

Re: Ofgem consultation “[Governance of the Data Sharing Infrastructure](#)”

Dear All,

Gaining control over and coordinating investments into energy digitalisation and associated system operations is one of the important topics of our time for the sector; data sharing is a prominent aspect of this. It is important that we ‘set up for success’.

I have mixed opinions about the Ofgem proposal. **I would adopt a different approach** that would deliver faster, safer and better for more benefit to consumers and UK plc.

In this document and in accompanying videos I have produced for this consultation<sup>1</sup>, I discuss my areas of agreement, my reservations and I provide an alternative for how to better achieve the benefits that Ofgem (and we all) seek. In an appendix, I directly answer the consultation questions posed by Ofgem.

*My chief reservations with the Ofgem approach are*

- excessive **concentration of power** that creates conflicts of interest
- constraining **governance and market design** that is limiting engineering options
- a risky **engineering design** approach that encourages complexity

*I recommend instead to*

**(1)** define the coordinator as an industry- and user-led Technical Design Authority, this lets the sector control its destiny, creates engagement, adoption and snuffs out risk.

**(2)** don’t embark on a dedicated MVP build programme where one entity is the critical bottleneck for engagement, design, delivery and deployment. Instead, we can do more with less cost and do it faster by using the industry Technical Design Authority to apply Enterprise Architecture techniques that align industry’s IT investments. This will unlock participation by the digital system engineering practitioners across the sector to work in concert, coordinating their many individual data sharing efforts in parallel.

**(3)** redefine the System Operator role from governor and tool builder to instead be a facilitator that serves the Technical Design Authority, tasked with clearing the path for industry architects and engineers to collaborate, for example by providing:

- practical needs, like facilitates and secretariat support
- an independent legal entity to operate, *if and when this entity is required*
- access to System Operator price control spending, *if dedicated spend is required*

Regards,

Steven Steer<sup>2</sup>,  
*concerned citizen*



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<sup>1</sup> I consider the video content to be part of my response, see [here](#), on my [Economic Architecture](#) website

<sup>2</sup> If you wish to contact me on this topic, please find me at: <https://www.linkedin.com/in/sjsteer/>

## On lessons from history



Many people know of Lewis Strauss – or rather they know of Robert Downey Jr playing the part of Lewis Strauss in the recent and successful film, *Oppenheimer*<sup>3</sup>.

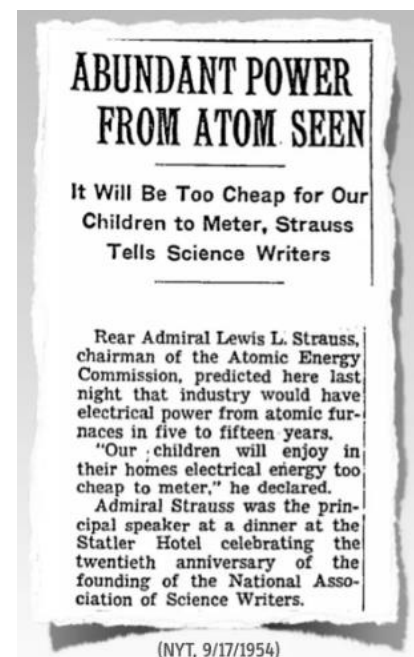
My energy peers may be familiar with Lewis previously, owing to his having held the position of chairman of the United States Atomic Energy Commission.

Lewis has earned notoriety not only for Christopher Nolan's villainous depiction of him, but also for his oft quoted "energy too cheap to meter" claim made during his 1954 speech to the National Association of Science Writers<sup>4</sup>.

*"It is not too much to expect that our children will enjoy in their homes electrical energy too cheap to meter, will know of great periodic regional famines in the world only as matters of history, will travel effortlessly over the seas and under them and through the air with a minimum of danger and at great speeds, and will experience a lifespan far longer than ours, as disease yields and man comes to understand what causes him to age."*

It is powerful to dream and dream big, but realised dreams must be plausible, built on practical solutions.

Nuclear power was at times heralded as a utopic solution to the world's energy problems and, by virtue, all the world's other problems. Reality is more complex.



Since the 1950's nuclear power has proven it has a role to play in many countries' energy mix, but it is no utopia. One of today's up and coming technologies is digital computing and the advent of recorded data at scales that unlock mass-automated decision-making plus depths of knowledge and insight previously out of human reach.

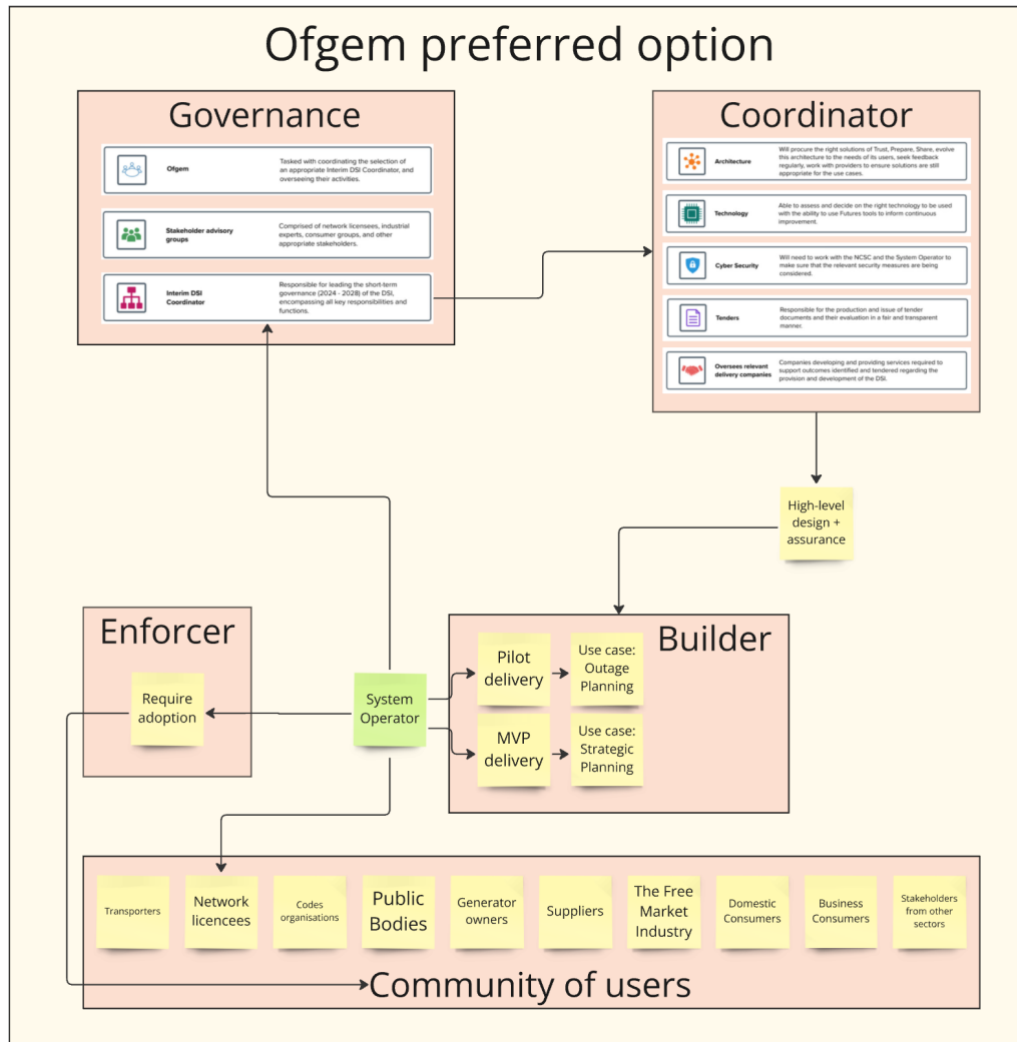
Digital has a lot to offer, and it has a role to play at advancing our energy systems; however, our plans to understand and use this technology must be carefully designed and realistic; they must not succumb to the fever of our imagined dreams.

