An indicative plan for a Future System Operator

ESO transformational activities, milestones and costs

Annex 5
29 April 2022

nationalgridESO

Contents

Executive summary

Introduction

Climate change is the challenge of a generation and decarbonisation of the energy system is integral to meeting it. The time to act is now. An unparalleled change is required in the energy system, in consumer behaviour and in technological progress. The right governance, policy and regulatory frameworks are also required to drive the alignment needed for net zero. While significant progress has been made in the energy transition, there is still more to be done. Delivering a 'net zero ready' energy system requires an entity capable of addressing challenges from a whole energy system perspective. There is a need for coordination across the energy system, and an organisation that can translate decarbonisation policy into immediate strategy.

Recent events have also highlighted the importance of energy security to our nation and the impact that the cost of energy has on the life of every citizen. Rapidly developing more low carbon, affordable and secure sources of energy has never been more critical. This again underlines the importance of a central organisation designing and coordinating across the whole energy system, so that progress can be made as efficiently and rapidly as possible.

It is against this backdrop that BEIS and Ofgem consulted on setting up an expert, independent Future System Operator with responsibilities across both the electricity and gas systems to start with, and the ability to expand its remit to additional energy vectors when needed. This organisation will be able to drive progress towards net zero, deliver value for consumers by enabling potential cost reductions of up to £3 billion through improved whole energy system decision-making[1], and support energy security.

As part of the ESO's RIIO-2 Business Plan 2 submission, Ofgem asked to see an indicative plan for the transformational activities the ESO would have to undertake should there be a decision to change its governance arrangements. This submission sets out the key activities, with indicative dates, timeframes and costs, of transitioning to a Future System Operator. Since the publication of this guidance, on 6 April 2022 Ofgem and BEIS confirmed their intention to proceed with the creation of a Future System Operator[2].

To maximise value and drive rapidly towards net zero, the move to a Future System Operator should be delivered through a phased implementation that starts immediately. This would begin with detailed design activities, separation planning and implementation, followed by a phased move of back office operations to transitional service agreements (TSAs). By the end of the implementation, the organisation would be fully independent of National Grid plc (without the support of TSAs) and would have employees and the appropriate legislation in place to fulfil new and enhanced industry roles. A phased implementation beginning immediately is not only cost effective, but also unlocks the value of the Future System Operator earlier, as well as reducing uncertainty for our people and the wider industry. Separating programme delivery into phases

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[1] Source:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1066721/future-system-operator-consultation-impact-assessment.pdf
[2]
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1066720/future-system-operator-consultation-govt-response.pdf

also enables a high degree of deliverability and reduces undue risk to the ESO's core operations, particularly recognising our continued role in maintaining current world-class system operation and protecting security of supply.

Our goal for the Future System Operator is an innovative, world-leading organisation at the heart of Great Britain's energy system and the delivery of net zero. An organisation that supports security of supply and resilience; provides a whole energy system view to optimise decision-making and action in the decarbonisation of power, heat and transport; leverages data and digital technology to engage transparently across industry and society; and acts as a trusted partner and adviser to governments, regulators and industry, with deep engineering, data and technology expertise at its core. We are excited to submit our credible, deliverable and affordable plan to realise this goal.

Our approach

In developing this submission, we used the decisions set out in the joint BEIS and Ofgem consultation response published on 6 April 2022 as the basis of our work. In practice, this means the creation of a new standalone organisation. At first this organisation will see some incremental additions to the roles and activities the ESO undertakes today, plus three strategic gas roles (long-term forecasting, strategic network planning and market strategy), while continuing to develop a whole energy system mindset. Over time the role of the Future System Operator will expand to include other new and enhanced industry roles proposed by BEIS and Ofgem. In this submission, we have planned and costed for these where we have reasonable clarity on the likely scope; specifically, whole energy system solutions, coordinated system planning and network development, driving competition in energy networks, energy markets and the advisory role. We anticipate that these roles will continue to evolve beyond the establishment of the Future System Operator, as key policy decisions are made and the energy system continues to transform. We have also planned and costed our proposal for an Office of Energy Resilience and Emergency Management, which we believe could be a core element of the new organisation.

Alongside this, we have designed the appropriate back office functions to support these new and existing areas of responsibility, while providing flexibility for the Future System Operator to evolve and grow. This will be a significant area of transformation from a cost and planning perspective, as we stand up the people, process and system capability needed to run a new standalone organisation outside of National Grid plc.

The key outcomes of this work are underpinned by a flexible set of assumptions and principles that also help set the boundary for the costing and planning activity. Our submission sets out:

- An indicative high-level 'enduring state' model for the Future System Operator (i.e., fully independent of National Grid plc without the support of TSAs and including new industry roles) as well as an indicative model for 'day one' (i.e., independent of National Grid plc but supported by TSAs where necessary). While this submission includes an initial view of the potential agreements that may be needed, TSAs will be developed during the design phase by National Grid plc, in consultation with the ESO. We anticipate that for most activities, they will be in place for no longer than 24 months.

- Activities needed to deliver each of the high-level designs, and a view on the service delivery model including any assumptions around potential transitional arrangements.

- An indicative view of the day one and enduring state run costs for the organisation, plus potential transitional activity costs (i.e., one-off costs), noting that there are some areas where we do not yet have enough granularity to fully cost activities.

An overview of our plan

Our submission takes a pragmatic yet ambitious approach to the transition to a Future System Operator, with a plan that is both deliverable and affordable but can move at pace. We propose a phased implementation of the transformational activities required to quickly and safely establish the ESO as the Future System Operator. This enables the ESO to safely plan to expand its remit to take on the new industry roles of the Future System Operator, while moving swiftly reduces uncertainty for our people and stakeholders, prevents delay in action on net zero and unlocks consumer value as early as possible.

The key insights from our submission are:

- We have designed an organisation that will be flexible, agile and innovative; enabling it to navigate uncertainty and drive the transition to net zero, supporting governments, stakeholders and industry. Our plan establishes the right foundation to take on further new industry roles if and when such policy decisions are made. The plan builds on the ESO's unique position at the heart of the energy industry, acting as an enabler for greater industry collaboration and alignment.

- For the Future System Operator to play its crucial role in designing and driving optimal solutions across the energy system it must be technically excellent – with deep knowledge of each energy vector and the ability to optimise combinations and trade-offs across these. A key evolution for our people and ways of working will be to fully move towards a whole energy system mindset and culture across the business. Our plan includes some early recruitment to implement whole energy system thinking in areas such as network planning and markets, as well as strategic roles to consider other energy vectors and enabling technologies in the future.

- The Future System Operator will need to stand up its own capability in back office functions that are fundamental to the running of any organisation. Our design of these functions reflects the scale, culture and ambition of the Future System Operator, without compromising service quality. Establishment of back office teams will be subject to discussion and agreement with National Grid plc and will follow the standard consultation process where required.

- Establishing the Future System Operator as a data, technology and digitally enabled business means that transforming our IT capability forms a large and ambitious part of our plan. Transferring capability over time minimises operational risk while giving the Future System Operator IT independence, accountability, and control.

- Retaining our talented colleagues and attracting the new skills and capabilities required to drive towards net zero must see the Future System Operator establish itself as the 'net zero employer of choice'. A critical challenge will be to minimise uncertainty in the transition, clarifying impacts for individuals as quickly as possible to ensure we retain and grow talent.

Table 1 below summarises estimated costs to run the new organisation, as well as the one-off costs incurred by the ESO in transitioning and transforming. These costs are indicative and based on a set of assumptions. They will change as we get greater clarity on the scope of the roles and responsibilities the Future System Operator will become accountable for, and on the approach to separating from National Grid plc.

It is important to note that our plan and its associated costs are entirely separate from any costs incurred by National Grid plc (e.g., costs to the relevant entities involved in transacting the sale/purchase of the ESO). Typical activities associated with the sales process, such as setting the perimeter, will be subject to discussion and agreement between National Grid plc and the buying entity. It also does not include the costs National Grid plc may incur during any implementation process.

Table 1: Estimated ESO costs

Estimated ESO costs (£m 18/19 prices)	
As-is run the business costs (per annum)	£189 million
Standalone run the business costs (per annum)	£210 - £223 million
One-off transition cost (range)	£105 - £145 million

Programmes at this stage in their development would typically allow for 30 per cent uplift to cover variation in one-off transition costs. This would bring the range of estimated one-off costs to between c.£135 million and c.£185 million.

Figure 1 below outlines the indicative high-level transition timeline, highlighting some of the key ESO separation activities. The transition plan has assumed dates for illustrative purposes to provide a view on a possible pathway to implementation. Actual dates would be subject to joint discussion and agreement with BEIS, Ofgem and National Grid plc. We have suggested that establishing the independence of the ESO from National Grid plc could take place by October 2023, dependent on progress in key areas. From that date, the new organisation would have the ability to position itself as the Future System Operator with external stakeholders, undertake key culture and branding activities, and begin to take on new roles or elements of roles that are not dependent on legislation.

