



Making a positive difference  
for energy consumers

To RIIO price control licence holders and  
interested stakeholders

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## **Open letter to network companies: Evaluation of digitalisation strategies**

Modernising the GB energy system through digitalisation is playing a key role in facilitating Net Zero and the Digital Economy. Ofgem also recognises that it has a central role in driving change across the energy sector and internally. In September 2019, we asked network companies to publish digitalisation strategies as part of their Business Plans for the next set of RIIO price controls.<sup>1</sup> Digitalisation is the process by which we improve the way we use data and digital technologies to generate value for stakeholders.

Network companies published their digitalisation strategies in December 2019. These demonstrate the progress network companies have already made, but also highlight the need for further effort in this area. This letter, together with the annex, provides our feedback on the digitalisation strategies. In it, we summarise common themes we have identified and actions for network companies to improve their digitalisation strategies. We also set out the next steps we will take. In addition to publishing this open letter, we will provide network companies with individual feedback on their digitalisation strategies.

## **Key findings from our review of digitalisation strategies**

- Network companies' objectives align with the recommendations made by the Energy Data Task Force report, "A Strategy for a Modern Digitalised Energy System"<sup>2</sup>.
- Energy industry digitalisation progress is behind other major GB economic contributors, but the digitalisation strategies show network companies are committed to achieving modernisation and focusing on data users' needs and ultimately those of consumers.
- Intentions are encouraging, but progress needs to be measured against deliverable outcomes. The Authority should monitor and assess network companies' progress.
- There are opportunities for network companies to better coordinate with each other, the wider energy sector and with other markets to better progress digitalisation.

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<sup>1</sup> <https://www.ofgem.gov.uk/publications-and-updates/digitalisation-strategies-modernising-energy-data>; and <https://www.ofgem.gov.uk/publications-and-updates/riio-2-business-plans-guidance-document>

<sup>2</sup> <https://es.catapult.org.uk/reports/energy-data-taskforce-report/>

## Next steps

We ask that network companies review and update their digitalisation strategies in light of the feedback provided in this open letter, our individual feedback letters and feedback from other stakeholders. To assist our monitoring and assess network companies' progress, we want the update to be framed as a "Digitalisation Strategy and Action Plan".

We would like network companies to publish their revised digitalisation strategy and action plan by 31 December 2020. Network companies should primarily focus on improving the following areas:

- providing clarification on senior ownership, accountability and board-level responsibility for delivery of the digitalisation strategy and action plan;
- identifying how each planned activity is driven by stakeholders'/users' needs
- describing how planned activities will be coordinated with other organisations; and
- providing details on a workforce plan for effective business transformation, such as upskilling, recruiting skills, diversity and embedding these into the operating model.

We are proposing to introduce a licence condition in the RIIO-2 price controls for transmission, gas distribution and the Electricity System Operator starting in April 2021, and separately for the RIIO-ED2 price control starting in April 2023. This will require network companies to publish updates to their digitalisation strategy annually and to report regularly on progress against their action plan. We also intend to introduce a licence condition requiring network companies to comply with "Data Best Practice" guidance<sup>3</sup>. The guidance is being developed as part of the Modernising Energy Data (MED) programme<sup>4</sup>, a collaboration between Ofgem, the Department for Business, Energy and Industrial Strategy (BEIS) and Innovate UK. We will provide more detailed information on both proposals in July at RIIO-2 Draft Determinations, and as part of the Sector Specific Methodology Consultation for RIIO-ED2.

Best Regards,



Steven Steer, Head of Data

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<sup>3</sup> The initial draft guidance is available via our website: <https://www.ofgem.gov.uk/publications-and-updates/we-are-creating-data-best-practice-guidance>

<sup>4</sup> <https://www.ofgem.gov.uk/about-us/ofgem-data-and-cyber-security>

## 1. Background

Evolving our energy system is part of the critical path to achieving Net Zero. The technologies needed to achieve a Net Zero energy system are typically at smaller scale, but greater in number (more decentralised) than traditional energy system technologies. They often include more features that must be controlled, and there are more actors participating in the creation and operation of these energy system assets. Together, these changes are increasing energy market complexity. The result is an increasing number of decisions for the market to make, in much shorter timeframes, as well as increasing complexity of individual decisions.