<sup>3</sup> Images credit to Getty Images and Warner Bros

<sup>4</sup> New York Times, 1954

## On Ofgem's preferred approach

Here I playback to validate my understanding of Ofgem's plan. I have drawn my understanding of Ofgem's preferred option for DSI and its governance:



Ofgem has described three main features, all serving a community of users.

- Governance that includes a coordinator function
- Build and delivery of DSI solutions for users to adopt
- Enforcement of adoption by users of the DSI solutions

The solutions are described as being tackled use case by use case, presumably therefore growing over time the data that is accessible for consumption via the DSI solution and growing over time the collection of users who (A) can consume relevant data via the DSI and (B) are obligated to make data available via the DSI.

## On concentration of power

In the Ofgem preferred approach, the System Operator has multiple DSI roles, it is:

1. one of many users of DSI services within the industry and across sectors
2. the builder of shared DSI services and software at least for the Pilot and MVP
3. the coordinator that oversees and assures delivery of these DSI services
4. the enforcer of industry compliance with adopting the to-be DSI services

I urge to avoid concentrating these many roles into a single entity, regardless of which entity that might be:

- The builder cannot reliably assess their own handywork
- The enforcer cannot oblige compliance and then contract fairly with a business
- The user cannot design a solution that always serves others as equals to itself

These paired responsibilities are conflicts of interest, concentrating power incentivises poor behaviour. Where delivery tensions arise, the System Operator (or otherwise) will be pressured to prioritise one responsibility at the expense of its others. With conflicting incentives and the opportunity to obfuscate, issues will start to be ignored at the cost of money, time and quality of services.

There are times when regulation rightly and necessarily accepts the creation of conflicts of interest and concentrations of power as trade-offs in the interest of wider economic best practice; however, on this occasion doing this appears unnecessary and avoidable.

In my proposal, see further below, I diversified these roles, improving the separation of powers. Through well-separated powers, the sector will be better able to identify issues and challenges, raise awareness of these, and address and resolve them in timely fashion when they arise.

Separating powers will enable services to be adaptive and responsive to the continually evolving needs that we expect of digital services and this will sustain the quality of data sharing services over time. If the needs of any one of these four roles are overlooked in favour of the others then development and adaptation will stall and we will not get the services we need.

## On untimely transparency and the feasibility study

DSI has been signalled for a long time (see consultation Appendix 2) and clearly Ofgem has put a lot of thought into it, but there has little information of depth and substance available for market stakeholders to benefit from (to gain their engagement, feedback and buy-in). Ofgem's views rely on two main sources of information:

- the outputs from the Digital Spine Feasibility Study
- works the System Operator has carried out in the run up to its Pilot

This consultation was launched on 26<sup>th</sup> July 2024 and concludes on 20<sup>th</sup> September 2024. The [DESNZ Digital Spine Feasibility Study](#) was only published on 19<sup>th</sup> August: after this consultation started; over a year after the study concluded; 18 months after the study started and; nearly two years after the study was announced. The market could have had more information much sooner and that would have helped us all.

My personal commitments mean I am offline and unavailable from the 22<sup>nd</sup> August until after the consultation concludes. More timely publication would have allowed for me (and likely others) to engage more. As I have only had the Digital Spine Feasibility Study available to me for a few days prior to when I must submit my response, I have only carried out a light review of the c.500 pages of published information. I will review the study and DESNZ's response to it in detail at a later date and to continue this discourse, I will likely add my views about this to my personal website, which is dedicated to the strongly related topic that I call, [Economic Architecture](#).

Through this consultation Ofgem is asking for stakeholder input; however, delivery of DSI would be improved and accelerated through more timely availability of the information Ofgem relies on. Through Government and Ofgem following the spirit of their own 'presumed open' data rules and treating policy development as a service that meets its users' needs (i.e. Digitalisation Strategy & Action Plan Guidance) they would benefit from earlier and continuous market feedback in addition to gaining a better prepared marketplace that is ready to adopt de-risked policy solutions.

Regardless of the decisions Ofgem (and DESNZ) make going forwards, they will make better progress at achieving their policy goals by adopting and implementing the open by default ways of working with information that they expect of the energy market.

I am concerned also that there has been no formal opportunity for stakeholders to provide their views on the Digital Spine Feasibility Study findings or the associated DESNZ decisions embedded in their response (i.e. the commitment to an MVP and the choice of having the System Operator lead this work).

I include comment on these topics here in my response, as I don't think these represent are the best way forwards.

## On governance and market design

Ofgem makes information about ‘what’ outcomes DSI is to achieve and ‘who’ is responsible for creating it clear. However, ‘how’ this will be brought about technically is addressed by the consultation only at a cursory level. There is more detail in the newly published Digital Spine Feasibility Study, but this is still largely concerned with only high-level concepts and not what the architecture and engineering community, in my experience, would normally refer to as technical information.

In many respects I am content with this, it is not the expert domain of policymaking to develop technical designs for digital solutions. However, I am concerned that knowingly or otherwise, policymaking (both across DESNZ’s response and Ofgem’s consultation) are taking positions that place significant constraints on engineering and design and that this will undermine efforts to achieve their agreeable outcomes unless rectified.

This indicates to me that policymaking is not working in concert with the needs of delivery (programme management and economic and engineering design). This creates material risk to the suitability and deliverability of solutions that might be commissioned because of DESNZ’s response decision and those that might follow this Ofgem consultation, if the preferred position remains unchanged.

My overarching point here is that policy-making governance and market design decisions have placed unhelpful constraints on delivery as follows:

Data sharing has been carved out as a standalone solution for the sector, with a plan to develop ‘the data sharing platform’ as distinct from other requirements from digital services. Setting a mandate to create Data Sharing Infrastructure as a dedicated solution in my view is an overreach of best practice policymaking and places avoidable constraints on practitioners to build the best solution.

