a genuine value add for their operations.
- Providing transparency on decisions made with customer funds, particularly in relation to sub-contracting/outsourcing arrangements, should be an explicit responsibility, particularly at an early stage where more centralised build is required and where risk is higher.

Q8. Do the proposed deliverables reflect the outputs that the Interim DSI Coordinator should focus on in the initial DSI stages? Do you suggest any additional deliverables?

There is relatively little detail on specific deliverables in relation to software development in the consultation. We expect that the DSI coordinator will drive development forward with Ofgem oversight to answer questions on outputs including:

- How will decisions get made?
- Who will be responsible for approving those?
- How are risks managed, particularly in relation to prudent use of customer funds?
- How will user groups operate and be selected?
- What products are needed overall (e.g. roadmaps, timelines, risk logs, decision logs, decision process, checks and balances)?

Crucially, we urge Ofgem and the DSI coordinator to undertake technology assessments early and as part of the justification for selecting new use cases, rather than for publication 1 April 2028. This is far too late and risks the solution not taking into account rapid technological developments that are disrupting established practices on data management/sharing. In particular, advances in Gen-AI are enabling users to transform datasets with significantly less manual processing. This is reducing the value add of dedicated protocols to standardise data formats and we expect the value of Gen-AI to increase over time. Design and build of the DSI must take this and other technological innovations into account to mitigate the risks discussed throughout this response.

Section 4 Questions

Q9. Do you agree with us that the System Operator is the best option as the Interim DSI Coordinator? If no, explain your reasons and justify your proposed option.

In addition to Ofgem’s list, we emphasise two important criteria that Ofgem should consider in assessing the options for the DSI coordinator role:

1. Digital delivery capabilities: Ability to design/coordinate the design of and deliver digital/software tools on time and on budget must be a crucial consideration for assigning the DSI coordinator role. Even in an outsourced delivery model, 'in house' capabilities are crucial to manage the procurement and contract effectively.
2. Resource capacity: the DSI coordinator must have the organisational capacity to prioritise delivery of the MVP at pace. This capacity must exist at both working level and senior leadership/oversight level to ensure effective delivery.

We agree that NESO can be suitable for the role based on Ofgem's assessment, but we do have concerns around NESO's fit with the above criteria. NESO has a concerning track record of delays in digital project implementation³ and has recently had significant new system-wide responsibilities added to its mandate (e.g. whole energy system planning). Ofgem should consider mitigations for these challenges/risks when determining the best interim DSI coordinator option.

We note that Ofgem has not presented options for other code managers which have strong data management capabilities (e.g. Elexon, Electralink) to help deliver the DSI.

Q10. What assessment criteria do you foresee being required when transitioning from short-term governance to an enduring governance model?

As set out in responses to the above questions, we recommend focussing on delivering one use case successfully in the MVP before planning post-2028 governance structures.

Ultimately, users, government, the NESO and Ofgem will need to assess the success of the DSI as delivered over time. Ofgem should make clear from the outset how it will evaluate performance and this must be driven by improvements in the specific use cases targeted, not theoretical benefits. These must also be benefits compared to the alternative of not using a DSI, which as set out above is evolving rapidly through technological innovation. Some questions that we think might support any assessment:

- Has the product been delivered on time and on budget?
- How adaptable is its design?
- Has the coordinator created a successful feedback/learning process - can this be evidenced in product design?
- Does the product deliver value across the system?
- How involved have users been in development and decision making?
- To what extent are third parties engaging in open source product development?
- How quickly has decision making been made?
- Have all logs been kept up to date?
- Has decision making been transparent and clearly recorded?

Q11. What suggestions or feedback do you have for refining these governance assessment criteria to better meet the requirements and challenges of digitalisation in the energy sector?

³ See issues highlighted on p.4 of Demanding More - Association for Decentralised Energy 2024 <https://www.theade.co.uk/media/gsspv10d/ade-report-demanding-more.pdf>

As set out above, effective software build is achieved through close engagement between developers and users. Additional layers of governance, complexity or subcontracting can weaken this link and increase the risk that customer funds are spent on building a product which is not used / not a value add in practice.