Deciding on how to deliver effective decarbonised energy services at the lowest cost needs good decisions. For good decisions to be made it must be possible to navigate the market complexity and to do this, decision makers require information and insight. Services that provide information and insight are in turn underpinned by effective use of data and this data is provided through the digitalisation of the energy system. Digitalisation covers a broad set of activities, but common to all are leveraging data and digital technologies to improve processes and generate value for all stakeholders.

The GB energy network is a core part of the overall energy system and it is owned and operated by a limited number of licenced private network companies. The high natural barrier to direct competition means network customers cannot switch to other providers and network companies are therefore key to enabling, unlocking and facilitating better, more efficient supply of energy, which plays a crucial role in delivering Net Zero. This makes it critical that customers, staff and stakeholders of these services are empowered to observe, scrutinise and effect change to current and future service offerings.

Ofgem, BEIS and Innovate UK created the independent Energy Data Task Force (EDTF) in 2018<sup>5</sup>. It was tasked with investigating how the use of data across the energy system could be improved. In June 2019 the EDTF published its report "A Strategy for a Modern Digitalised Energy System", setting out recommendations for effective use of energy data<sup>6</sup>. The recommendations are supported by Ofgem<sup>7</sup> and BEIS<sup>8</sup> who continue to work together, along with Innovate UK, to implement them and deliver the benefits to energy consumers. This joint work is being carried out under the Modernising Energy Data (MED) programme.

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<sup>5</sup> <https://www.gov.uk/government/groups/energy-data-taskforce>

<sup>6</sup> <https://es.catapult.org.uk/reports/energy-data-taskforce-report/>

<sup>7</sup> See page 6, <https://www.ofgem.gov.uk/publications-and-updates/ofgem-strategic-narrative-2019-23>

<sup>8</sup> See page 32, <https://www.gov.uk/government/publications/committee-on-climate-changes-2019-progress-reports-government-responses>

One of the recommendations made by the EDTF was that Ofgem should use its regulatory powers to set baseline expectations for network companies' digitalisation strategies<sup>9</sup>.

In September 2019, Ofgem asked all network companies regulated by the RIIO-1 price controls (gas and electricity transmission, gas distribution and electricity system operation network companies) to publish digitalisation strategies by 9<sup>th</sup> December 2019. This was requested as part of the business planning process for their next price control, RIIO-2, which will begin in April 2021. We also asked all electricity distribution network companies regulated by the RIIO-ED1 price controls to submit digitalisation strategies by the same date. As electricity distribution network companies are subject to a different price control timetable and their next price control, RIIO-ED2, will not start until April 2023, we asked them to submit their digitalisation strategies voluntarily, in advance of the business planning process for RIIO-ED2.

There was approximately 10 weeks between our request for the digitalisation strategies and the deadline for their publication. All network companies have published digitalisation strategies. For web links to the digitalisation strategies see the appendix to this document. The links are also available on our website and are correct as at June 2020<sup>10</sup>.

As part of our request, we asked network companies to collectively host a public stakeholder event, to gain feedback on their digitalisation strategies. The event was scheduled to take place on 13<sup>th</sup> March 2020 and was to be run by the Energy Networks Association (ENA), the trade body that represents network companies<sup>11</sup>. As a result of the outbreak of COVID-19 and its induced travel restrictions/uncertainty, the event could not go ahead but was replaced by a pre-recorded video, which can be viewed online<sup>12</sup>.

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<sup>9</sup> <https://es.catapult.org.uk/wp-content/uploads/2019/06/EDTF-Report-Appendix-1-Recommendation-Actions.pdf>

<sup>10</sup> <https://www.ofgem.gov.uk/publications-and-updates/digitalisation-strategies-modernising-energy-data>

<sup>11</sup> <https://www.energynetworks.org/>

<sup>12</sup> <https://www.energynetworks.org/info/modernising-energy-data.html>

## 2. Our approach to this review

We did not specify a format for the digitalisation strategies in September 2019. We wanted network companies to explore different approaches and to identify from those the most effective format for digitalisation strategies. This has meant there has been a variation in style amongst the digitalisation strategies. We have made no attempt to compare or “score” the digitalisation strategies against one another. We have tried to adopt a review approach, which takes account of the different styles of digitalisation strategies. We have done that by considering the digitalisation strategies against the recommendations made by the EDTF in its report.