I appreciate that data sharing is an important service and one that is more visceral than other digital service required by a digitalised energy system, but it is only one digital service type that requires governance. If tackled in isolation it risks not being coordinated with the larger set of digital governance needs for the sector. These other service types include, for example:

- Digital system planning of capability deployment taken as a whole systems architecture design. i.e. the need to rationalise organisations’ (public silos plus private monopolies) IT systems investments
- System change management (such as cross-company software change-control processes and establishment and maintenance of ‘sandbox’ development environments for de-risking deployment of new integrated system software); this is to enable continual adaptation and evolution of increasingly integrated IT services throughout the energy system
- Wider sandbox services, for product and service prototyping of new energy business services using existing and/or forthcoming ‘safe’ distributions of shared energy system software



- Digital energy system Security Operations Centre (SOC), including capability and risk monitoring and threat detection services
- Physical energy system-wide risk monitoring and threat detection using digital telemetry
- Performance monitoring and evaluation of the existing and historic digital energy system services
- Horizon scanning of future capability requirements from the digital energy system

These distinct services of which data sharing is just one share many of the same capability requirements (examples include: Software Development, Software Testing, Software Deployment, User Testing, Logging and Monitoring, Storage, Data Management, Data Modelling, Data Curation, Scalability, Capacity Planning, Performance, Security Operations).

By isolating data sharing services from other digital services (which is what the scoping of policy Ofgem and government policy is risking), we will be creating tomorrow's infrastructure as siloed services that do not integrate and that duplicate capabilities. This will create complexity and reduce the efficiency of the sector at a cost to consumers. This is entirely avoidable by better coordination between policy intent and engineering design, i.e. by letting engineers control the design of digital services and not have policymaking define the dotted lines of where different silos will reside in the sector. A blend of economic considerations and engineering design rationalisation are needed, but the latter is being done not by engineering experts, but by policy makers through these proposals.

We have witnessed this same failing in the past, there are lessons to be learned from the Energy Data Taskforce (EDTF) experience. It promoted solutions that constrained delivery and engineering design. The EDTF advocated for the outcomes of visibility of data, this is a laudable outcome. However, it (and consequential BEIS policy making) went beyond this and sought to develop a specific architectural solution that is a Data Catalogue. This was a poorly thought through. Just as for Data Sharing Infrastructure, a Data Catalogue is just another component of a wider infrastructure that needs effective architectural oversight. An equivalent argument exists for the National Energy System Map, which is a front-end to a much more complex system that needs engineering decisions, not policy decisions. There is a similar argument also for Asset Registration, but by design or happenstance, this third case makes a bit more sense. As someone involved with this previous work, I don't mind holding up my hands and saying in hindsight there is more I could have done to address this problem sooner. I've learned my lesson, please also learn this lesson from me too so we don't repeat errors.

The Energy Digitalisation Taskforce recommendation for DSI faces a similar challenge. The outcome of data sharing is a good policy stance (and it already exists as requirements in the Data Best Practice guidance, Principle 8 on interoperability). However, Data Sharing Infrastructure as a dedicated solution is an overextension of policy and risks making engineering design avoidably compel and solutions inefficient and hard to manage when considered across the whole sector's portfolio of IT services.

I previously raised this point in [my governance paper published as part of the Energy Data Taskforce](#) in 2022 (see from page 33), below is an extract from that paper where I interpreted [National Audit Office \(NAO\) lessons learned from the EU Exit process](#) experience and I adapted and applied these to the energy sector and its needs.

Finding	NAO EU Exit process comment	Net Zero Energy Systems Architecture requirement
<b>Oversight</b>  involve experts early	Particularly for IT investments, the EU Exit process suffered from poor planning.  This was considered avoidable if only the practitioners who deliver these services had been involved advising decision-makers early in policy development.	The decision-making process must require decision-makers to engage early with all types of stakeholders, including those who must deliver the solutions resulting from decisions.

There are also lessons to be learned from the recent [Market Facilitator decision](#); this relates to an equivalent – arguably overlapping – role of coordinating market digital investments and activities. In the case of the Market Facilitator, Ofgem originally preferred that the System Operator as the right organisation to meet the sector's need. Stakeholder engagement helped Ofgem determine that Elexon might be a suitable option, which ultimately Ofgem selected.

The reasons Ofgem gave for this were:

- Risks to independence: the System Operator uses flexibility market services
- Concerns about System Operator organisational capacity to deliver

These are both relevant considerations to the DSI work, where the System Operator will be a user of data sharing services and because work on this topic will require the use of similar resources as for the Market Facilitator work.



## On engineering design

I don't see compelling evidence that the proposed approach to creating data sharing infrastructure is the best available. Ofgem has descoped from its consultation consideration of other options; it has relied on the work of the Digital Spine Feasibility Study, which has not identified and assessed an approach that I think will be more effective at implementing Data Sharing Infrastructure. I discuss that option later, see further below. Immediately below, I raise my concerns about Ofgem's preferred option.

I interpret Ofgem's (and, I suspect, government's) technical delivery expectation as:

- the System Operator will create a Pilot solution about Outage Planning
- the System Operator will then extend that solution to Strategic Planning
- relevant actors in the sector will be mandated to use the solution
- scale-up will be from more use cases and more actors being mandated

It has a logic. I view this as a centralised command and control delivery approach that encourages creation of large and complex IT services (risk and uncertainty) provisioned through a single entity (a bottleneck). There is clear intent to decentralise and this is described as federating parts of the service, mainly having the industry implement their local integrations. My specific reservations about this approach are chiefly that:

- the scant technical definition of DSI provided (including in the Digital Spine Feasibility Study) risks mission- and scope-creep. DSI as a solution is being positioned as a panacea for all data sharing, which is unrealistic; data sharing takes many forms and so has many differing requirements that will be undeliverable by one service
- what the DSI platform is there to do is undefined. For example, there is no evidence of any capability mapping having taken place to provide a sufficiently specified description of services that DSI will and won't offer, with these matched against interpreted requirements of what consumers (and as a proxy, industry) needs. Without this, DSI cannot integrate into the incumbent systems architecture of the energy system; it is only a high-level intent of outcomes that are wished for and it is not practical to make important decisions about roles and responsibilities. Open banking achieved this; it was tightly scoped with a simple and stable ontology. The energy sector needs a 'thousand open banking's to bloom', creating a single service is not realistic.
- Ofgem expects the System Operator to mandate integration with the DSI platform. Does this apply to all the data sharing services that work today? If not, then when does and doesn't it apply? This is undefined and the answer will not be found by the approach of use case development for Outage Planning and Strategic Planning: answering these questions requires a different way of working
- Ofgem describes the pilot as focusing on "trialling new technologies". Sharing data between organisations is a thoroughly established solved problem to the highest levels of security. Technology is not at all the issue. The issue is agreeing