Further new roles could then be developed once these had been enabled by legislation and the necessary licence and code changes. We have assumed full separation activities, including establishing standalone capability with no support from TSAs, will be completed between October 2025 and April 2026.
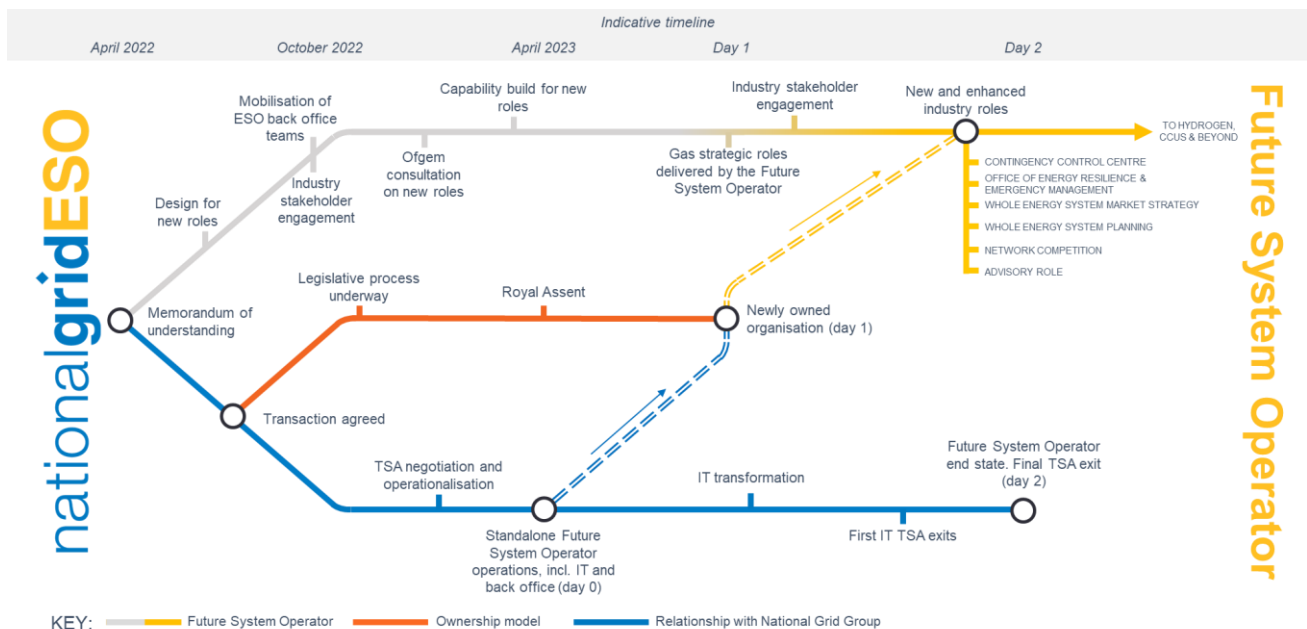
Figure 1: High-level transition and transformation plan

The transition to a Future System Operator is not solely within our control but for the purposes of this submission we have focused on ESO-led activities. Where activities are dependent on external factors, we have referenced these to present one potential pathway to implementation. Elements outside our direct control which could affect timings include licence changes, transaction process, legislative timetable, and activities to be completed by National Grid plc and other relevant parties.

Following the consultation decision from BEIS and Ofgem, there is a joint desire from National Grid plc and the ESO to identify opportunities to accelerate the transition to a Future System Operator. In the event of a potentially accelerated scenario, we believe there are six key factors to consider:

- More TSAs might be required.
- Ability to recruit for some key roles ahead of day one.
- Accelerated separation planning and readiness interactions with National Grid plc.
- Requirement to mobilise for the next phase as soon as possible.
- Validation of the critical path to day one.
- Clarity on the activities that the new owner will need to undertake on their side from day one.

Further discussion and engagement between the Government, Ofgem, National Grid plc and the ESO will need to happen in the next few months to identify and validate the opportunities for acceleration.

Conclusion

It is a time of unprecedented change in the energy industry; we need to make rapid progress towards net zero in a way that is efficient and fair for consumers while maintaining energy security. To help navigate this change, there is a need for an independent organisation capable of providing clear strategic direction and driving whole energy system solutions. Our plan will deliver a Future System Operator ready to meet this challenge.

We have developed a proposal for a phased implementation that provides a cost-effective approach to the transition to a Future System Operator with a high degree of deliverability, without presenting undue risk to the core operations of the ESO today. The plan builds on our role as a natural convenor for industry, taking on greater responsibilities to drive coordination, collaboration and alignment in the creation of whole energy system solutions. An independent Future System Operator can further demonstrate impartial decision-making that places consumer fairness and value at the heart of all its activities.

A Future System Operator with the right roles and capabilities to take a fully whole energy system perspective and the appropriate governance to enable agility and innovation, will play a vital role in the energy system's drive to net zero.

Ofgem's direction in the ESO's RIIO-2 Business Plan Guidance requested that the ESO should include an indicative plan for the transformational activities it would have to undertake should there be a decision to change its governance arrangements.

This submission therefore focuses only on the ESO activities and costs. For the avoidance of doubt, the plan and costs do not include the likely activities and costs borne by National Grid plc.

Separation of the ESO cannot be achieved without the support of National Grid plc and further work will be required to provide a complete view of the activities and associated costs required to deliver the Future System Operator.

Introduction and document structure

As part of the ESO's RIIO-2 Business Plan 2 submission, Ofgem asked to see an indicative plan for the transformational activities the ESO would have to undertake should there be a decision to change its governance arrangements. This submission sets out the key activities, with indicative dates, timeframes and costs of transitioning to a Future System Operator.

We have structured this document to give a clear overview of these areas at both a programme level and in greater detail. Sections 1 and 2 introduce the key elements of our plan, explaining our approach and methodology. Section 3 covers the importance of our people and how we will reflect their needs in the transition. Sections 4, 5 and 6 then consider operational and back office functions in greater detail, explaining existing capability and new roles for the Future System Operator, as well as the optimum design and transition of back office functions. Section 7 gives a detailed insight into the financial implications of our plan, including indicative one-off transition costs and a view of the potential new standalone run the business costs for the Future System Operator. Finally, section 8 outlines our proposed transition plan to become a Future System Operator, considering key milestones and transformation governance.

Section 1. Transforming to a Future System Operator

This section describes the capabilities we believe will be needed to set the Future System Operator up for success, and our plan to enable this transformation.

1.1. Capabilities of the new organisation

A capability model is an integrated and comprehensive view of what a business does and can do. It provides a logical and granular grouping of business abilities and encompasses technology, data, people and process. However, it is not a functional or organisational model.

In order to define our plan and costs, we have designed a capability model for the Future System Operator, independent from any parent entity. This model has allowed us to test how agile, flexible and innovative the future organisation will be. The model includes the following levels:

- Level 0 refers to major capability areas. As a fully independent and standalone business, the Future System Operator will have six major capability areas:
    - Operational Business
    - Finance
    - Human Resources (HR) People Capability & Culture
    - Central Services
    - Corporate Services
    - Information Technology (IT) & Data
- Level 1 describes the capability needed to achieve the outcomes of each of the major capability areas. For example, Finance requires capabilities including Tax, Treasury and Operational Finance to deliver its outcomes.
- Level 2 refers to a further subgroup of capabilities that work towards achieving the goal of that area. For example, Treasury requires cash forecasting and liquidity management, risk management and debt management capabilities.

Figure 2 shows levels 0 and 1 of the defined enduring state capability model for the Future System Operator. Further detail on how this capability will be enabled is provided in the subsequent sections.
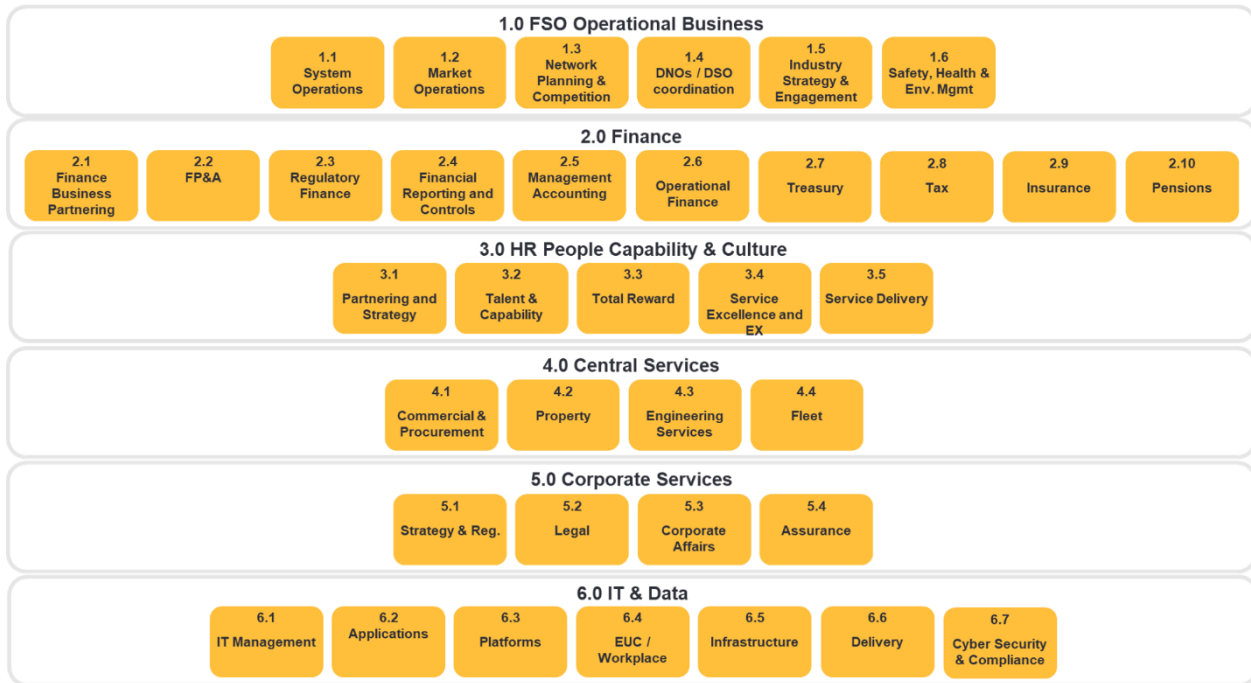
1.0 FSO Operational Business

| 1.1 System Operations | 1.2 Market Operations | 1.3 Network Planning & Competition | 1.4 DNOs / DSO coordination | 1.5 Industry Strategy & Engagement | 1.6 Safety, Health & Env. Mgmt |

2.0 Finance

| 2.1 Finance Business Partnering | 2.2 FP&A | 2.3 Regulatory Finance | 2.4 Financial Reporting and Controls | 2.5 Management Accounting | 2.6 Operational Finance | 2.7 Treasury | 2.8 Tax | 2.9 Insurance | 2.10 Pensions |

3.0 HR People Capability & Culture

| 3.1 Partnering and Strategy | 3.2 Talent & Capability | 3.3 Total Reward | 3.4 Service Excellence and EX | 3.5 Service Delivery |

4.0 Central Services

| 4.1 Commercial & Procurement | 4.2 Property | 4.3 Engineering Services | 4.4 Fleet |

5.0 Corporate Services

| 5.1 Strategy & Reg. | 5.2 Legal | 5.3 Corporate Affairs | 5.4 Assurance |

6.0 IT & Data

| 6.1 IT Management | 6.2 Applications | 6.3 Platforms | 6.4 EUC / Workplace | 6.5 Infrastructure | 6.6 Delivery | 6.7 Cyber Security & Compliance |

Figure 2: Enduring state capability model for the Future System Operator

1.2. Our plan to get there

The creation of the Future System Operator will be a significant transformation programme that must be delivered alongside considerable industry change, without compromising security of supply or continued delivery of the ESO's extensive and wide-ranging commitments. At this stage, our plan is indicative and has assumed dates to provide one possible pathway to implementation. When we have greater clarity on timelines, further work will be needed in the next phase of the project to understand if this transformation programme will have any impact on the timing of the ESO's RIIO-2 deliverables. More broadly, we are mindful that as the amount of wider industry transformation increases, the effects of concurrent change can become compounded. We therefore believe a phased implementation to establish the Future System Operator is the best approach to mitigate undue risk.