We have also considered the following themes as part of our review:

- Approach and scope
- Governance
- Coordination
- Skills and workforce impact
- Decarbonisation
- Cost-benefit

These themes were taken from the wider narrative provided by the EDTF in its report. There is some overlap between the themes and recommendations. We will look to streamline our approach to reviewing digitalisation strategies when we are developing and consulting on the licence condition.

Our review is structured as follows:

- Section 3: the key findings from our review
- Sections 4 to 9: general feedback against each of the above themes
- Section 10: general feedback against the EDTF recommendations<sup>13</sup>
- Section 11: next steps
- Section 12: priority actions for improving digitalisation strategies
- Section 13: how readers can contact us about this work
- Annex 1: list of and links to the digitalisation strategies<sup>14</sup>

None of the feedback provided in the following sections is specific to a particular digitalisation strategy. We will provide network companies with specific feedback on their digitalisation strategies in individual feedback letters.

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<sup>13</sup> The EDTF’s recommendations were only published 3 months before our request for digitalisation strategies and that 6 months have elapsed since publication to this review. Where we have said the strategies fall short of the recommendations, we recognise that may be a result of timing.

<sup>14</sup> In addition to the published written documents, our review considered recorded material: an accompanying podcast recorded by one company and the video conference that replaced the ENA stakeholder event.

### 3. Key findings

- Network companies' objectives are broadly aligned to the findings of the Energy Data Task Force. However, there is evidently more work for the sector to do in order to accelerate progress and to fully implement all of the recommendations.
- Network companies acknowledge that their progress towards digitalisation is behind other major GB economic contributors. They are, however, committed to placing data users at the heart of their services for the ultimate benefit of consumers and have begun to put in places changes to facilitate that.
- In general, the digitalisation strategies are thorough and ambitious. Ofgem is pleased to see how much thought and planning has been put into describing the challenges and opportunities in digital and data improvement across the sector.
- While the intentions are encouraging, there is a lot of improvement to be made in terms of ensuring progress can be demonstrated. The Authority needs to monitor and assess companies' progress towards digitalisation against deliverable outcomes.
- In general, network companies digitalisation strategies' do not clearly present internal ownership and accountability, such as board-level ownership.
- There is need for better explanation around the planning, costs, benefits, performance indicators and risks associated with digitalisation strategies.
- There are opportunities to improve digitalisation through better coordination between each network company, between network companies and the energy market more general as well as and with other markets.
- However, there are encouraging local and sector-level collaborations by network companies with other network companies, other businesses and with academic and public institutions, such as the work with the Geospatial Commission's National Underground Assets Register<sup>15</sup>.

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<sup>15</sup> <https://www.gov.uk/government/news/map-of-underground-pipes-and-cables-designed-to-save-lives-and-prevent-major-disruption>

## 4. Review of approach and scope

In general, the digitalisation strategies are thorough and ambitious. The activities network companies included as part of their digitalisation strategies are:

- In-house improvement (infrastructure/applications/transformation/integration)
- Better management of physical assets using digital technologies
- Creation of an internal 'data lake' or 'data warehouse' infrastructure to handle information requirements
- Improvement of front-end user services, such as interfaces and new applications
- The adoption of innovations and emergent technologies, such as machine learning, artificial intelligence, internet of things and digital twins
- Sharing of data with other sector participants and working to ensure investment in digitalisation is externally focused.

However, we note that overall, 'digitalisation' as an exercise is not uniformly understood across the sector.

Broadly, we are comfortable with the level of detail supplied in the digitalisation strategies, however, we feel network companies could go further in certain areas, including those outlined below:

- A clear and discrete delineation of activities. These are, in general, unclear. As is the associated relative prioritisation of these activities.
- Key information associated with activities, such as costs, environmental impact, benefits and risk assessments, is generally absent.
- Milestone definitions, outcomes and outputs are generally unclear; programmes are explained at a high level, but it is not clear what success looks like.
- Benchmarking of the digitalisation strategies, in general, has not yet been done, for example against information management maturity assessments.
- The digitalisation strategies need to be more focused on their data users. This approach would better serve the energy market and ultimately consumers. Some user focus is apparent, but only to a limited extent. Information such as who key stakeholders/users are; their needs/priorities and; a relationship between those needs and the consequential activities/services (including granularity of data, and frequency of updates) included in the digitalisation strategies is generally absent.
- We would like to see network companies routinely using modern ways of working and engaging with stakeholders. We are pleased that there are some isolated examples, such as using videos and audio podcasts for communication.