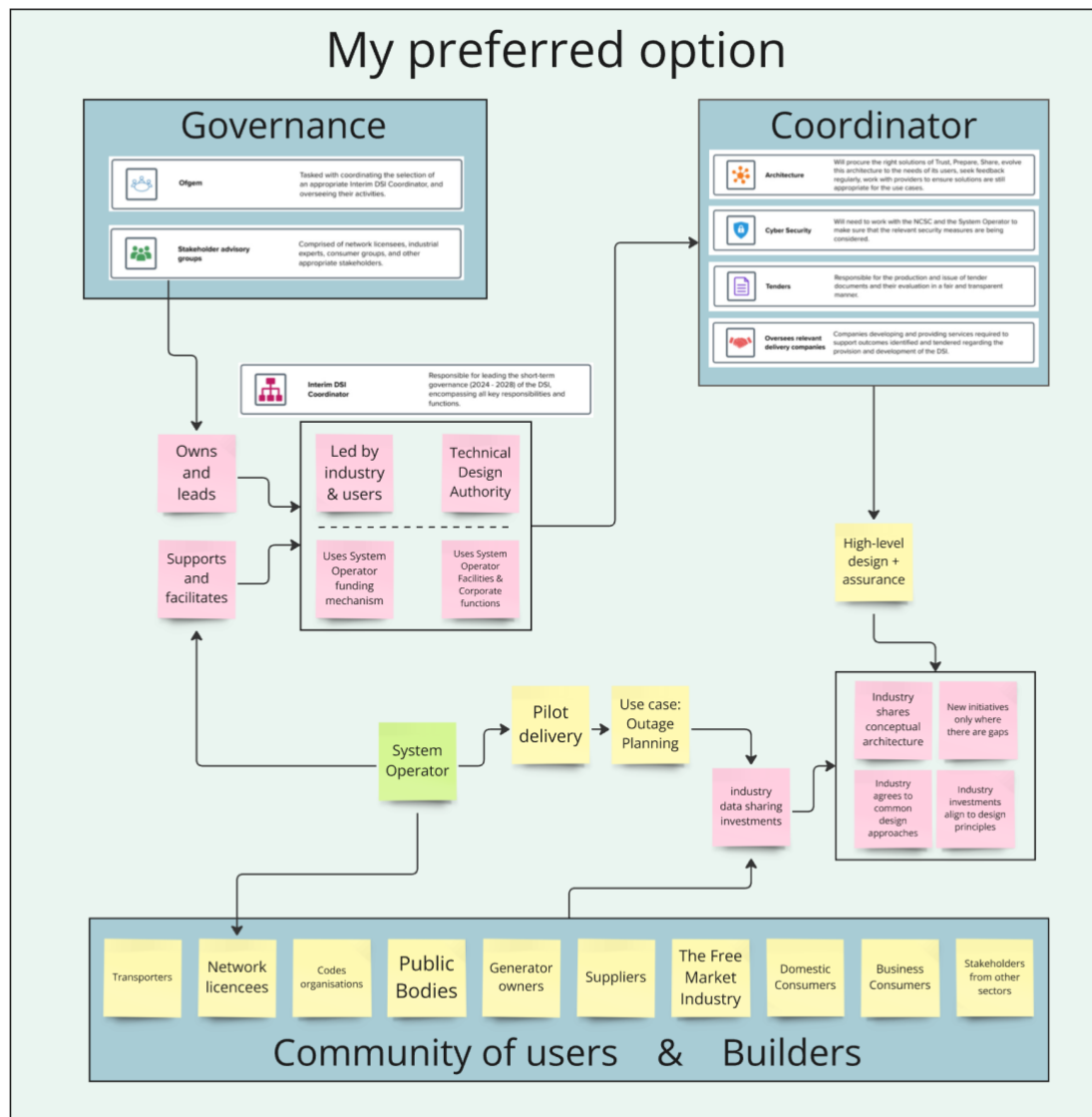
the governance for automating agreements, enabling services, driving forward investments with confidence and achieving coordination through engagement.

- there is no clear mechanism to assure that build work is matched with and suited to industry needs. Presumably the industry advisory groups are intended for this purpose, but there is no specificity on their role and ultimately, the final decision appears to sit with the System Operator, who is also in the position of designing and building the solution. This design risks having an unsuitable solution imposed on the sector and industry absorbing high costs to rework their IT capabilities for integration as well as a large loss of time and possibly complex enforcement challenges
- a key purpose of DSI is reusable capabilities, but the Pilot project is only to test one use case – this risks delivering an ‘outage planning data sharing solution’ and not a generalised data sharing solution. The intent of Ofgem’s DSI plan is to ‘build the factory that builds products’ and not to build the products themselves. You cannot design a factory by investigating only one product.
- the centralising of build and implementation misses opportunities to reuse existing sector capabilities and investments, and this combines with the potential complexity the market will encounter as it later needs to integrate with the new centrally developed DSI service. I expect this to work for a few industry actors and then to become very complex when seeking to deploy it at large-scale. Complexity creates great risk that services do not behave as intended and once trust is broken, it is hard to recover. Once you’ve lost control of an IT system, trust rarely is regained for most of its users.
- Also on the theme of complexity. I anticipate that a feature of the proposed design approach is that even in scenarios where the System Operator has been effective in its role, the fundamentals of the proposed design are that the central design and build function (i.e. the MVP) will result in a solution that is theoretically very effective, but that the hard challenge (not of building a service but of performing the systems integration) will not have been addressed, meaning industry users will still be required to do the hard work to achieve data sharing. To an extent this is unavoidable under any approach, which is a feature of the existence of extensive legacy systems. However, this centralised approach exacerbates this problem because it will be inherently harder to:
  - design a solution from day one (or even in 2028) that is reasonably compatible with all the types of legacy solutions existing in the sector
  - the onboarding burden of having a whole sector need to engage with the System Operator to achieve integration is likely to become a bottleneckAlternative design approaches are available that (A) ask for alignment of legacy systems to occur incrementally over time, rather than mandate they all (at times unrealistically) switch to a singular idealised service in too short of a space of time and that (B) harmonise systems into ‘bubbles’ of interoperability and then later coalesce these to interoperate through integration layers, meaning different actors can help onboarding into different environments (less of a bottleneck).

## On the way I would go about improving data sharing

I blend application of Enterprise Architecture governance and agile delivery practices, to be conducted by a Technical Design Authority (TDA). I have previously published this approach to digitalisation; see my report, [Annex 3 to the Energy Digitalisation Taskforce](#) and I have since published more content [here](#) on my website, further the approach.