The duties and activities of the Future System Operator will be set out in legislation, new and updated licences, and codes. It will be crucial that the regulatory framework is developed holistically so that it provides a clear set of expectations for the organisation. The framework should ensure accountabilities are explicitly defined, not just for the Future System Operator but also for Ofgem and BEIS, particularly in key areas such as security of supply.

Our plan outlines a credible and deliverable approach to transform the organisation quickly and reliably. In our plan, day one describes how we think the organisation could look on the first day under new ownership, likely still supported by transitional service agreements (TSAs). These agreements would predominantly be for IT and other back office services, such as finance and HR, where it hasn't yet been possible or efficient to set up independent capability. While this submission includes an initial view of the potential agreements that may be needed, TSAs will be developed during the design phase by National Grid plc, in consultation with the ESO. We anticipate that for most activities, they will be in place for no longer than 24 months. Our plan for day one is based on the decisions set out in the joint BEIS and Ofgem consultation response.

Day two describes an enduring state for the Future System Operator with new and enhanced industry roles, and where there are no longer any TSAs in place. Should timelines shift significantly due to the transaction, licence changes or the legislative process, it may have an impact on when the Future System Operator can take on certain new industry roles.

Figure 3 defines the key milestones, with assumed dates for illustrative purposes. We have set out an ambitious plan that could see the Future System Operator established in October 2023. However, actual dates would be subject to joint discussion and agreement with BEIS, Ofgem and National Grid plc. The transition to a Future System Operator is not solely within our control and delivery timelines will be impacted by numerous factors, such as licence changes, transaction process, legislative timetable, and activities to be completed by National Grid plc and other relevant parties.
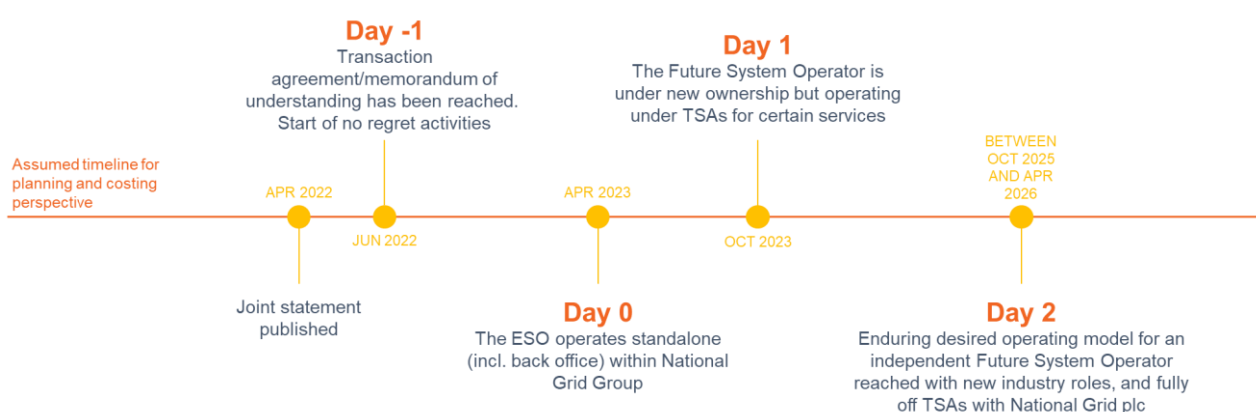

Figure 3: Definition of key milestones

Given the scale of work and the level of capability build required to ensure that the Future System Operator is set up for success, our plan prioritises new industry roles focused on achieving net zero on time and in the most cost-effective way for consumers. These roles are also where there is greater clarity on what the Future System Operator's responsibilities should be and where it can add significant value.

Our design for new industry roles is based on the decisions set out in the joint BEIS and Ofgem consultation response. We anticipate that the scope of roles will change as responsibilities are clarified when legislation, licences and codes are drafted, as well as the associated industry engagement. Further detailed work would be needed to refine our assumptions in the next phase of the project.

1.2.1. A whole energy system mindset

The Future System Operator requires both deep knowledge of energy sectors and the ability to look for combinations and trade-offs across vectors. It must be resourced with capable employees with experience across all vectors. Whole energy system thinking will need to be at the core of the organisation, embedded in its culture and the mindset of its people. This will be a fundamental shift, impacting all areas of the organisation. While our submission establishes the foundations and first steps of this transformation, we anticipate that this will be an ongoing journey for the Future System Operator which will develop over time.

Developing whole energy system solutions starts with the adoption of strategic gas roles in network planning and markets. This indicative plan ensures that the Future System Operator is ready to take accountability for work such as long-term network capability assessments, developing market strategy and publishing documents such as the Gas Ten Year Statement and the Gas Market Plan on day one. Recruitment for these teams will need to start ahead of day one so the new organisation has sufficient time to build the required critical knowledge and expertise. To support this, it may be appropriate for members of these teams to be seconded to National Grid Gas to accelerate their learning and development of key skills.

Building capability in these areas will begin to enable analysis and understanding across multiple energy vectors. But the Future System Operator cannot only be an electricity-based organisation with a few gas roles added to it. Where the new organisation can add value is by bringing these processes together to develop new insights and strategies for whole energy system planning and market development. This will unlock value for current and future consumers through more effective strategic planning, management and coordination across the energy system, enabling significant savings. While such a shift will take time, we are proposing to recruit people with the right capability and expertise to begin to do this on day one.

As outlined in our response to the Energy Future System Operator consultation, we believe an Office of Energy Resilience and Emergency Management could be a core element of the Future System Operator. As well as providing strategic management of emergencies, it could also perform resilience and standard assessments across the energy networks, identifying where there are interactions and opportunities, as well as addressing vulnerabilities. Initially at the point of 'role go-live', this Office would consider gas and electricity only, but could expand to consider other vectors as they begin to have a more significant impact on the networks.

While long-term roles in other vectors, such as hydrogen and CCUS, may not be clarified for several years, the new organisation will need a deeper understanding of future opportunities and challenges across the whole energy system from the start. Our plan includes recruiting people to begin thinking about whole energy in areas beyond network planning and markets. For example, we will need to consider new aspects to our licences and potentially input to regulatory and legislative processes. All of these areas of work need to be approached from a whole energy systems mindset, drawing in learning from recent projects, such as project RIGSSE[3], to consider where new whole energy system accountabilities could be appropriate for a Future System Operator. We know that as the energy system further transforms, the role of the Future System Operator will evolve. We will continue to build on our ability and ambition to look right across the energy system and solve problems in new and innovative ways.

Reflecting our new whole energy system remit will also be key in our culture and branding. We have planned for upfront work in this space to prepare our people for day one. This will provide a strong whole energy systems foundation for the Future System Operator, building a culture and mindset that can identify and act on whole energy system opportunities, and setting the organisation up to make strategic decisions about other energy vectors and enabling technologies in the future.

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[3] Formed in 2021, the Review of the Impact of Gas Supply Shortage on Electricity (RIGSSE) was set up to review gas and electricity interactions during times of system stress.

1.2.2. Driving competition

Driving competition will be a key element of delivering network development in the most efficient and cost-effective way for net zero and consumers. While the preparatory work for Early Competition is discussed in the core RIIO-2 Business Plan 2, our focus in this submission is on the Procurement Body role. We believe this element is distinct from other Early Competition roles, and particularly suited to the Future System Operator given stakeholder comments around the benefits of an independent party undertaking this role. Our submission includes building the capability needed to deliver one competition in electricity over three years, alongside the specialist contract resource and IT investment.

1.2.3. A trusted partner and adviser

With the whole energy system mindset of the Future System Operator, combined with its technical knowhow, we have also prioritised the advisory role. We believe there is clear value in an expert, impartial voice providing targeted technical advice, particularly to facilitate decision-making and policy definition. Our plan for this role notes that Ofgem and BEIS will be able to seek advice, analysis and information from the Future System Operator, focused on areas of energy strategy and policy. We propose to start with a small team with expertise in analysis, stakeholder engagement, and knowledge of energy markets and zero carbon operations. This team will form the basis of the advisory role, drawing on further expertise from across the Future System Operator as appropriate.

1.2.4. Establishing standalone back office capability

The ESO currently uses support services that are shared across all the National Grid plc businesses. These include IT, property, HR, procurement, corporate affairs, legal and finance. These functions are fundamental to the running of any organisation and in becoming fully independent outside of the National Grid plc, the Future System Operator would need to stand up its own capability in these areas. Establishment of back office teams would be subject to discussion and agreement with National Grid plc and will follow the standard consultation process where required.

As a technology and digitally enabled business, getting the right IT model in place forms a large part of our plan. IT capability will be established over time, with work beginning ahead of day one to agree TSAs and recruit into key roles. This approach minimises operational risk while giving the Future System Operator IT independence, accountability, and control. For day two, the Future System Operator will have core internal capabilities, supported by third party suppliers and contractors, in a model designed to reflect the scale, scope and requirements of the new organisation.

