

Dear Ofgem Digitalisation team,

I am writing to respond to the consultation regarding the proposals for the Data Sharing Infrastructure. Many thanks for providing this opportunity. In this response, I will first introduce myself, answer your questions, provide some general comments on the DSI and the consultation processes, and wrap up with suggested ways of working together. I attach the copy of the text below in a PDF format for convenience.

Introduction

I am a Lecturer at the University of Bristol, where I currently split my time between the Bristol Business School and the School of Computer Science (Cyber Security Group). In my work, I research how diverse teams make sense of digital innovation and regulatory initiatives. Most of my work has been concerned with the critical infrastructure sectors (e.g., a project on NIS regulations 2019-2021; security and energy digitalisation 2021-2022; developments of digital twins in the energy sector 2023-2024). My research is grounded in theories from social sciences as well as industry engagement (relevant to this context: digital twin workshops organised by Catapults, Alan Turing DT Net+ etc.). I'm part of several academic/industry exchanges (as advisory board member, fellow etc.), such as the NCSC-funded RITICS (<https://ritics.org>) and RISCS (<https://riscs.org.uk/>), Ofgem Figure Forum or Alan Turing DT Net+.

Consultation response

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

Not at the moment, as I'm not an infrastructure operator. However, I see how an improved visibility and openness of energy sector data would be useful for researchers. I see researchers as a separate user group which doesn't fall under the scope of the MVP (other than for the purpose of evaluation of the project)

Q2. Do you have any comments on the funding mentioned within this section? I agree that the DSI initiative needs a more sustainable source of funding which goes beyond Innovation funding. The evidence from the current project on digital twins in the energy

sector shows that current projects are predominantly pilots built on synthetic data and that a lack of sector-wide leadership creates a risk for this community to disperse.

I agree with the point 2.47 about the need to consider the impact on consumer bills. In particular, this shouldn't disproportionately impact consumers without flexibility technologies. For specific recommendations, I would like to defer to a recent report from Regen on Just transition and network planning <https://www.regen.co.uk/wp-content/uploads/Just-transition-and-the-DFES-report-v2-for-SSEN.pdf> (p. 41 for recommendations)

Q3. Do you have any comments on the timeline shown? I would like to understand more the justification for 4 years as the timeline for the MVP. I would also like to see justification for how the expected benefits from the MVP use case map against planned improvements to networks by 2028, especially in the light of the concerns identified by the House of Commons report on decarbonisation of the power sector (2023): "The Government is aiming for 70 GW of solar capacity to be installed by 2035. To achieve this, the Government said that it would need to maximise the deployment of both rooftop and ground-mounted solar. However, solar capacity is currently constrained by the length of time required to gain planning permission and consent and to secure a network connection.²⁴⁵ Lightsource BP, which invests and develops solar energy projects globally, told us that solar projects capable of generating 4 GW and £1.6 billion in investment are currently being held up by National Grid and Distribution Network Operators²⁴⁶ delaying connection dates into the 2030s." <https://committees.parliament.uk/publications/39325/documents/193081/default/>

Q4. 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? Yes, the structure is broadly appropriate and correct.

Q5. If not, state your reasons and propose an alternative governance model or improvements to our proposed solution. n/A

Q6 Are there any additional governance roles that are not covered by the proposed governance model? If so, what are these? I would like data privacy (understood as both personal privacy and economic property of fair competition) to have an explicit role when it comes to consumer data. I can see how this might not be explicitly prioritised if the first use case pertains to an operational issue though.

I would also like to understand how these roles/responsibilities relate to each other as in some cases, they might overlap. The questions of security, technology procurement, fair competition and governance are all interrelated.

Q7. Do you agree with the responsibilities of the interim DSI Coordinator? Are there any additional responsibilities that it should undertake? I cannot answer that question as Fig 5 doesn't differentiate between the role and responsibilities

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?

I suggest the following.

- Ensuring the following “Undertake significant industry engagement and interaction to determine potential future use cases for the DSI and provide assessment of their appropriateness and development requirements. “ builds on the VES project without repeating it
- For the task of “We also propose that the Interim DSI Coordinator undertakes a forward-looking technology assessment to future-proof the DSI, to expose novel digital tools/techniques that should be integrated into the DSI. “, I suggest that the DSI explores the possibility of working with the NCSC on implementing Principle Based Assurance. I also encourage further collaborations with sociotechnical academics to implement future-oriented assessment methods (see e.g. <https://riscs.org.uk/>)
- There should also be a feedback mechanism so stakeholders can collectively inform the future scope of the DSO and its coordinator

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. |

agree that following the assessment presented in the report, the NESO comes out as the best options for the Interim DSI coordinator. However, I'd like to stress the importance of a careful treatment of the already-identified potential for the conflict of interest in 4.16. I would like to see more transparency in the assessment of the NESO in the light of the previously Ofgem-commissioned audit of the [what used to be at the time] NGENSO IT estate, which raises serious concerns with their capability to manage their IT estate (as referenced in the written evidence by the Association for Decentralised Energy, 2023 <https://committees.parliament.uk/writtenevidence/123827/pdf/>) More clarity about the outcomes from this audit Ofgem's views on the capabilities of the newly-created NESO to govern and manage large scale IT project would be appreciated.

Q10. What assessment criteria do you foresee being required when transitioning from short-term governance to an enduring governance model? This question is a bit unclear to me. How are 'assessment criteria' different from 'roles and responsibilities?' Or how do they map onto each other? For example, cyber security features in both. In my mind, criteria should be mapped onto responsibilities, team structures, deliverables and the interactions between the above.