As a rule, the digitalisation strategies describe high-level intentions, but do not demonstrate practical, governable and measurable plans for delivery. Also, in general it

comes across that the recommendations made by the EDTF were the primary focus for many digitalisation strategies as an end itself, rather than digitalisation being seen as an enabler, transforming their businesses and business models and enabling significant cost reductions across the sector. It is not always made clear where and how network companies see digitalisation as fitting in with its other business drivers for strategic change, as might be expected in a modern business (such as net zero, environment, financial, operational, culture and diversity, etc.)

## **5. Review of governance**

In general, it is unclear from the documents how the digitalisation programmes align with company governance. Typically, the digitalisation strategies did not identify who was responsible for implementing them or accountable for their success. We expect them to identify internal ownership and accountability, including board-level responsibility and/or ownership. We are concerned that the digitalisation strategies are not appropriately embedded in company governance structures. We consider this to be an important issue, given the transformative nature of digitalisation, and the shift in required capability.

We believe clear governance and leadership accountability is essential for digitalisation and associated business transformation activities. Limited insight has been given to articulate how success will be measured, and how delivery risk will be assessed and mitigated.

## **6. Review of Coordination**

Network companies explain in their digitalisation strategies how they are reaching out to peers and groups from outside the sector to explore the challenges in digitalisation. Many network companies are learning from their data and digital supply chain, such as software vendors and systems integrators. We are pleased to see cases of seeking knowledge and expertise from organisations who have made greater progress gaining value from data, and that there is an effort to assimilate learnings from sectors further advanced in digitalisation. Several network companies have carried out benchmarking of the progress they have made digitalising through running independent audits on their work.

There is limited evidence that network companies have identified or sought opportunities to work together to improve how data is used. We consider this particularly important given wider initiatives, such as the Whole Electricity System licence condition proposals<sup>16</sup>, where the nature of these proposals necessitates effective coordination.

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<sup>16</sup> <https://www.ofgem.gov.uk/publications-and-updates/statutory-consultation-proposed-whole-electricity-system-licence-condition-d177a-electricity-distributors-and-transmission-owners>



## **7. Review of skills and workforce impact**

Implemented effectively, the digitalisation strategies will have a lasting effect on the shape of the organisations themselves - and the energy sector as a whole. Jobs and operating models will change; new services will emerge, existing ones will evolve; diversity will drive better services. We feel the digitalisation strategies do not consider these implications in sufficient detail. This links to our concern that the digitalisation strategies are not properly integrated into strategic and operational plans, recruitment or corporate governance.

## **8. Review against decarbonisation**

Decarbonisation is repeatedly referenced across the digitalisation strategies as an important driver of change. The digitalisation strategies lack detail, however, on the extent the actions set out will have a positive or negative impact on decarbonisation targets.

Direct carbon emission contributions by planned activities are not addressed. For example, cloud data centres feature commonly, but these are known sources of carbon emissions and could contribute heavily to network companies' carbon footprint.

In terms of activities' potential to enable wider decarbonisation, there is scant modelling of how programmes individually contribute to targets. Further, there is insufficient description of how decarbonisation targets correspond to costs imposed on consumers. This is likely to result in lost opportunities, particularly in areas such as flexibility, where better price signals will rely on improved data and systems delivered by network companies.

## **9. Review of cost-benefit analysis**

Calculations on costs and benefits are largely absent from the digitalisation strategies. The digitalisation strategies provide little information about the benefits that would be delivered by them. Where benefits are identified, there is little information provided to support them. In particular, the digitalisation strategies don't relate the activities outlined in them to particular stakeholder groups, their needs and to identify distributional costs and benefits.

One company noted certain costs should be borne by data users, for example, where distributional benefits are uneven. None of the digitalisation strategies provided information, however, to support that conclusion. We expect identification of which stakeholders are responsible for the cost of services and to provide appropriate evidence to support decisions. In general network companies have been funded by consumers, and the data that their operations generate should be seen very much as a public good.

## 10. Review against the Energy Data Task Force recommendations

The majority of network companies incorporate the five top-level recommendations made by the EDTF in their digitalisation strategies. We have made general observations against each of the recommendation below as well as commenting on the ENA video<sup>17</sup>.