Having the right finance capability will be integral to enabling the success of the Future System Operator and our net zero ambitions, working hand-in-hand with the business to drive financial performance and support front line delivery. The team will have a broad remit, overseeing management of funding and liquidity, strategic and regulatory planning, controls and compliance, tax, pensions, insurance, property and procurement. Our submission includes building a Finance function that is fit for purpose, deliverable and affordable for the size and scale of the Future System Operator.

The ESO today is a successful organisation because of the skills and expertise of our people. As we transition to a Future System Operator and take on greater responsibility, it becomes increasingly important to have the best people in the industry focused on delivering net zero and addressing the complex challenges the energy system faces. We have designed a HR function that is agile, accessible and informed with data to enable us to continue to attract and retain the best talent, create a fantastic candidate and employee experience, and embed our desired culture.

1.2.5. An organisation that will continue to grow

The growth and transformation of the Future System Operator will continue beyond day one. We will need flexibility to develop other roles as the journey to net zero continues at pace. As discussed in our response to the Energy Future System Operator consultation, the role of the Future System Operator in coordinating with energy networks, in energy industry data, and in future system operability standards and energy codes will necessitate further development with industry and stakeholders. Similarly, the long-term role of the Future System Operator in areas such as heat and transport decarbonisation, CCUS and hydrogen is yet to be determined and dependent on key policy decisions. For these reasons, we have not costed or planned for these roles in this submission.

At this stage, our transition plan is indicative. More detailed planning and design work, together with Ofgem, BEIS, National Grid plc and the wider industry, will be needed to move towards implementation. We recognise that the creation of the Future System Operator is only one element of the transformation needed for the energy industry to drive towards net zero, and that the roles and responsibilities of other organisations will also need to evolve to meet this challenge.

Section 2. Methodology and assumptions

This section explains our methodology, and the assumptions and principles which underpin our submission.

2.1. Methodology

To develop this cost and plan submission, we have taken a three-step approach:

- Step one: Initial design

  This includes defining the design principles, the day two design (including considering the key strategic transformation decisions that will materially impact cost and time for the transition) and taking an initial view on the day one design (describing how the organisation could look on the first day under new ownership). We have sought to identify the catalogue of ESO separation and transformation activities, as well as define key timing triggers for the transition. Further detailed design and implementation work, in collaboration with National Grid plc, would be needed in any subsequent phases of the programme.

- Step two: Costing

  The initial high-level designs set the boundary for the costing element of the submission. By defining the day two cost base, we can understand and articulate the one-off ESO costs of transition and define the service delivery model, including the potential transitional service agreements (TSAs). The costs have been calculated using a combination of 'as-is' cost data, information from National Grid plc, comparator data and other relevant data points both within and beyond the energy industry. This has ensured our indicative cost estimates are as robust as possible at this early stage.

- Step three: Transformation planning

  The final step includes creating an indicative transformation plan. This plan includes key milestones and dependencies detailing what is required, by whom, and when, to successfully deliver the transformation of the ESO to a Future System Operator.

Driving consumer value, speed of progress towards net zero, and maintaining security of supply during the transition have been the key criteria in assessing design decisions, transformational activities and planning.

2.2. Assumptions and principles

We have used a set of flexible macro assumptions and principles to underpin our design, costing and planning activities.

Design decisions and transition planning assumptions have been assessed to ensure our ability to continue to deliver for our customers, stakeholders and consumers; mitigate the risk to system security and resilience both in the transition and enduring state; and maximise the speed

with which we can take on new and enhanced industry roles to better enable Great Britain's transition to a net zero energy system.

Our macro assumptions and principles are as follows:

Timing

- The Future System Operator will evolve over time as new and enhanced industry roles and capabilities are added. For planning purposes, we have assumed this transition and transformation begins with the joint BEIS and Ofgem consultation decision and policy announcement in April 2022. Day one (under new ownership with some TSAs) could follow in October 2023, with day two (full separation and end of TSAs) between October 2025 and April 2026. Actual dates would be subject to joint discussion and agreement with BEIS, Ofgem and National Grid plc.

- We have planned for what we have reasonable certainty over today. This means we have scoped new industry roles only at the point of 'role go-live', or as indicated by BEIS and Ofgem. We have not planned or costed for a further evolution of roles thereafter. Future business plans will provide the opportunity to consider growth and evolution.

- For some new industry roles, we propose to build capability through the separation and transaction preparation phase. This means planning for and developing the teams, technology and data needed in readiness for day one. Some new industry roles, which require legislation, licence or code changes, may begin later. These may still require capability build in advance to enable the Future System Operator to be ready to take on new roles and obligations at the point of role go-live.

- We have set out the option to accelerate the adoption of enabling back office capability where there is a strong value case and where it would reduce transition risks. This means that in some areas we will prepare for separation by building additional capability. For example, we may build capability to manage our cash and debt position by the early establishment of a dedicated ESO Treasury function.

Capability

- Optimisation of existing ESO capability (people, process and systems) will be captured within the core RIIO-2 Business Plan 2. This submission only addresses the plan and costs of the transition to a Future System Operator, over and above the RIIO-2 Business Plan 2 proposals.

- In the back office (i.e., the departments and capabilities that make up the administrative and support functions fundamental to the running of any organisation, such as finance, HR and IT) we have planned and costed to mirror the capability (people, process and systems) we currently receive from National Grid plc, unless there was a strong business case to change. As a standalone organisation, these functions will then evolve to an enduring state designed to be reflective of the scale, culture and our ambition for the Future System Operator, without compromising service quality.

- This submission only addresses the activities and associated costs to be undertaken by the ESO in the transition to a Future System Operator. Activities and costs incurred by other parties, such as National Grid plc, are not in the scope of this plan.

- All new industry roles have been scoped based on the decisions set out in the joint BEIS and Ofgem consultation decision. We anticipate that the scope of roles will change as responsibilities are clarified when legislation, licences and codes are drafted, as well as the associated industry engagement. Further detailed work will be needed to refine our assumptions in the next phase of the project, which will further refine our costs and plan.

Section 3. Our people

The success of the ESO is down to our people, and so it is vital that the journey to a Future System Operator should consider their needs. Our people care deeply about the future direction of our organisation and are excited by the opportunities. At the same time, we know uncertainty can be concerning, with some of our people worried about the potential changes to an unknown future state. This section outlines how we have reflected the needs of our people in the transition plan and the importance of culture for the Future System Operator.

While this submission focuses on the impact on the ESO's people, we recognise that the transformation to a Future System Operator will also impact employees in the wider National Grid plc. Any changes will be subject to the appropriate consultation process if required.

3.1. The importance of our people

Our success in achieving the goal for the Future System Operator is fundamentally linked to the people in our organisation. To become a world-leading organisation at the heart of Great Britain's energy system and the delivery of net zero, we need to attract, retain, engage and develop talented individuals with the passion and capability to drive the energy transition.

As the role of the Future System Operator emerges it is important that we build new capabilities that complement our existing strengths in power system engineering, customer and stakeholder engagement and commerciality. We will develop a people strategy that considers how to deliver in an increasingly technology and data led organisation while attracting these new skills and developing our existing people too.

The Future System Operator has an exciting role to play in Great Britain's energy transition. It is important that our employee value proposition is equally exciting and engaging for both our existing and future colleagues. Through a focus on culture and purpose, creating an employer brand that positions the Future System Operator as an employer of choice for future climate leaders will be critical to our success in attracting and retaining talent.

3.2. Practicalities of the transition

As outlined in our response to the Energy Future System Operator consultation, we commissioned an independent agency to conduct a colleague sentiment survey in summer 2021. While many colleagues said they felt excited about the potential changes to the ESO and the drive to delivering net zero, some expressed concerns about the impact the changes might have on their role, their terms and conditions, and any potential consequences of separating from a large organisation. It was also noted that the speed of implementation of the Future System Operator would help alleviate any prolonged uncertainty for colleagues.

Bearing this in mind, our transition plan focuses on key activities to provide information and certainty to our people as early as possible in the implementation process. Some of these activities will be led by, or coordinated in conjunction with, National Grid plc. Key activities include:

- Terms and conditions assurance will be a priority. We recognise that delay in this area could have serious implications for talent drain in a competitive market. As soon as a decision on the sale of the ESO is announced, our team will begin work to confirm employee terms and conditions as quickly as possible.

- Trade union engagement will be required. We plan to work closely with unions and key employee representatives to ensure that where changes do happen, employees are supported with an open two-way dialogue, clear communications, training and trusted leadership.

- We are planning for specific transition activities including the possible TUPE of people from National Grid plc and capability build and training programmes for people where roles may change.

- We are exploring how we increase our physical presence close to government in London, which may impact our property strategy.

- We will work with leaders to ensure that each and every individual within our organisation feels committed to the Future System Operator's purpose and goals, and are clear on how they contribute to achieving them. We will provide the tools and skills to manage through change, as well as supporting emotional wellbeing as we transition and embed the new organisation. Tools such as Employee Assistance programmes will be available for all colleagues.

- Our employees have highlighted their desire for continued learning and development opportunities in a Future System Operator. We are committed to continuing and enhancing our comprehensive training programme, as well as industry leading graduate and new talent programmes, to build a pipeline of new leaders for the organisation.

3.3. Organisational culture

The ESO's organisational culture consistently received very positive comments in our colleague sentiment survey. As a new and unique organisation, the Future System Operator will need to clearly articulate a new working culture that builds on the best of the ESO, but also considers the changes necessary for the organisation to take up a new mandate at the heart of the energy industry and accelerate progress towards net zero.

The transition to a Future System Operator is an opportunity to accelerate a number of key behavioural shifts already underway, for example, leading by empowering, embracing an enterprise and collaborative mindset, operating with agility and flexibility, and balanced risk taking and speedier decision-making. We will move away from an electricity focused organisation to one with a truly whole energy system mindset. These shifts are supported by our stakeholders and will be reflected and reinforced across all elements of our operating model to ensure leadership tone, governance, processes, brand and systems support our desired enduring state culture.