Below visualises my recommendation. Compared to my drawing of the Ofgem diagram, above, I have removed certain features and I have added (in pink) new features:



Key information about my proposal is that:

- a TDA comprised of architects from across the sector run the coordinator
- stakeholder advisory Groups assure the TDAs mission and progress
- I have removed the dedicated centralised MVP build project
- build work takes place federated across the sector, aligning to TDA expectations
- the System Operator plays a facilitating role removing friction for the TDA
- the TDA starts without a formal legal status (better to add this complexity later)

## On how this approach works and why it is better

### *An industry- & user-led Technical Design Authority (TDA) is the coordinator function*

A TDA is an architecture governance function that coordinates large organisations. I am abstracting this capability to coordinate a sector and not just a single organisation.

By defining the coordinator as a TDA, this narrows its focus to make it a lean capability who's only function is to coordinate the sector's engineering work, which is needed to deliver (among other digital needs) data sharing services. The TDA does not need extensive representation from 'business' and policy leadership. There are already many avenues for setting policy and business strategy across the energy sector; there is a gap in engineering and architecture leadership that this TDA can address.

A TDA is principally comprised of technical leads of various flavours, Architects (Enterprise, Solution, Business Data, etc) and engineering experts (software, data, Quality assurance, etc), with support from disciplines such as delivery managers and Portfolio-level Product Owners. Its role is to provide Enterprise Architecture services.

### *Enterprise Architecture and emergent design*

My recommended approach removes the plan for a dedicated MVP DSI project to be created. I suggest that data sharing infrastructure is better delivered through a TDA leading the sector via application of Enterprise Architecture techniques (augmented with Agile working methods, where applicable).

In practice this means the coordinator (the TDA) spends its time:

- gaining a view of the detailed technical solution architecture of today's existing and ongoing development of digital services relevant to sharing data
- articulating (as architectural blueprint diagrams) the agreed set of technical capabilities that comprise the full collection of solution architecture, including producing provenance data relating capabilities to learned [Functional](#) and [Non-Functional requirements](#) for the sector
- stepping through the identified capability needs one-by-one to determine the best approach to deliver of each component (such as centralised shared services versus decentralisation) both for a long term vision and in the interim
- Conducting dependency mapping between capabilities to enable sector-level programme and risk management
- Agreeing technical design principles and constraints for the sector to comply with (this differs to the approach of mandating the use of specific technology or software, it leaves a lot more room for stakeholders to interpret and make pragmatic technology choices while incrementally aligning IT systems)
- identifying tactical and enduring alignment and integration opportunities and capability gaps and overlaps in the sector's existing systems and investments
- Reviewing industry's and users' Digitalisation Strategies & Action Plans and associated Solution Architecture to identify opportunities for adapting them

A key feature of this way of applying Enterprise Architecture techniques is that it delivers ‘emergent architecture’, meaning you don’t fully plan the data sharing infrastructure upfront (as would be hard to avoid in the case in the MVP planned by government). Instead, the sector’s digital architecture is arrived at incrementally over time as each investment across the sector takes place, validating that it meets TDA expectations.

Allowing for architecture to emerge solves the intractable problem of having to know at an early stage what your needs will be at a much later stage – there are too many uncertainties in large and complex IT systems to be able to do this effectively, which is why decades have taught us that doing ‘big design up front’ is rarely the efficient path forwards for an IT system, particularly one that requires the migration of an entire industry’s worth of incumbent and legacy IT system.

Within this approach, it means that forward investments following TDA design principles would achieve ‘interoperability-by-design’, else risk rejection by the TDA and therefore the sector.

A feature of this approach is that you do not expect that immediately all parties will adopt the same data sharing method, they may never do, and this would be true under the Ofgem preferred option as well. What I anticipate is that by continually taking tactical opportunities to align systems a handful of accepted data sharing practices will emerge as thousands of raindrops collect first into a few puddles before then into one coordinated body of water (to make use of analogy). As puddles emerge, it will then become practical to evaluate whether one data sharing mechanism should be adopted or whether it is better having a handful of accepted mechanisms – this is an open question that the MVP project approach forecloses by assuming the latter is best; we don’t have enough information at this point in time to make a good decision on this. But, we also don’t need to decide now, that will come as our system architectural design emerges.

Another benefit of a TDA coordinating via defining technical design principles is that this approach enables everyone in the sector to participate at the same time, it will bring the entire UK digital engineering workforce to bare on the challenge in concert. Meanwhile, the Ofgem preferred option, steeps responsibility on the System Operator, which creates a critical risk to delivery. If anything disrupts the System Operator’s work, everyone stops working and nobody can start working until the System Operator is ready to give them what they need to begin. Use the ‘resources’ (the people) that are at our disposal to their fullest: unlock peoples’ contributions. Data sharing is a large and diffuse challenge, it won’t get solved unless everyone can do their part.

Agile working does not mean stringing together ‘Discoveries’, then ‘Pilots’, then ‘MVPs’, then ‘Closed Beta’ to ‘Public Betas’ until finally a service is ‘Live’. Doing this is a masquerade for traditional waterfall delivery methods, which have proved themselves to be inferior to Agile working methods in most circumstances. Agile working minimises complexity by delivering tiny services from Discovery to Live in weeks or a few months. Tiny software releases are easier to control and govern and they start delivering tangible benefits early. Committing to an MVP to 2028 misses this point entirely.

### *No technology role for the coordinator*

I recommend that the TDA does not concern itself with technology and that (at least in the near term) the industry and users hold this responsibility.

The risk to involving the coordinator (the TDA) with technology concerns is that the TDA may accidentally or deliberately start to dictate and control the technology stack that the sector must use. The sector is too large and complex for one organisation to understand the implications (suitability and practicalities) of this for all participants across the sector. This is likely to encourage costs without associated benefits on the sector as it reworks systems to integrate with each other.

I would limit the oversight role of the coordinator to:

- using Enterprise Architecture techniques, as described above, while avoiding over-constraining detailed design choices for individual organisations as they make their investments
- monitoring and assuring build and implementation work, either gaining confidence of systems alignment or validating that deviations are justified

In the long term, there might be a bigger role that the coordinator might play with respect to technology, but I expect this to be far in the future – far enough to not need further discussion now.

### *Enforcement*

In my recommendation I have removed the proposal of enforcing adoption of the DSI, which Ofgem intend the System Operator to do. The existing requirements of Data Best Practice guidance and Digitalisation Strategy and Action Plan guidance are sufficient for the time being for creating the impetus for participation, Ofgem can enforce these if engagement should be lacking. I expect that this participation of energy network companies and the overt needs of wider stakeholders who need their data will create the gravity needed to gain participation more widely.

As to actual adoption of DSI in its early days the TDA's design guidance will need by necessity a willingness to adopt it as a key measure of success. If organisations have to be mandated to integrate their systems then likely the wrong solution is being pushed onto them. In time this will change and adoption will require enforcement, but I would only do this at a time when the TDA has matured.

In the near term there is too much uncertainty about what DSI is for credible enforcement to take place directly about it. Removing the enforcement threat to begin with has the benefit of creating a safe working space and trust during early period of coordination around infrastructure – this approach worked effectively when Digitalisation Strategy and Action Plans were introduced into regulation.