*Recommendation 1: Digitalisation of the Energy System – Government and Ofgem should direct the sector to adopt the principle of Digitalisation of the Energy System in the consumers’ interest, using their range of existing legislative and regulatory measures as appropriate, in line with the supporting principles of ‘New Data Needs’ ‘Continuous Improvement’ and ‘Digitalisation Strategies’.*

- In general, the digitalisation strategies are shaped well to meet this challenge.
- The concept of continuous improvement is well supported, and many network companies have planned their progress over a number of years.
- In principle, consumer/customer/stakeholder needs are highlighted as the focus for improving the use of data. There is, however, a lack of evidence that shows how the activities outlined are directly linked to meeting these needs.

*Recommendation 2: Maximising the Value of Data – Government and Ofgem should direct the sector to adopt the principle that Energy System Data should be Presumed Open, using their range of existing legislative and regulatory measures as appropriate, supported by requirements that data is ‘Discoverable, Searchable, Understandable’, with common ‘Structures, Interfaces and Standards’ and is ‘Secure and Resilient’.*

- This recommendation is well explained by most network companies, and is clearly a strategic priority.
- Most network companies explicitly embedded the principle of ‘presumed open’ into their digitalisation strategies.
- Some network companies raised concerns around the ‘presumed open’ principle and the potential for conflict with legislation governing the use of information, including the General Data Protection Regulation. We will respond to these concerns as we progress development of the Data Best Practice guidance<sup>18</sup>.
- Most network companies explained well how they are improving their own data infrastructure and internal sharing mechanisms.
- There is a lack of clarity on material steps for improving data sharing across the sector and its availability between network companies (and wider stakeholders) -

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<sup>17</sup> <https://www.energynetworks.org/info/modernising-energy-data.html> or go directly to <https://www.youtube.com/watch?v=MyZs0wxc0OI&feature=youtu.be>

<sup>18</sup> <https://www.ofgem.gov.uk/publications-and-updates/early-draft-data-best-practice-guidance-available>

although we were pleased to see examples of activities that are setting out to make progress.

- There is variation in how standards for security, privacy and service resilience will be maintained as digitalisation takes place and particularly as there is an increase in initiatives that span across organisations.

*Recommendation 3: Visibility of Data – A Data Catalogue should be established to provide visibility through standardised metadata of Energy System Datasets across Government, the regulator and industry. Government and Ofgem should mandate industry participation through regulatory and policy frameworks.*

- Digitalisation strategies recognise the need for a data catalogue and a number of network companies take steps to establish 'local' (i.e. individual company) data catalogues and adopt metadata standards (such as Dublin Core), but strategy development on this theme remains a work in progress.
- There is a lack of information on how network companies will get the most out of their 'local' data catalogues. For example, how network companies will ensure the catalogues are kept up to date and made available to external users, or how they will assist wider industry initiatives on cross-company data visibility.

*Recommendation 4: Coordination of Asset Registration – An Asset Registration Strategy should be established to coordinate registration of energy assets, simplifying the experience for consumers through a user-friendly interface in order to increase registration compliance, improve the reliability of data and improve the efficiency of data collection.*

- Network companies tend to be at an early stage in delivering this recommendation.
- The digitalisation strategies include internal work to improve information about network companies' own assets.
- It is generally unclear how network companies plan to participate in ensuring the wider challenge of coordinating asset registration across the energy system.

*Recommendation 5: Visibility of Infrastructure and Assets – A unified Digital System Map of the Energy System should be established to increase visibility of the Energy System infrastructure and assets, enable optimisation of investment and inform the creation of new markets.*

- Network companies, in general, are investing heavily in better digital management of assets across their own estates, this overlaps with our comments on Recommendation 4.

- There are a number of examples of how network companies make information and mapping services available for users, stakeholders and the wider sector.
- The end goal of a unified Digital System Map is referenced, but systemic improvement is viewed by most as challenging, and a long-term undertaking. We encourage network companies to identify and address barriers to a more rapid implementation and continuous improvement of the service.

*The ENA pre-recorded video*

- The recorded video demonstrating actual work on digital mapping<sup>19</sup> stood out as a good example of early progress on: iterative service delivery; collaboration and a common intention between network companies; de-risking digital service design through prototyping; re-use of existing services and enabling users/stakeholder feedback.
- The video does not explain next steps for this digital mapping work. We think this is an important gap, we are particularly keen to understand when early versions of such a service will start to actually benefit data users and ultimately consumers.