Section 4. Operational roles transformation: future capability and costings

This section describes the operational activities that form the core of our business. To align with the core RIIO-2 Business Plan 2, we have described the key changes required to transition to a Future System Operator by reference to the current ESO regulated Roles framework. This structure might need to be adapted, which will be explored in future phases of work. The Roles broadly align to level 1 of the capability model, described in Section 1.

Figure 4 below illustrates how the new and enhanced industry roles align with our existing regulated Roles. Undertaking these new activities will move us beyond electricity and gas to develop a whole energy system mindset for all of our work.
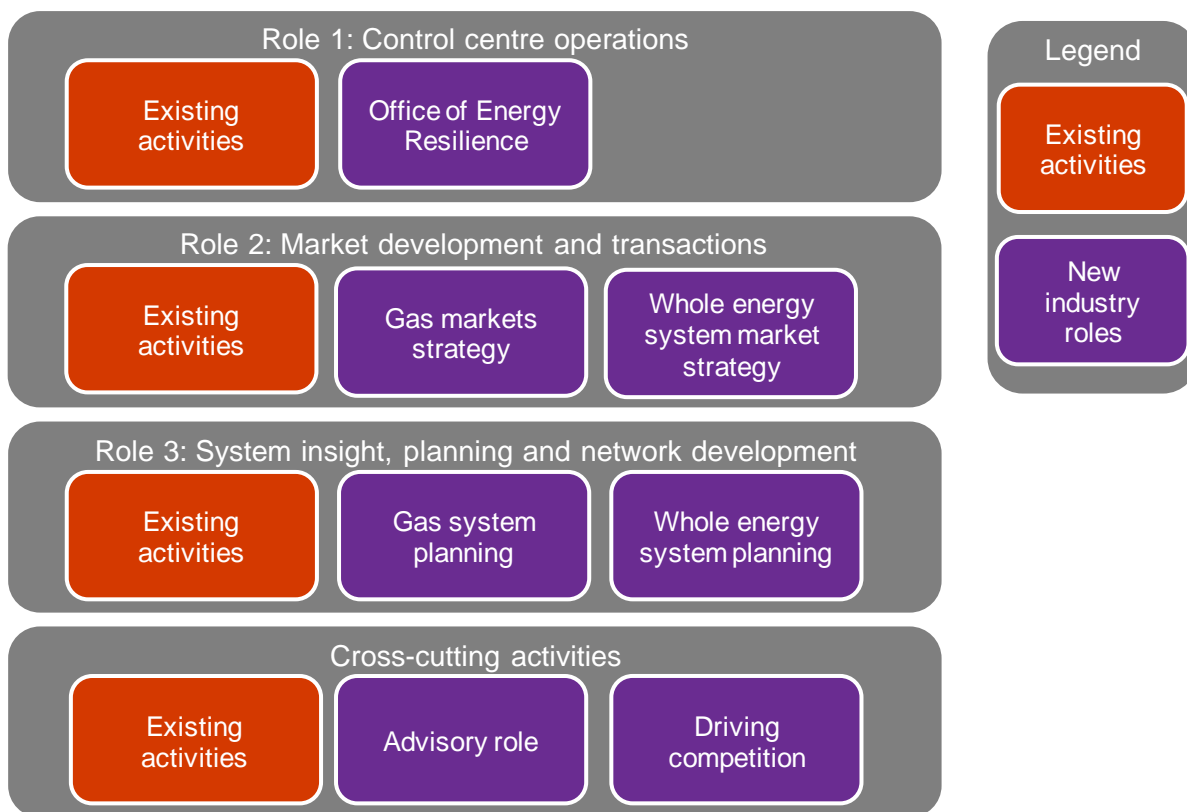

Figure 4: New industry roles mapped to existing ESO roles framework

For each Role we start by providing a short summary of our existing capability. We have used the cost baseline set out in the core RIIO-2 Business Plan 2 as our starting point. This means that we have assumed that teams associated with current ESO roles, systems and processes will be transferred to the Future System Operator as is.

Where the Future System Operator will take on new industry roles, we describe the key areas of change, before setting out our plan and costs to achieve this. New industry roles will go-live at various points from day one of the Future System Operator. We have planned and costed these

roles from their inception. We anticipate that the responsibilities of the Future System Operator will continue to develop over time. For each Role we have indicated areas of potential evolution, however these areas of future growth have not been included in our costing.

In planning new and enhanced roles for the Future System Operator, we are mindful there are currently significant industry change programmes underway. These include a number of stakeholder consultations that may well impact our assumptions, activities and costs. We will be tracking all relevant consultations to ensure that pertinent changes and decisions can be incorporated into our transition planning

4.1. Role 1: Control Centre operations

4.1.1. Our existing capability

Role 1 focuses on the operation of today's electricity system safely, reliably, and economically, while working towards the operation of a carbon-free system in 2025 and beyond. The activities, described in our core RIIO-2 Business Plan 2, are consistent with the aims of a Future System Operator.

4.1.2. Transformation to a Future System Operator

As part of a shift to independence from National Grid plc, we need to consider our Control Centre arrangements. Our plan includes scoping for a Contingency Control Centre, to replace the facilities we currently share with National Grid Electricity Transmission. Recognising our important and continued role in maintaining current world-class system operation and supporting security of supply, it is crucial that any changes to the Control Centres and their operation should have a clear plan to deliver these efficiently and safely.

For Role 1, one of the key areas of growth and added value is through the creation of an Office of Energy Resilience and Emergency Management, which we believe could form a core element of the new organisation. As well as providing strategic management of emergencies, it could also perform resilience and standard assessments across different transmission networks, identifying where there are interactions or vulnerabilities, and setting out what needs to be done to address them.

A Contingency Control Centre will require scoping and design ahead of day one by a team from the ESO, alongside external specialist support.

The Office of Energy Resilience and Emergency Management will require a team at role go-live. This role will be enabled by changes to legislation, industry engagement and a capability build.

New and enhanced industry roles

Future evolution

The Control Centres will continue to develop. As other energy vectors, like hydrogen and CCUS, become a bigger part of the energy landscape, we will need to adapt to accommodate these.

Figure 5: Role 1 transformation

Contingency Control Centre

The ESO currently owns and operates primary and secondary Control Centres, with a third Contingency Control Centre available via a site shared with National Grid Electricity Transmission. The Contingency Control Centre provides resilience in the event of a long duration loss of one of the other Control Centres. To reflect the increased independence of the Future System Operator, we are considering alternative contingency options.

While an initial option has been identified, a project will be required to fully scope out the Contingency Control Centre requirements and design the best value solution. This would initially require a small team from the ESO, alongside some external support, to scope, design and provide a detailed cost breakdown. Undertaking design and scoping activities before day one will ensure that the outputs can be fed into the ongoing delivery of the new integrated energy management system (iEMS).

Office of Energy Resilience and Emergency Management

The route to net zero will result in more cross-energy vector dependencies. This will be especially true during an emergency, where it will be important to develop a whole energy system response. In our response to the Energy Future System Operator consultation, we proposed that an Office of Energy Resilience and Emergency Management could be a significant and central element of the Future System Operator. This would be separate from, but coordinate with, all other control centres and the roles established in the event of an emergency, such as the Network Emergency Coordinator (NEC). As mentioned in the Government and Ofgem's consultation decision, we recognise this role needs to be considered in collaboration with industry to ensure that its design complements existing industry procedures and acts as an enabler to whole energy system emergency response.

We envisage that an Office of Energy Resilience and Emergency Management could be responsible for cross-energy vector resilience, emergency preparedness and emergency response. To be able to deliver on these responsibilities it would:

- Engage extensively with governing bodies and industry, facilitating innovative approaches to whole energy issues.

- Develop a whole energy system emergency response process.

- Develop and provide training both to industry and internal colleagues.

- Run and manage whole energy emergency exercises, evaluating and reporting where there are opportunities to improve whole energy system resilience.

- Develop resilience standards with the wider industry and report on compliance.

- Conduct studies and analysis on the whole energy system, testing stress events and proposing solutions to manage these.

- Study the impacts of the different energy markets on each other in an emergency and propose new arrangements where appropriate.

- Identify new services to provide resilience to the energy system and monitor their delivery.

- Establish a response team in an emergency to liaise with multiple parties in the industry, as well as government bodies, while coordinating actions across multiple energy vectors and ensuring the safety of, and least disruption to, consumers.

In preparation for role go-live, engagement with industry would be needed to develop the appropriate legislation to enable the role to be fully effective. To facilitate this, some recruitment would need to be undertaken in advance to establish the foundations of the team and begin some activities. This team would continue to grow in capability and size until it reached the capacity to deliver the responsibilities described above. Although some activities could be started in advance, appropriate legislation would be needed to fully enable the role.

We anticipate future responsibilities associated with this role could increase as the whole energy industry grows in complexity, with other energy vectors, such as hydrogen and CCUS, having a greater impact on the system.

4.2. Role 2: Market development and transactions

4.2.1. Our existing capability

Efficient, well-functioning markets are essential to enabling operation of a carbon-free system while driving value for consumers. Our Role 2 activities focus on how we can make markets more efficient and accessible to all participants, and how we evolve and digitalise industry codes and charging. In the core RIIO-2 Business Plan 2 we are also adding the delivery of net zero market reform and understanding our role in Europe for 2023 onwards.

4.2.2. Transformation to a Future System Operator

One of the key objectives of the Future System Operator is to drive innovative whole energy system thinking and solutions. This applies in markets too, where we envisage a greater role in shaping and driving the development of competitive and efficient markets across multiple energy vectors. To achieve this, our plan starts with the Future System Operator taking on responsibilities for gas market strategy, while at the same time developing capability to strategically consider markets across multiple energy vectors to drive the greatest value for consumers.

We recognise the Future System Operator could be well placed to take on additional duties in relation to the Capacity Market and adopt an enhanced role in energy code management. The responsibilities the Future System Operator might take on are currently less well defined so we cannot specify what resource may be needed, although we anticipate these will be important areas of evolution.