Enforcement will play a role, but not an early one.



### *Industry- and user-led*

For coordination to succeed the TDA needs to avoid giving market power to any one special interest group. Through wide representation the Working Group will be able to be trustworthy to serve as the coordinator steering committee. Within the TDA, appointments will need to be made to ensure effective and timely decision making and this governance structure is something that Ofgem and the industry Advisory Groups it proposed would have a good role.

The TDA needs to be inclusive but that does not mean exhaustive, this likely wouldn't be practical for timely decision-making. There are too many stakeholders for everyone to be on the TDA, but the TDA should be free to invite architects from across the sector's organisations as and when they are need.

Key to gaining accountability and rapid progress is ensuring open and transparent working by the TDA. Here I strongly support Ofgem's setting of an expectation for a Shared Knowledge Base. This is a key mechanism for enabling the sector around the TDA with efficient communication and the ability to scrutinise the TDA.

### *Facilitative Support*

The TDA is to be focused on enabling the sector's technical delivery. It will do this faster if its practical needs are facilitated. These may be as simple as the ability to use physical offices or host a document store, for example.

In the longer term, its needs may become more complex, such as if capability gaps are identified in the sector and so require a competitive tender to have the capability created or an existing service managed. It may be that legal status becomes needed, though I think a lot of progress can be made rapidly before needing this.

Here the System Operator could play a valuable role, it is well-placed to:

- offer the use of its facilities and desktop IT services
- legally instantiate the TDA, such as in the form of an independent Special Purpose Vehicle if and when this is required
- help with contractual arrangements by lending use of its procurement team
- secure and allocate funding via making available use of its price control pass-through mechanism

Doing this would position the System Operator as a facilitator and supporter of the industry, this is in preference to the Ofgem view, which is a System Operator that is forced into a position of feeling it has to lead the sector and so encouraging it to operate as a bottleneck. I think the System Operator's humbly positioning itself as a provider of support would be the best kind of System Operator for energy consumers.

## On what next for this approach

There is more to do (there always is), but unfortunately I am timing-out before I must wrap up this response owing to personal commitments that are rendering me unavailable until after the rest of this consultation period has elapsed.

These are the next topics on my mind in relation to defining my recommended approach. These topics require explanations and solutions:

- Operating the TDA. Members selection and stakeholder representation; decision-making processes; issue resolution and escalation; decision-making protocols and assuring compliance to these
- TDA interactions with wider governance. It's relationship in and to regulation; status and authority (or not) of the TDA); its legal standing
- Governance evolution. Mechanisms for adapting and changing the TDA over time (incrementally)
- Definition of DSI. Providing a documented definition, including a technical definition, scope, limitations
- Examples to help gain stakeholder understanding. Where data sharing has worked well; where TDAs play a role and what that role is

These – plus any feedback questions I receive as a result of sharing this document – will form the basis of next steps for any further work on this proposal.

I previously have gone some way to describing these, see my recordings [here](#) about Energy Digitalisation Governance. But specificity tailored to this DSI work is needed to make this approach deliverable in practice.

## Appendix: Answers to Ofgem consultation questions

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

I am responding as an individual citizen. No answer provided

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

As embodied in my proposed alternative recommendation, I believe progress can be made without requiring dedicated funding. Many sector actors are already obligated to engage in this initiative via Data Best Practice and Digitalisation Strategy and Action Plan expectations. By only centralising the TDA function, centralised costs will be very small, small enough that it is worth actors subsuming the cost of participation. Build costs will be spread across all sectoral investments, with the TDA making those more efficient as a portfolio than they are today – lowering energy sector spending.

If more complex arise that need dedicated funding further into the future, then, yes, System Operator funding is suitable as I have explained, above. My recommendation is for the System Operator to use its price control pass-through mechanism to fund a wholly devolved TDA, it is best if the TDA does the decision-making over how that money is used.

My expectation is that largely it will be possible to federate data sharing infrastructure costs as components among the many IT investment projects taking place across the sector, with the TDA helping them to adapt their plans to align architecture.

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

With respect to the duration of the interim arrangements (2024-2028). I have these reservations:

- (1) I recommend against planning for a binary transition from interim to enduring arrangements and instead a taking advantage of opportunities to incrementally evolve from the initial arrangements to the enduring ones.
- (2) Instead of being driven by dates, I recommend setting entry and exit criteria for progressing through governance regimes and publishing and tracking progress against these so that governance transitions at the optimal timing for the right reasons
- (3) In the absence of incremental transition, I think the horizon for enduring governance arrangements is set too long. A lot will change on this topic between now and 2028, I don't think the initial arrangements will be suited to evolved needs in the latter stages of this time horizon.

**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?**

There are elements of the governance model I agree with and some that I would approach differently. I have explained these differences, above. I recognise some features in the Ofgem proposed governance model as being features from the design I created through [the report I wrote as part of the Energy Digitalisation Taskforce](#) as well as from the additional information on [Energy Sector Digitalisation Governance](#), which I make available openly on my personal website, [Economic Architecture](#).

I'd like to specifically acknowledge my positive support for the intention to include a Knowledge Base as part of the responsibilities of the 'DSI coordinator'. I consider this to be a critical and often overlooked feature to overcoming the governing complexities of managing system design and development initiatives where the system spans multiple organisations. Ofgem has provided little detail about the knowledge base in the consultation, I write with the assumption that it will align to the expectations I have set in my own design proposals (see links in previous paragraph).

With regard to timing, please see my answer to Q3, which explains how I would adopt an incremental approach to continually evolving the governance function and how I would adopt an entry and exit criteria-driven approach to determining when to make each transition, rather than a static calendar date and binary transition from interim to enduring governance regime.

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

I do not. I have provided an alternative governance model in the body text, above.

Additional to the body text above: I have a modest concern that Ofgem's roles and responsibilities are not documented and made clear. The regulator's role is somewhat easy to anticipate with confidence, but I think it is an omission to not have provided specificity, this could be easily rectified.

For example, it would be of interest to understand the circumstances (if at all) where the regulator might feel compelled to intervene, such as with respect to plans/spending/etc. It may be that (over time) a model like that of codes oversight is suitable where, in simple terms, Ofgem may replace the code body but is not entitled to change the codes. However, this is unlikely to be suitable for this early interim period and so I can imagine Ofgem having stronger powers of intervention, but these would need defining.

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

I have provided my view on governance roles in the body text, above.

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

I have articulated in the body text, above, the responsibilities I would expect of my proposal for a TDA to serve as the coordinator. These differ to Ofgem's view mainly in that it is to oversee the sector's investments, as a federated collection, and not oversight of a central service that is to integrate with the sector.

I disagree with including 'Technology' in the coordinator's responsibilities. I have also explained this in the body text.

I recommend that no matter what entity/group is made responsible for being the coordinator, that they are subject to following the Data Best Practice guidance. Within this I recommend that a much stronger definition of compliance with this guidance is followed than is the case currently, i.e. I recommend that the coordinator leads and sets the bar for high quality Data Best Practice compliance for the sector to follow.