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<sup>19</sup> <https://www.youtube.com/watch?v=MyZs0wxc0OI&feature=youtu.be>

## 11. Next steps

We are asking network companies to review their digitalisation strategies and publish an update called “digitalisation strategy and action plan” in light of the feedback provided in this letter, the individual feedback letters, and feedback received from other stakeholders.

We would like network companies to publish their revised digitalisation strategy and action plan by 31 December 2020.

We set out in the following section the main ways we consider improvements could be made. In particular, however, we want network companies’ updates to include:

- providing clarification on senior ownership, accountability and board-level responsibility for delivery of the digitalisation strategy and action plan;
- identifying how each planned activity is driven by stakeholders’/users’ needs
- describing how planned activities will be coordinated with other organisations; and
- providing details on a workforce plan for effective business transformation, such as upskilling, recruiting skills, diversity and embedding these into the operating model.

We are proposing to introduce a licence condition in the RIIO-2 price controls for transmission, gas distribution and the Electricity System Operator starting in April 2021, and separately for the RIIO-ED2 price control starting in April 2023. This will require network companies to publish updates to their digitalisation strategy annually and to report regularly on progress against their action plan. We are also proposing to introduce an obligation linked to the work we are currently undertaking to develop “Data Best Practice” guidance.

We will provide more information on both proposals at RIIO-2 Draft Determinations in July 2020 and as part of the Sector Specific Methodology Consultation for RIIO-ED2 in July 2020. Network companies will also be invited to attend and participate in Licence Drafting Working Groups that will consider the terms and scope of the new licence conditions. We will write to network companies separately to provide them with further details about the working groups and how they can participate.

## 12. Priority improvements to digitalisation strategy and action plans

We would like network companies to evidence the following actions in their updates to be published on 31 December 2020.

Actions 8 to 12 reflect work that is part of Ofgem's and Government's MED programme. Network companies are already taking steps to support this work and those steps should be reflected in the digitalisation strategy and action plans.

- 1. Governance: providing clarification on senior ownership, accountability and board-level responsibility for delivery of the digitalisation strategy and action plan.** We view this as top priority and a key enabler. We believe it is appropriate for digitalisation to be a routine part of board-level working and board-sponsored governance.
- 2. Needs-driven: identifying how each planned activity is driven by stakeholders'/users' needs.** Include evidence for how all planned investments and ongoing services relate to the needs of their direct users and also how their ultimate benefits similarly relate to wider stakeholders' needs and therefore the objectives of the strategy. We urge an open-minded view as to who the 'users' of energy systems data might be. For example, we anticipate that increasingly the users of energy system data are intertwined with many other systems, such as those of other utilities, finance, transportation and housing.
- 3. Coordination: describing how planned activities will be coordinated with other organisations.** Going forward, we would like to see a commitment to identifying opportunities to improve interoperability and the delivery of data and digital services through coordination or potentially collaboration. This may be through sector-specific or cross-sector working. We would also like network companies to think about collaboration opportunities outside the energy sector. This might include sectors such as housing, transport and telecommunications and the potential to link up with complementary initiatives in those sectors<sup>20</sup>.
- 4. Workforce planning: providing details on a workforce plan for effective business transformation, such as upskilling, recruiting skills, diversity and embedding these into the operating model.** We recommend that workforce plans are included. These should cover topics such as how:

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<sup>20</sup> Such as Centre for Digital Built Britain work around Digital Twins (<https://www.cdbb.cam.ac.uk/>) and the Prospering from the Energy Revolution PFER programme, led by Innovate UK (<https://www.ukri.org/innovation/industrial-strategy-challenge-fund/prospering-from-the-energy-revolution/>).