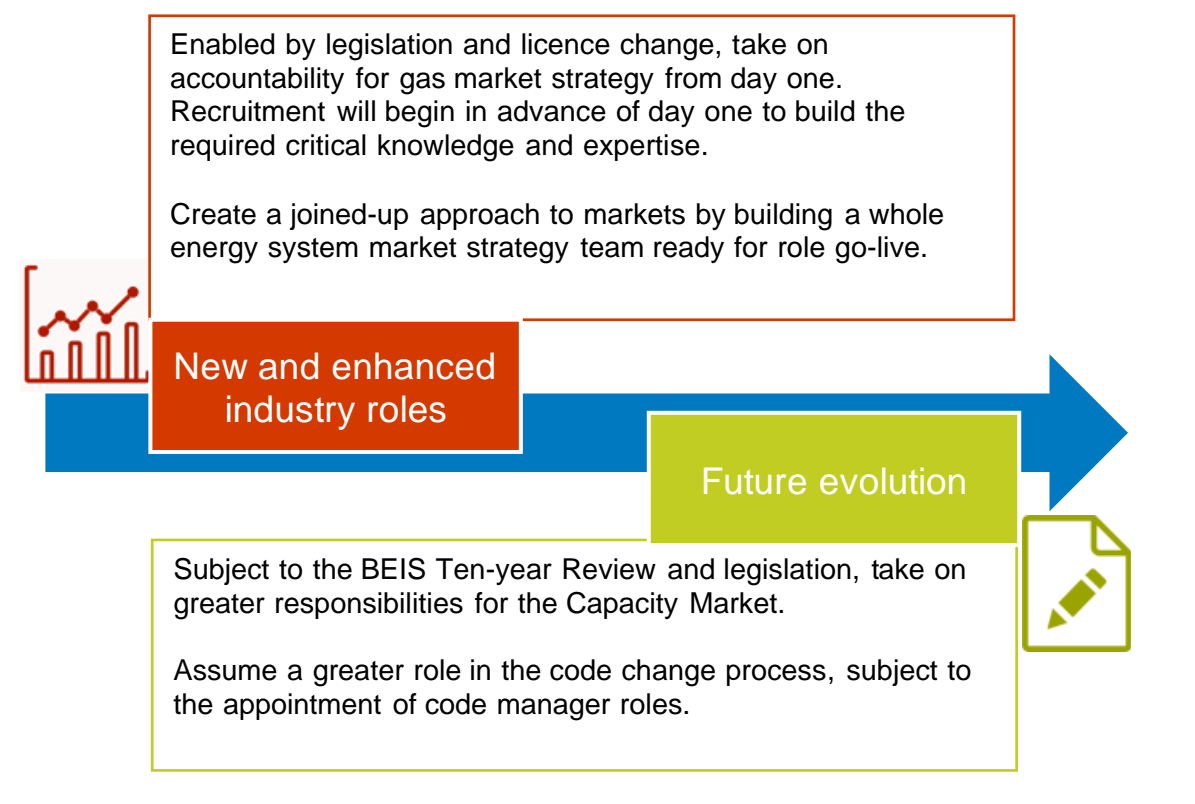We expand on how our plan will enable these activities below.

> **New and enhanced industry roles**
>
> Enabled by legislation and licence change, take on accountability for gas market strategy from day one. Recruitment will begin in advance of day one to build the required critical knowledge and expertise.
>
> Create a joined-up approach to markets by building a whole energy system market strategy team ready for role go-live.
>
> **Future evolution**
>
> Subject to the BEIS Ten-year Review and legislation, take on greater responsibilities for the Capacity Market.
>
> Assume a greater role in the code change process, subject to the appointment of code manager roles.

Figure 6: Role 2 transformation

Market strategy

A vital first step in growing whole energy capabilities will be to bring the existing strategic roles for gas and electricity into one organisation. For Role 2, this means incorporating gas market strategy roles. This includes leading market participants in developing a gas market strategy, publication of the Gas Market Plan (GMaP) and leading Future of Gas forums. For the purposes of this plan, we have assumed the Future System Operator will take on these accountabilities on

day one. This would be subject to agreement with the relevant parties, and would require appropriate legislation and licence change.

The gas market strategy responsibilities are currently undertaken by National Grid Gas. We therefore see the development of this capability as a key part in successfully embedding this role within the Future System Operator. To rapidly increase our understanding of gas markets and deliver these new obligations, we have planned to mirror the relevant capability in National Grid Gas. To make sure the Future System Operator is ready for its gas obligations on day one, the required capability build will need to be undertaken in advance and with sufficient lead time to produce the necessary analysis and narrative for the annually published GMaP.

The Future System Operator cannot consider markets in silos but should develop innovative whole energy system thinking and solutions to drive the greatest consumer value. While incorporating gas market strategy is a positive first step, the Future System Operator needs to consider markets holistically across multiple energy vectors, providing clear direction to industry through whole energy system market strategy. With this in mind, we plan to recruit a small team to begin taking a whole energy system approach, considering market interactions and how best to implement a joined-up approach to gas, electricity and other markets in the future.

Market design

In line with the wider programme of market reform, the Future System Operator could play an important and central role in shaping the design of the Capacity Market. Our plan assumes the Future System Operator will continue to act as the Electricity Market Reform (EMR) Delivery Body and perform all the activities currently undertaken by the ESO. As outlined in our response to the Energy Future System Operator consultation, we agree it may be appropriate for the Future System Operator to take on additional responsibilities for some Capacity Market functions that currently sit with BEIS or Ofgem. This could include designing rules and regulations for the Capacity Market framework or assuming greater responsibility for modelling.

There isn't yet sufficient clarity on the possible scope of such activities. We look forward to contributing to the BEIS Ten-year Review to determine the long-term future of the Capacity Market and what roles and responsibilities best sit with the Future System Operator. We anticipate any new responsibilities would be set out in the legislation for the Capacity Market and would be subject to further consultation. Until this review concludes, we do not expect to have sufficient information to determine what resource and cost could be associated with any new roles.

Codes

Changes to code governance will be essential to transform the energy system at pace and remove barriers to entry. The outcome of the Design and Delivery of the Energy Code Reform consultation has confirmed the concept of licenced code managers. These code managers will have enhanced ownership of their codes and greater ability to progress and prioritise change. Without pre-determining their election, we believe it is critically important that the Future System Operator has a strong role in the code change process. This is particularly important for the technical codes such as Grid Code, System Operator Transmission Owner code and Security and Quality of Supply Standard, as well as the charging methodologies for Transmission Network Use of System and Balancing Services Use of System charges. As the Future System

Operator takes on greater responsibilities across multiple energy vectors, there may be a role in other codes such as the Uniform Network Code.

Should the Future System Operator take on a role as a code manager, our current Code Administrator and Code Change Delivery teams could be drawn together into a single area, combining the administration and subject matter expertise necessary to undertake the role. To achieve the aspirations of entirely transforming the existing processes with greater ownership, expertise and pace of change, would require an increase in resource, which would be captured through the ongoing regulatory business planning process. Within this team, capabilities would include strategy, stakeholder engagement, administration, technical experts and legal support.

We recognise the Future System Operator will have a licence obligation to provide advice to Ofgem on an annual basis as part of the regulator's new strategic direction setting role for the energy codes. While the resource needed to do this will sit within the advisory role, it will draw on expertise from our code team as appropriate.

We welcome the decision that the Future System Operator will not undertake the role of an Integrated Rule Making Body. With this in mind, our plan has not considered what level of resource or cost could be associated with this role.

4.3. Role 3: System insight, planning and network development

4.3.1. Our existing capability

Our Role 3 activities of system insights, planning and network development focus on making sure that the network is always ready for the demands placed on it, today and in the future. We use our knowledge and unique position in the industry to optimise the connection of offshore wind farms, introduce competition to onshore transmission, and advise Ofgem and BEIS on the evolution of the network planning regime. The growth in this role, as described in our core RIIO-2 Business Plan 2, already resonates with the creation of a Future System Operator.

4.3.2. Transformation to a Future System Operator

Our activities under Role 3 can drive real benefit for the energy industry by expanding beyond electricity to encompass whole energy system thinking. Analysing the whole energy landscape, rather than only its component parts, will allow consideration of a wider range of innovative solutions and help speed up the journey to net zero, further reducing costs for both current and future consumers by supporting the development of an efficient energy system. To achieve this, the Future System Operator will take on gas planning roles while at the same time developing capability and processes to consider network planning holistically. We will do this in a way that will allow for other energy vectors, such as hydrogen and CCUS, to be considered in the future once these are further developed. We expand on how we will achieve this below.
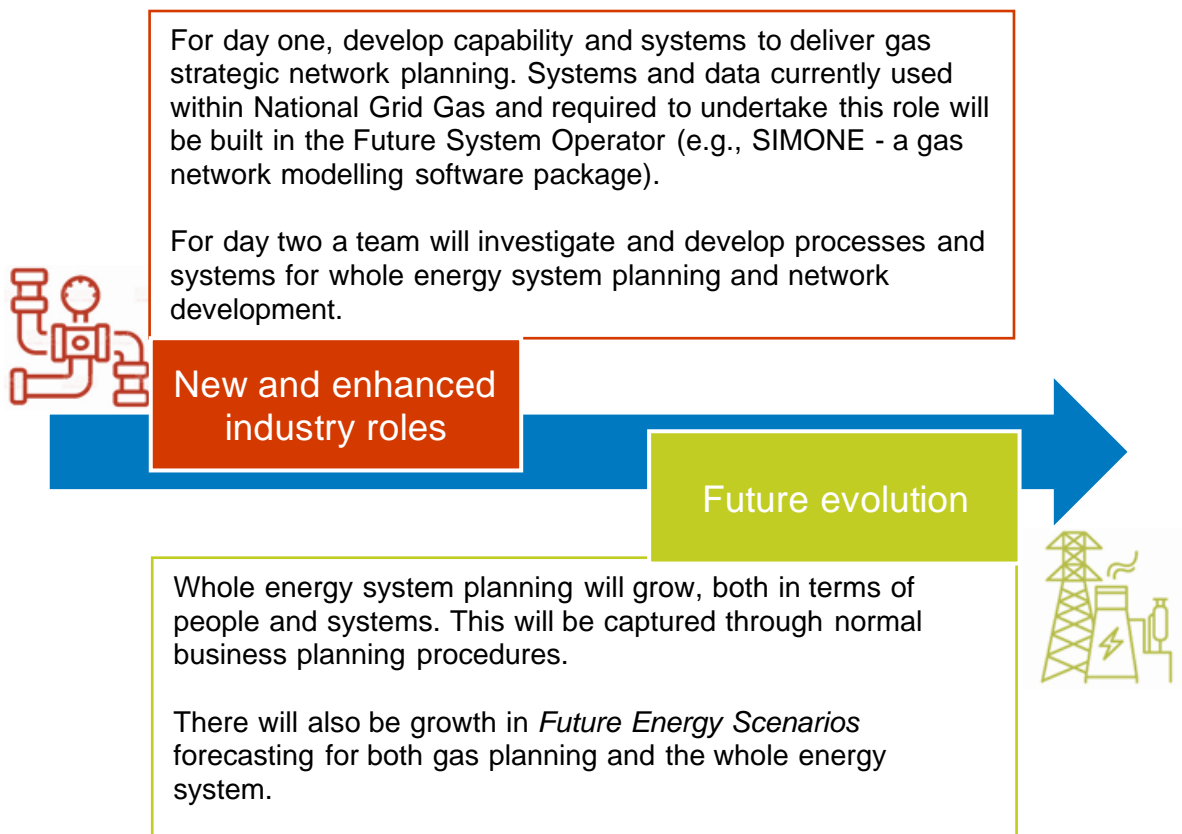
For day one, develop capability and systems to deliver gas strategic network planning. Systems and data currently used within National Grid Gas and required to undertake this role will be built in the Future System Operator (e.g., SIMONE - a gas network modelling software package).