What I mean by this is that I expect the coordinator to go beyond the current (typical) standard of compliance by the sector through its:

- Treating as presumed open:
  - project information like roadmaps and product
  - user research and design requirements
  - architectural designs and associated documents
- Pro-actively publishing data that is likely to be of interest to stakeholders
- Publishing open data triage decisions for all triaged data
- Investing (over time) to digitalise its programme management activities to enable automated self-service consumption of this data by industry and cross-industry stakeholders
- Publishing regular micro-progress updates for little and often updates in preference to large infrequent progress reports

**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 am strongly concerned with the collection of deliverables stated for the coordinator. My headline concern is that Ofgem has seemingly scoped the coordinator to be a report writing entity instead of a technical delivery coordinator. The coordinator needs much more emphasis on being held to account for fastidious portfolio management and delivery oversight capabilities with a razor sharp emphasis on its progress at

coordinating and facilitating the systems integration of the IT investments being made by actors across the energy sector.

I give that view, noting that Ofgem has a central 'DSI platform' in mind, rather than a preference for taking advantage of the IT investments and capabilities across the energy sector and therefore this is naturally leading me to place different emphasis on the coordinator's role, but regardless I think my point applies even if Ofgem chooses to stick with its preferred option.

Below I have listed the deliverables Ofgem has proposed, giving comments on each.

Ref	Responsibility	My Comment
3.12 bullet 1	Undertake significant industry engagement and interaction to determine potential future use cases for the DSI and provide assessment of their appropriateness and development requirements.	I recommend creating processes to make it easy for industry to collate use cases, this would include engagement, but is a wider ask than this responsibility. It is also a different ask. My suggestion avoids the need for the coordinator to articulate the use cases, instead I see its role as gathering, curating and sharing the industry's views.
3.12 bullet 1	We propose the Interim DSI Coordinator will be required to publish an annual report outlining existing and proposed future DSI use cases.	Who is asking for these reports? Please don't create reports for the sake of it. There is to be a Knowledge Base, use it for rapid and continual information sharing. I recommend a continual publication cycle of use cases as part of presuming open project management information, including relating the coordinator's roadmap of industry activities and deliverables to meeting use case. There is no benefit in waiting 12 months to learn about use cases
3.12 bullet 2	Report, inform and oversee the evolution of the DSI architecture from MVP to steady state	I agree with this. However, the scope of what it means to provide oversight needs defining. This is important. I have previously provided my view on what this scope should be in my public videos on <a href="#">Energy Sector Digitalisation Governance</a>
3.12 bullet 2	including extensions of governance areas and forward-looking statement on staffing levels <i>[publishing a report after 2 years]</i>	Governance and staffing levels of what? Having views on this topic is generally agreeable, certainly about the coordinator itself, it may have some views on the wider industry effort to share data, but I doubt this can reach the detail of staffing levels.



		<p>My concern is that Ofgem thinks the coordinator will provide a view on a specific platform, 'the DSI platform'. I disagree that there will or should be such a singular platform and so it will not be straight forward for the coordinator to provide such a view.</p> <p>I also see no good reason for waiting 2 years for a large report. I recommend using the Knowledge Base to incrementally publish a view (presumed open) throughout.</p>
3.12 bullet 3	We propose the Interim DSI Coordinator will be responsible for creating a knowledge base that covers all the process, procedures, assessment models, cyber security requirements, onboarding and in-life processes for the DSI and its use cases.	<p>I strongly agree that the coordinator should be responsible for a knowledge base. I do not agree with the purpose of the knowledge base and the coordinator's responsibilities with it to be as described here.</p> <p>The coordinator might instantiate the knowledge base, but the knowledge base content should be created by the entities that win tenders to do the work. The exception to this would be the needs for the coordinator to publish content on topics like programme management, such as progress roadmaps, its product backlog and its own internal decision making processes and decisions, such as with respect to its conceptual architecture design responsibilities. Most of the knowledge base content should come from industry.</p>
3.12 bullet 4	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. We propose that this technology assessment is published on 1 April 2028	<p>I have elsewhere stated my opinion that I do not think the coordinator needs to have a strong role with respect to technology horizon scanning and certainty not for the interim period.</p> <p>As per my comments elsewhere, I also think that if the coordinator takes on this responsibility, it should incrementally and continually publish insights and not make the sector wait for a single large report.</p>

**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.**

I disagree. I recommend instead that an Industry and user-led TDA performs this role.

I am pleased to see that Ofgem has attempted to provide criteria for its decision making, however:

- I think the criteria need to be refined to more fully reflect requirements
- I find that Ofgem's qualitative assessment of its options against those criteria to be selective and exposed to risks of confirmation bias
- Ofgem has provided little to any definition of its third option, the working group. There are many ways in which working groups can be designed and delivered and Ofgem has showed no evidence of having given this the due consideration it deserves

I doubt that all decision-making criteria hold equal weight, and I suspect that it is easier for any candidate for the role to improve its performance against certain criteria over others. For example, Independence has a strong relationship with industry trust, which will be critical to success. Ofgem and the System Operator are well established and so will struggle to change the level of trust they each have with industry, meanwhile the exact composition of a representative TDA could be easily adapted to take on a form that industry does trust.

Here is my review of the individual decision-making criteria:

Criteria	Comment
Interoperability and common standards	<p>This criterion is an outcome Ofgem is seeking from DSI. It therefore needs interpretation to determine what capability is required from the option being assessed.</p> <p>In my view the actual capability requirements implied by this outcome overlap strongly with the Operational Capability criteria and so two criteria are serving similar purposes in terms of testing capabilities. I suggest merging the criteria</p>
Operational capability	<p>This criteria is the inverse: it is a capability and not an outcome. It would be most helpful to present the criteria in a consistent format.</p> <p>I agree with this criterion, but I don't think both this and the Interoperability and Common Standards criteria are needed. I suggest merging them</p>

Independence	<p>I suggest adding additional breadth to the definition of this criteria. The best coordinator will be one that:</p> <ul style="list-style-type: none"><li>• Does not need to provide / consume data within the DSI (i.e. is non-partisan to energy sector use cases)<sup>5</sup></li><li>• Is not involved in DSI build and delivery investments (i.e. does not have to mark its own homework)</li><li>• Open to engagement and participation by any party</li></ul> <p>The consultation has included my first bullet in the 'Independence' definition and the spirit of the third but has omitted the second.</p>
Engagement	<p>This is agreeable, but I think needs more specificity. I have subdivided this into two types of engagement responsibility:</p> <ul style="list-style-type: none"><li>• Engagement with business leaders about what DSI should do</li><li>• Engagement with industry technical experts about how DSI needs to work</li></ul> <p>The consultation does not provide this specificity, but I suspect that Ofgem has only made its assessment based on the first of the two sub-criteria. The second needs adding, particularly for the TDA option I have recommended.</p>
Cyber security	<p>I can see the need to headline cybersecurity to ensure market trust that system resilience is understood as a high priority; however, I would consider this a part of the quality measure on all aspects of delivery, rather a dedicated criterion, but I do not have strong feelings on this and I am willing to tolerate it for the benefit of securing industry trust.</p>
Transparency (my suggestion)	<p>This is for consideration as an additional criterion. It arguably is captured within 'Engagement' but is not wholly overlapping. I'd gain trust if I thought that coordinator could demonstrate a strong ability to be transparent, such as by meeting the high expectations I described, above, for the running of the Knowledge Base.</p>