- roles and responsibilities will be kept relevant as transformation progresses
  - adequate training will be offered to staff to ensure they continue to have the skills demanded by the services the network company offers
  - new skills will be identified and brought in to meet the needs of data services and an increasingly digitalised energy sector. This is likely to require recruitment from non-traditional sources.
5. **Define success: reach a common understanding with network company stakeholders of what success looks like, and reflect learnings from this into the digitalisation strategies and action plans.** This will help to reduce uncertainty about what effective digitalisation looks like and whether it has been achieved. This will require network companies to work with one another, as well a wide range of stakeholders to clarify expectations.
6. **Service design: demonstrate adherence to recognised practices when creating and improving data and digital services.** We recommend the network companies explain the practices and standards they are adopting when investing in their services. For example, at Ofgem, service design follows the service manual provided by the UK Government’s centre of excellence, Government Digital Service (GDS)<sup>21</sup>. We note, where Ofgem takes a view on service design, GDS will be our default point of reference. We will similarly use our RIIO-2 Cyber Resilience Guidelines<sup>22</sup> to inform our position on this theme.
7. **Measure Progress: set objectives and include a framework for assessing progress towards those. Review and report on that progress.** We encourage targets to be a balance between robust governance for sustained long-term benefits and rapid progress that delivers value to service users as early as possible. This might also include activities such as benchmarking against services outside of the energy sector to ensure digitalisation opportunities are not missed. We also expect updates to the digitalisation strategy and action plan to include a roadmap of the action plan.

Below are workstreams from the MED programme and suggested actions for how the digitalisation strategy and action plans might be updated to support these. Ofgem is aware that these actions are generally already taking place in practice, but this is not always clear in the published digitalisation strategies.

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<sup>21</sup> <https://www.gov.uk/service-manual>

<sup>22</sup> <https://www.ofgem.gov.uk/publications-and-updates/riio-2-cyber-resilience-guidelines>

8. **Data Best Practice guidance**<sup>23</sup>. The MED programme is developing principles-based guidance. Work-in-progress drafts of the guidance are publically available. Going forward, Ofgem is minded to create a licence condition for network companies to follow this guidance in the RIIO-2 price controls for transmission, gas distribution and the Electricity System Operator starting in April 2021, and separately for the RIIO-ED2 price control starting in April 2023. We recommend the network companies review the guidance, engage with the associated consultation process and consider including a commitment to follow its expectations as part of their digitalisation strategy and action plan update.
  
9. **Modernising Energy Data Access (MEDA)**<sup>24,25</sup>. This part of the MED programme is an Innovate UK funded competition, which is from their Prospering from the Energy Revolution (Pfer) programme. The competition is seeking a solution to the inter-operation of data between data/digital services provided by different organisations, particularly where the barriers to market entry are high. The solution delivered might reasonably be beneficial to the network companies' and therefore should be considered for inclusion in the digitalisation strategies and action plans.
  
10. **Energy Data Visibility Discovery**. As part of the MED programme, BEIS has asked the Office for National Statistics (ONS) to carry out exploratory work on how to deliver services for effective data visibility across the energy sector. We recommend the digitalisation strategy and action plan update includes how the network company will work to continuously improve the visibility of its data and how this will be coordinated with other organisations, including this MED programme work.
  
11. **Asset registration**. The EDTF report highlighted many challenges that relate to a lack of coordination over how energy system assets are logged in registers and how these registers are made available to energy system data users. One practical step likely to improve users' experiences with asset registration services is for service owners to follow the principles of the Data Best Practice guidance. We recommend the network companies clarify their views on their own needs from and responsibilities for asset registration services. We would like network companies' to clearly articulate whether Data Best Practice guidance can support meeting these needs and responsibilities. If they see merit, we expect Data Best Practice to be integrated into updates to their digitalisation strategy and action plan.

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<sup>23</sup> <https://www.ofgem.gov.uk/publications-and-updates/early-draft-data-best-practice-guidance-available>

<sup>24</sup> <https://www.ofgem.gov.uk/publications-and-updates/19m-modernising-energy-data-access-competition>

<sup>25</sup> <https://innovateuk.blog.gov.uk/2020/05/29/modernising-energy-data-access-and-the-winners-are/>



**12. Digital Mapping.** This is an ENA-led effort that is prototyping a digital mapping service<sup>26</sup> that is to provide an online geographical map overlaid with energy system assets and information associated with them. A prototype of this has been delivered in a short space of time and we view it as a good proof of concept basis for demonstrating the 'art of the possible'. This customer-facing service critically depends on wider work, such as underlying technical architecture and data modelling. We would like to see the updated digitalisation strategy and action plans defining the relationship between this service and associated digitalisation activities. We would also like to see explained how this service is being coordinated between the network companies and with complementary initiatives (for example those that we have referred to throughout this letter). As mentioned before, we would like network companies to identify and address barriers rapid delivery more extensive functional digital mapping.