For day two a team will investigate and develop processes and systems for whole energy system planning and network development.

New and enhanced industry roles

Future evolution

Whole energy system planning will grow, both in terms of people and systems. This will be captured through normal business planning procedures.

There will also be growth in *Future Energy Scenarios* forecasting for both gas planning and the whole energy system.

Figure 7: Role 3 transformation

Gas strategic roles

A vital step in growing whole energy functions will be to bring the strategic roles for gas and electricity into one organisation. For Role 3, this means incorporating gas strategic network planning and publication of key related documents. For the purposes of developing this plan, we have assumed the Future System Operator will take on these accountabilities for day one. This would be subject to agreement with the relevant parties, and need to be enabled by the appropriate legislation and licence change.

To make sure the Future System Operator is ready for its gas obligations, the build in capability will need to begin in advance of day one. The team would implement and run specific systems, such as SIMONE – a gas network modelling software package. Many of these gas strategy responsibilities are currently undertaken by National Grid Gas. Strong engagement with National Grid Gas will be part of this capability build and will continue beyond day one, as we work together collaboratively to share data and maintain accurate models of the gas network.

In line with BEIS and Ofgem's consultation decision, we recognise the Future System Operator will undertake medium to long-term gas supply and demand forecasting. We already consider this when producing the *Future Energy Scenarios*. Within the current process, we take a whole energy system approach across multiple energy vectors. While no additional resource is needed at this stage, this role may evolve as other energy vectors begin to have a more significant impact on the system.

Development of whole energy system planning

Reaching net zero will require a significant coordinated effort, of which system planning and network development will be a key part. By taking on this role, the Future System Operator must be able to coordinate across multiple energy vectors and plan the system and networks of the future. More effective strategic network planning performed in a whole energy system way can lower the costs of the net zero transition and deliver significant consumer savings.

A number of industry workstreams are considering a more coordinated and strategic approach to electricity system network planning. Building on this work, we see the key distinction for the Future System Operator as being the development of whole energy system planning. Developing whole energy system planning will not be a simple process and will require careful consideration, engagement and coordination across the energy industry. At the point of role go-live a small team will be set up to undertake the initial assessment and design of this process.

This team would work closely with industry to establish the right processes and support development of legislation to manage whole energy network planning. In parallel, the team would also begin to consider what system requirements would be needed to deliver whole energy system planning processes. As clarity develops on what the outputs will look like, there will likely be a requirement for growth, both in team capability and systems. We envisage this development will be captured within the ongoing regulatory business planning process, beyond day one of a Future System Operator.

4.4. Cross-cutting activities

4.4.1. Our existing capability

Our core RIIO-2 Business Plan 2 discusses cross-cutting activities that are integral to the functioning and evolution of our business. These include business change, customer and stakeholder engagement, innovation and regulation.

The crucial build in these activities for the Future System Operator centres on the development of whole energy expertise, as well as the design of the advisory role.

4.4.2. Transformation to a Future System Operator

Cross-cutting activities undertaken by the Future System Operator will drive long-term benefit for the energy industry. On the journey to net zero there will be clear value in an expert, impartial voice providing targeted technical advice, particularly to facilitate decision-making and policy definition. The start of the proposed advisory role will be dependent on the legislative timetable and appropriate licence changes.

The expansion of the Regulation team will also enable the Future System Operator to play a key role in the initial design of the regulatory framework, as well as oversee broader licences and obligations. Further development in our engagement with consumers and our innovation activity may be needed beyond day one, but given the uncertainty in these areas we anticipate these will evolve through the ongoing regulatory business planning process.
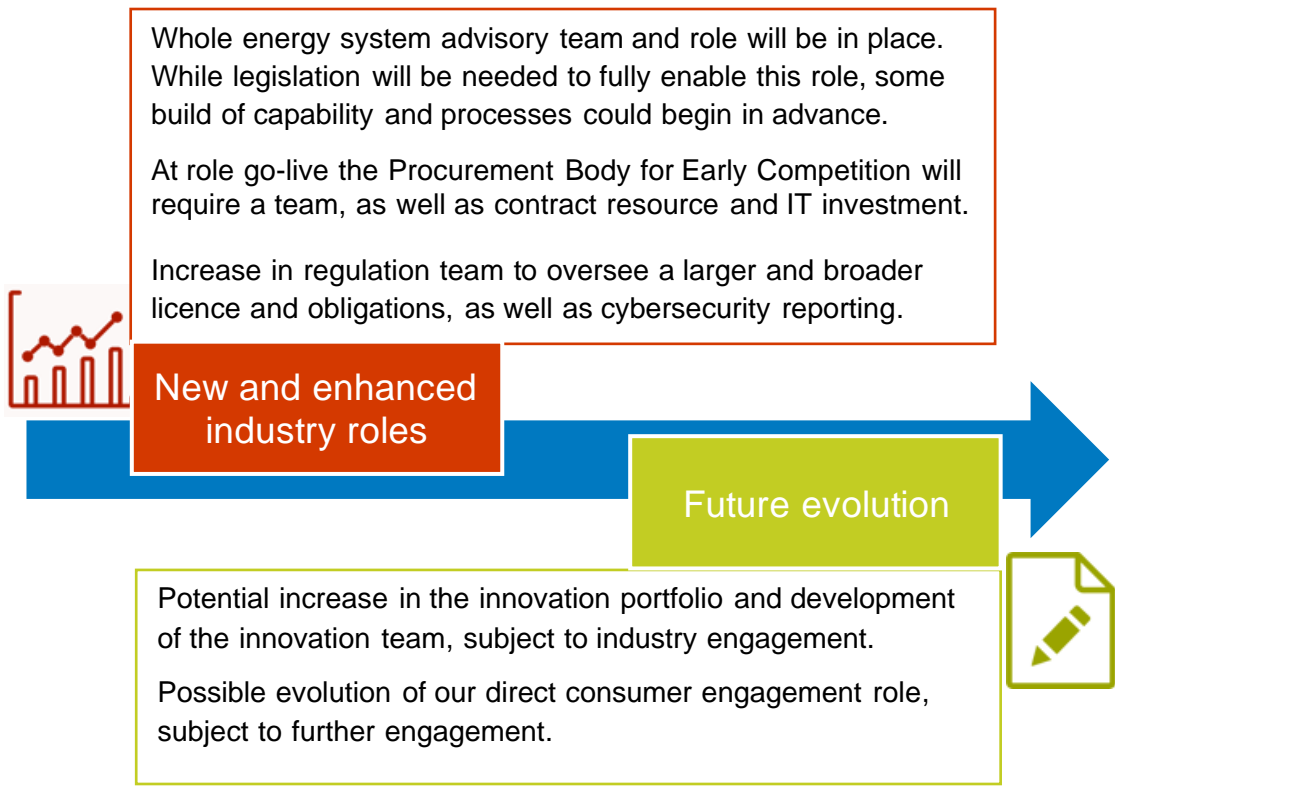
Whole energy system advisory team and role will be in place. While legislation will be needed to fully enable this role, some build of capability and processes could begin in advance.

At role go-live the Procurement Body for Early Competition will require a team, as well as contract resource and IT investment.

Increase in regulation team to oversee a larger and broader licence and obligations, as well as cybersecurity reporting.

New and enhanced industry roles

Future evolution

Potential increase in the innovation portfolio and development of the innovation team, subject to industry engagement.

Possible evolution of our direct consumer engagement role, subject to further engagement.

Figure 8: Cross-cutting activities transformation

Advisory role

A key component of cross-cutting activities in a Future System Operator is the advisory role. The proposed advisory role very much aligns with our 'trusted partner' ambition, described in our core RIIO-2 Business Plan 2, and builds on work we are already doing.

We have undertaken early scoping and design of this role, based on BEIS and Ofgem's consultation decision. Our plan has therefore assumed that Ofgem and BEIS will be able to seek advice, analysis and information from the Future System Operator, focused on the organisation's areas of expertise. Alongside this we will continue to develop our engagement with regional and local organisations via our stakeholder work for the *Future Energy Scenarios*, as discussed in the core RIIO-2 Business Plan 2.