I have assessed the Ofgem preferred option and my preferred option, I did this:

- using the evolved definition of the assessment criteria I gave (see table, above)
- providing a RAG rating to better quality my opinions

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<sup>5</sup> This is more or less logically impossible to achieve in reality, but you can get very close to this ideal by having the responsible entity only have to participate in the DSI by exchanging data that directly relates to its coordinator responsibilities.

*My System Operator assessment (i.e. Ofgem preferred option)*

Criteria	RAG	Comment
Interoperability and common standards & Operational capability	Amber	<p>The system operator has a large existing portfolio of IT services and investments. My understanding is that this is stretching its IT capacity, and so additional responsibilities might raise risks to the delivery across these activities. That portfolio has a mixed track record, such as evidenced by <a href="#">Ofgem's determinations</a> in relation to the ESO's business plans. Ofgem has also recently included concerns in regard to this topic in its <a href="#">decision</a> over the flexibility Market Facilitator delivery body.</p> <p>Ofgem need to consider suitability not just of what the System Operator should be capable of, but what capability they actually have to do this work.</p>
Independence	Red	<p>Ofgem raised a concern in the consultation over whether the System Operator would be perceived by the market as independent. I agree, this is a concern.</p> <p>Using my wider definition of this criteria, I see additional conflicts of interest through Ofgem intending for it to deliver Pilot and MVP DSI services. This will result in the System Operator needing to mark its own homework, which is poor governing practice.</p> <p>Overall Ofgem's preferred position is for the System Operator to have 4 distinct roles (coordinator, design and build/delivery of the Pilot and the MVP and, over enforcement of adoption of the MVP). I consider this concentration of power to be unnecessary and unhelpful as it will also concentrate risk as the Systems Operator becomes a single point of failure with competing interests. I consider this to be entirely avoidable.</p>

Engagement	Amber	<p>With respect to the Ofgem definition of this criteria, I am satisfied that the System Operator has well-established processes and experience at conducting engagement work. However, I am concerned that as part of the responses to the Market Facilitator consultation, stakeholders in the sector did raise concerns over the quality of System Operator engagement.</p> <p>Using my refined definition of engagement (and therefore taking into account engagement with stakeholder with respect to architecture and technical needs), I am more reserved. Evidence supporting this concern was included as part of the Ofgem <a href="#">determinations</a> over System Operator performance in the BP2 RIIO price control period. To be transparent myself, I was involved in that work and so other opinions should be sought. However, I am not aware information evidencing that this situation has changed since that time.</p>
Transparency	Amber	<p>The System Operator is subject to the Data Best Practice guidance requirements. This is a strong positive, however, I would expect to see enforcement of this by Ofgem to a much higher standard than has been the case to date to gain confidence that in practice the System Operator would actually achieve the level of transparency I expect, such as I laid out for my description of what effective running of a Knowledge Base looks like, see above.</p> <p>I note that some market respondents to the <a href="#">Market Facilitator consultation</a> did raise concerns about System Operator transparency and accountability in practice. This seems relevant and creates risk.</p>

*My Technical Design Authority assessment (i.e. my preferred option)*

Criteria	RAG	Comment
Interoperability and common standards & Operational capability	Green	Given that I would staff the TDA with the industry's primary technical expertise (and experts from across sectors), this group would be excellent with respect to these capabilities.
Independence	Green	<p>By designing the composition of the working group as a steering committee with broad representation, no member would hold decision-making power.</p> <p>The working group would not be wedded to particular use cases or solutions as collectively it would have no partisan interests</p> <p>The working group would not be capable of bidding for build work in tenders and individual members could be recused if they had conflicts of interest</p>
Engagement	Green	By definition the working group would achieve wide engagement and would be able to access the networks of all of its members
Transparency	Amber	<p>The working group would not have formal legal responsibilities to be transparent, except for energy network company representatives who are subject to the Data Best Practice expectations that are enforceable.</p> <p>I am optimistic that government can convene people with the right attitude and that there can be agreement to follow Data Best Practice, but I can imagine a more robust assurances of transparency.</p>

On reflection, these criteria don't reflect the chief risk to the TDA approach. I do think it is the better option, but this scoring is artificially positive. The key risk is initiating the right attitude and culture among the TDA membership, this isn't captured by the criteria. In poor outcomes the committee will wait for each member to agree to every decision.

This needs addressing. It could be mitigated greatly if Ofgem and perhaps also DESNZ apply their soft power to set and sustain the scene and tone. Independent Advisory Groups could provide scrutiny of the TDA too. The TDA members need to leave organisational affiliations at the door and they or the governing/scrutinising actors around them will have to appoint people into specific decision-making. Options are available and need planning: rotating authority, different people responsible for leading on different topics. Everyone is to be heard but only some people make the decisions. Timely transparency that enables market-wide scrutiny is essential to hold those decision makers and the wider TDA to account; this is why operating 'presumed open' and publishing to a similarly presumed open knowledge base is essential.



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

I have stated, above, my preference for an incremental approach. Using an incremental approach, I recommend setting criteria that are reasonably deliverable over relatively short periods of time, such as months ahead, perhaps quarterly instead of a 3-year horizon. In the first instance, I'd be interested in criteria along the lines of:

- Demonstrable progress by the TDA (under my preferred option) at producing artefacts, such as architecture diagrams and associated content and progressing its agreed backlog of tasks.
- The perceived timeliness of coordinator decision-making by wider stakeholders and Ofgem
- Industry survey feedback on how agreeable the coordinator's decisions are
- Production of and progress against an industry roadmap of systems integration and alignment, showing a 'glidepath' to mature integration of IT services and an industry track record at either (A) evidencing service integration leading to better data sharing or (B) the creation of new services and included in that (critically) the decommissioning of any associated legacy systems – if you can't decommission the old system, you haven't succeeded

Through monitoring metrics relating to these topics I expect Ofgem and other stakeholders will be able to foresee when the capabilities of the coordinator are reaching their limits. This will allow for self-regulating correction of the governance provided by the coordinator with the market, or as larger changes become required, the ability for Ofgem to intervene with more substantial changes to the governing regime, as needs require.

**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?**

I provided suggested refinements to the assessment criteria as part of contextualising my response to Q9, please see those suggestions as relevant to this question.