### **13. If you have comments for Ofgem relating to this letter**

Any questions relating to this letter should be addressed to: [Steven.Steer@ofgem.gov.uk](mailto:Steven.Steer@ofgem.gov.uk)

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<sup>26</sup> <https://www.energynetworks.org/info/modernising-energy-data.html>

## **Annex 1: List of the digitalisation strategies we reviewed**

The versions reviewed are attached as accompaniments to this letter. These were all first-versions published in response to Ofgem’s request made as part of the Ofgem Call for Evidence on the Electricity Transmission, Gas Transmission, Gas Distribution and Electricity System Operator Business Plans for RIIO-2<sup>27</sup>. We also included the ENA video<sup>28</sup> in this review, this was created as a response to our request for stakeholder engagement.

### **Gas Transmission Network Owner**

National Grid Gas Transmission (NGGT) (*this is combined with NGET*)<sup>29</sup>

### **Electricity System Operator**

National Grid Electricity System Operator (ESO)<sup>30</sup>

### **Electricity Transmission Network Owners**

National Grid Electricity Transmission (NGET) (*this is combined with NGGT*)

Scottish Hydro-electric Transmission (SHE-T)<sup>31</sup>

Scottish Power Transmission (SPT) (*this is combined with SPD & SPM*)<sup>32</sup>

### **Gas Distribution Owners**

Cadent<sup>33</sup>

Northern Gas Networks (NGN)<sup>34</sup>

Scotia Gas Networks (SGN)<sup>35</sup>

Wales and West Utilities (WWU)<sup>36</sup>

### **Electricity Distribution Owners**

Scottish Power Distribution (SPD and SPM) (*this is combined with SPT*)

Western Power Distribution (WPD)<sup>37</sup>

UK Power Networks (UKPN)<sup>38</sup>

Electricity North West (ENWL)<sup>39</sup>

Scottish & Southern Electricity Network (SSEN)<sup>40</sup>

Northern Powergrid (NPg) <sup>41</sup>

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<sup>27</sup> <https://www.ofgem.gov.uk/publications-and-updates/call-evidence-electricity-transmission-gas-transmission-gas-distribution-and-electricity-system-operator-business-plans-riio-2>

<sup>28</sup> <https://www.energynetworks.org/info/modernising-energy-data.html>

<sup>29</sup> <https://www.nationalgridet.com/document/131766/download>

<sup>30</sup> <https://www.nationalgrideso.com/document/157931/download>

<sup>31</sup> <https://www.ssen-transmission.co.uk/media/3719/digital-strategy.pdf>

<sup>32</sup> [https://www.spenergynetworks.co.uk/pages/our\\_digitalisation\\_strategy.aspx](https://www.spenergynetworks.co.uk/pages/our_digitalisation_strategy.aspx)

<sup>33</sup> <https://cadentgas.com/nggdwsdev/media/Downloads/reports/Data-and-Digitalisation-Strategy.pdf>

<sup>34</sup> <https://www.northerngasnetworks.co.uk/wp-content/uploads/2019/12/A12-NGN-RIIO-2-Digitalisation-Strategy.pdf>

<sup>35</sup> <https://www.sgnfuture.co.uk/wp-content/uploads/2020/01/Appendix-011a-SGN-Digitalisation-Strategy.pdf>

<sup>36</sup> <https://www.wwestutilities.co.uk/media/3571/wales-west-utilities-digitalisation-strategy.pdf>

<sup>37</sup> <https://www.westernpower.co.uk/downloads-view/74482>

<sup>38</sup> [https://www.ukpowernetworks.co.uk/-/media/files/digital-consultation/20175-ukpn-digital-strategy\\_final2019.ashx](https://www.ukpowernetworks.co.uk/-/media/files/digital-consultation/20175-ukpn-digital-strategy_final2019.ashx)

<sup>39</sup> <https://www.enwl.co.uk/globalassets/stakeholder-engagement/documents/consultations---have-your-say/digital-strategy-consultation-v3.pdf>

<sup>40</sup> <https://www.ssen.co.uk/DigitalStrategy/>

<sup>41</sup> <https://www.northernpowergrid.com/asset/0/document/5262.pdf>