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?

N/A

Comments on the consultation process

This section is in response to the following call: "We believe that consultation is at the heart of good policy development. We welcome any comments about how we've run this consultation. We'd also like to get your answers to these questions: Do you have any comments about the overall process of this consultation?"

I appreciate the opportunity to get involved in the consultation process. The background information provided was rich and full of necessary context and referencing. I am also thankful for the sufficient time allowed for responses. I have the following comments for improvement: - The Digital Spine Feasibility Study has been published too late to allow sufficient digestion of the information in the report. Given the length of the report, it should

have been published alongside the consultation announcement and together with a webinar/workshop presenting the results

- The background work done in the build up to the consultation (e.g. transition to NESO, the VES, memorandum of understanding etc.) implies steady progress and consistent involvement of the same set of actors over time. It seems to me that the consultation presents a decision that has already been made, effectively looking to scope for a 'coalition of the willing' and 'sense-check' against any strong voices of dissent. Therefore, as the project develops, it'd be really good to understand the aims of each consultation opportunity (e.g. development of options, consultation on options, looking for potential challenges, confidence in government plans)
- I encourage the monitoring of responses and present vs missing stakeholders. From the events I attended (NDT programme workshops, Alan Turing DTNet+ etc), I see the main audiences as Catapults, NESO, selected law firms, BSI, selected software companies (telicent, IOTICS), IB1, DSIT, academics in STEM (mostly computer scientists interested in ontologies, semantic web etc), the NCCS. I would like to see more engagement with the following: think tanks (and other organisations) representing consumer rights, technical staff from energy network companies, experts on procurement and competition law, the CMA.

General comments

1. Since 2021, I have been following developments in the energy digitalisation sphere, more recently paying attention to digital twins projects. Researchers and practitioners working on digital twins have developed a significant body of literature concerned with the development of 'ethical' digital twins. Under the initial understanding, 'digital twins' are seen as a new generation of sophisticated models, hence most of the sociotechnical considerations pertain to tackling modellers' biases, questions of representativeness of data and usefulness of models. In the recent months, the conversation has moved from pilots of digital twins (models) to building infrastructure for developing future digital twins - the DSI initiative being a prime example of that. I've noticed however, that any 'ethical' concerns are still subsumed to the questions of modelling rather than data sharing. Data sharing and interoperability should open a challenging but hopefully generative discussion on issues ranging from fair competition, accountability, value of data, responsibility for maintenance, among many others. It's important that the industry develops a socio-

technical understanding of DSI, treating every question as a potential matter of ethics and politics. Rather than an issue of modelling, pilot projects and innovation funding, the DSI should be seen as a topic of large scale infrastructure project, requiring adequate funding, accountability and consideration of complexities.

2. As use cases develop, they'd require different discussions and protection measures, involving both 'small p' and 'capital p' politics. Broadly, I see use cases concerned with a) operational aspects of the grid b) involving consumer data c) involving third parties d) involving high-security assets as each falling under a different type of a discussion
3. I encourage reviewing 'lessons learnt' from many cases of govt-procured IT infrastructures. Although the DSI might be new for energy, the literature from the field of Information Infrastructures offers very relevant accounts of successes and failures of projects developing data sharing mechanisms across health, science, local govt etc. Here are some selected themes arise from the literature: - lack of transparency and poor public communications regarding procurement can damage public trust, see the recent case of the NHS x Palantir and the response (<https://doi.org/10.1136/bmj.p2776>) - it is important to be aware of the serious consequences of seemingly 'small' technical decisions which aren't accounted in legal frameworks. Code, software architecture, risk ownership - they all can seriously influence the outcomes for governance by including or excluding certain stakeholders (<https://journals.sagepub.com/doi/full/10.1177/0268396220934490>) - IT infrastructures developed as public services for the 'common good' have increasingly adopted the platform market dynamics of 'winner takes it all' / 'lock in' (<https://doi.org/10.1177/1461444816661553>) - standardised datasets rely on categorisation which is ultimately a matter of subjective negotiation and it involves subtle politics as it by definition they exclude/include by establishing thresholds, units etc (<https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=1903164e809a51032399b8b2c8365572469d5897>) - when looking at IT projects factors for success and failure, it's important to consider the sheer complexity of the initiative, the heterogeneity of data, sources, parties. Some projects fail not because they're badly managed but because they're too complex. Project leads need to take proactive steps to reduce complexity and avoid scope creep, especially with uncertain use cases and number of stakeholders using the data sharing infrastructure (<https://www.esade.edu/en/IIIWorkshop2024Schedule>) I would be

happy to provide further insights (translated to actionable policy advice) from a review of relevant projects upon request.

Ways forward

I welcome further engagement across the energy industry and academia on developing data sharing infrastructure.

I envisage the following points for further knowledge exchange

- I am happy to enquire within my current networks (e.g., RISCs, Figure forum) about hosting an event dedicated to data sharing in energy. This could take various formats, e.g. a 1 hour webinar presenting on relevant case studies from other industries, or a more in-depth, hands-on/interactive workshop activity where attendees provide views on current plans
- I am happy to write up (free of charge - this is very relevant to my current project anyway!) a rapid review of insights and evidence from the field of Information Infrastructures, which has been monitoring and evaluating IT projects for several decades now (https://en.wikipedia.org/wiki/Information_infrastructure). There are many written accounts of successful and failed projects, which involve public-private cooperation and a mix of software design and governance. I suggest that 'lessons learnt' from sectors like health, local govt or banking would be invaluable for this initiative.

Best wishes

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