We propose that a small team with expertise in analysis, stakeholder engagement and knowledge of energy markets and zero carbon operations, will initially form the core resource for the advisory role. The team will also draw on further capability from across the Future System Operator and will engage and share information with industry stakeholders as appropriate to provide robust advice and information. The scope of this role will be to consider the whole energy system. If the Future System Operator takes on additional roles in new energy vectors, this team may need to expand to provide more detailed advice in these areas.

While legislation will be needed to clearly scope the legal duty to advise, we anticipate that we could informally begin this role and build capability, processes etc. ahead of legislation, further refining the scope of the role as legislation is written. This will establish the Future System Operator as a trusted net zero partner for the industry, able to provide targeted, expert and impartial advice to facilitate decision-making and policy definition.

We note also the Ofgem and BEIS consultation decision proposes a potential further expansion of responsibilities, for example relating to the *Future Energy Scenarios*, to share expertise or provide guidance to others in the energy industry. As these have not yet been detailed, we have not planned or costed such an expansion of responsibilities in this submission.

Driving competition in energy networks

Driving competition will be key to delivering network development in the most efficient and cost-effective way. We have already developed an in-depth plan for delivering this area of work in the electricity transmission network through our *Early Competition Plan*, published in April 2021.

The preparatory and implementation work for Early Competition is discussed in the core RIIO-2 Business Plan 2. In this submission, we have included work relating to the Procurement Body role. This is because we believe the Procurement Body element of establishing Early Competition is distinct from other roles, and particularly suited to the Future System Operator given stakeholder comments around the benefits of it being undertaken by an independent party. This submission includes a plan to deliver one competition in electricity over three years by building internal capability, as well as specialist contract resource and IT investment. Should the Future System Operator be required to run more competitions, additional resource would be needed. It may be appropriate for the Future System Operator to plan and run competitions in networks and vectors beyond electricity transmission in the future, but this has not been planned or costed in this submission.

Regulation

Our Regulation team currently supports the organisation in managing our licence, including all formal reporting under the price control arrangements, regulatory engagement and supporting the business on regulatory policy and external consultation. We anticipate a Future System Operator, with new industry roles and additional responsibilities, will have significantly lengthier licences covering broader subject areas, including gas from day one and potentially other energy vectors later on. In addition, the team will need to build standalone capability for cyber security reporting, which has distinct reporting requirements.

To reflect this increased workload and a need for more diverse expertise beyond electricity regulation, we have included an increase to the existing Regulation team, needed on day one. Should further regulatory resource be required as the Future System Operator takes on new industry roles and accountabilities, we expect this would be addressed via the ongoing regulatory business planning process.

Customer and stakeholder

We already engage with huge numbers of customers and stakeholders across the whole energy industry each year, through ongoing dialogue and specific outputs such as the *Future Energy Scenarios*. As we move towards a whole energy system mindset, we are reflecting on our future role to understand what direct or indirect consumer engagement may be appropriate for a Future System Operator. We have not planned or costed such a role in this submission as we believe further work in this area is needed, particularly with industry stakeholders and consumer organisations, to clearly scope appropriate responsibilities.

Innovation

Innovation will be at the heart of the Future System Operator. As an agile and innovative organisation, we will need to quickly identify, test and prototype new approaches to challenges that have never previously been encountered. While we anticipate the role of the Innovation team will grow, we have not planned or costed for this yet. Further discussion is needed with Ofgem, BEIS and stakeholders to identify the new organisation's roles and responsibilities in this area.

4.4.3. Transition activities

In considering the journey to a Future System Operator, we anticipate some key milestones and dependencies to enable the roles and areas mentioned above.

Regulatory design

A temporary team will be needed to help design the licences for the Future System Operator, to participate in licence drafting workshops, including informal and statutory consultations, and to move current obligations into the new licences. Based on the decisions set out in the joint BEIS and Ofgem consultation response, we estimate this work will take around 12 months, and require legal, regulatory and regulatory finance resource. We may need to refine our resource assumptions as we get greater clarity on the regulatory arrangements and the scale of work required.

There will be a key opportunity to carefully consider the design of the regulatory framework, including obligations and legislation, to reflect whole energy system accountabilities.

Section 5. IT transformation: future capability

5.1. Introduction to IT

This section sets out the activities and costs to stand up a separate IT capability. Establishing the Future System Operator as a technology and digitally enabled business means that transitioning our IT capability forms a large and ambitious part of our plan. This will be a critical and highly complex part of our transformation programme, with a high degree of interaction with National Grid plc. Significant work in the next phase of the project will be needed to refine and further cost activities.

This section serves as an annex to the core RIIO-2 Business Plan 2 and does not duplicate any activities or costs already covered in that plan. Further work will be needed in the next phase of the project to understand how activities already taking place as part of the RIIO-2 Business Plan 2 contribute to and enable IT capability for the Future System Operator, as well as making sure activities are aligned.

When developing our plan, we have aligned our definition of services to the Technology Business Management (TBM) Taxonomy 4.0. This is a common industry framework for IT services and is used within the core RIIO-2 Business Plan 2. Where service definitions differ, we have called this out explicitly.

Where back office applications are referenced, these refer to the applications which support Business Services, Corporate Affairs, Finance (including Tax), Treasury, Pensions, Insurance, Safety, Health & Environment (SHE) and Operation Performance Spec (OPS), Land and Property, Procurement, Risk, Legal, HR, Security, Infrastructure and Operation, End User Computing and IT4IT. Front office applications refer to the Critical National Infrastructure (CNI) and non-CNI applications which directly support the operational business.

5.1.1. Our existing capability

The ESO's current IT capability is provided by National Grid plc shared IT and charged via an allocation recharge. This includes people, tools, contracts, and assets. IT services are also provided by National Grid plc via an allocation recharge. This includes services across IT Management, Applications (front office and back office), Platforms, End User Computing/Workplace (EUC), Infrastructure, Delivery, Security and Compliance.

Table 2 below describes the IT services received from National Grid IT, and the current service provision.

Table 2: Current state services (TBM aligned)

Service received	Description (TBM Taxonomy 4.0)	Shared or dedicated teams
IT management	Overall management, strategy, and planning of enterprise IT.	Shared and dedicated
Applications[4]	Software application development, testing, release, support, operations, and licences.	Shared and dedicated
Platforms	Platform solutions include the application infrastructure (database, middleware, etc.) that enable business-facing applications and services.	Shared
End User Computing/Workplace	Workplace solutions include the client computing devices, software, and connectivity to enable the workforce to access business applications; to communicate with other employees, partners, and customers; and to create content using productivity software. These are always 'user-facing' solutions.	Shared
Infrastructure[5]	Infrastructure solutions include the core infrastructure (facilities, compute, storage, and network services) that are required to deliver any technology automation.	Shared and dedicated
Delivery	Monitoring, support, management, and IT operations for the enterprise, including the IT Service Management (ITSM) functions.	Shared and dedicated
Security and compliance	IT security compliance and disaster recovery functions (including cyber security) that define, establish, enforce and measure security, compliance, and disaster recovery readiness for the enterprise.	Shared

All services are supplemented by contractors and third-party outsourcing contracts.

5.1.2. Transformation to a Future System Operator

As part of the separation from National Grid plc, the ESO will set up an independent, innovative and agile IT capability, with accountability for IT strategy and the governance and management of IT budget. IT will play a full role, as an equal partner, in delivering the Future System Operator's objectives, performance and cost targets, and delivering customer outcomes.

In the short term, IT will be a significant enabler of the Future System Operator's transition from reliance on National Grid plc under transitional service arrangements (TSAs) to an organisation with a full range of capabilities and direct external partnerships to operate successfully and

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[4] Note: this includes ESO-dedicated front office applications, as well as back office applications e.g., enterprise resource planning (ERP).
[5] Note: this Service groups four TBM L1 services (Data Centre, Networks, Compute and Storage) into a single group for ease of comparison with the enduring state.

thrive as a standalone business. This will involve activities prior to day one to scope and design the transition, as well as additional IT capability, and recruitment of key strategic and management roles to develop the ESO capabilities, ready for day one.

In this transition, we believe there are five core objectives for the IT function:

1. **Separation** – manage the transition from National Grid plc safely and with minimal risk to business operations.

2. **Efficiency** – operate IT services cost efficiently, striving to operate standardised technology and working with the business to identify and achieve operational efficiencies.

3. **Partnership** – work in partnership with our colleagues to define the role of the Future System Operator, driving opportunities for innovation to meet customer needs.

4. **Exploit the IT we have** – consolidate, simplify, and standardise to mitigate cost increases and risk.

5. **Invest in differentiating technology areas** for which there is a strong value case:
   - CNI
   - Customer interaction, communication and engagement
   - Insights and analytics
   - Future technology

To achieve these objectives, we will need to establish a technology strategy and vision that supports the Future System Operator in driving performance and controlling costs, establish a partner base that supports that strategy, and build an internal team capable of effectively managing its delivery.

We have outlined guiding principles to inform this strategy, which will be applied in IT's transition to the enduring state:

- Retain and develop key strategy and management capabilities in-house, including application design, domain architecture and CNI platform support, while leveraging a hybrid outsource model where this makes sense from an efficiency and/or scale perspective.

- Exploit the IT solutions we have, consolidating, simplifying and standardising where possible.

- Migrate to cloud-based solutions, developing embedded applications to benefit the new organisation.

- Adopt an approach of re-use ahead of buy for how we choose our solutions and services. On refresh, seek to standardise service, applications and hardware to achieve commodity proposition.

- Establish, challenge and review service levels (e.g., service level agreements, operational level agreements etc.) and technology resilience to ensure they are fit for purpose.

- Invest in technology areas which have a strong value case. We have identified the following areas that drive performance: CNI, customer interaction, communication and engagement, insights and analytics, and future technology.

- Data will be treated as an asset. We will develop a framework for the engagement of stakeholders and internal and external customers to support decision-making, collaborative prioritisation and delivery of value.

Day two

For day two, IT will be fully independent from National Grid Group IT, delivering against the Future System Operator's core objectives and IT strategy outlined above. Provision of IT services for day two can be summarised as:

- The Future System Operator will own and deliver all IT services, acting as a controlling mind of IT and maintaining the appropriate controls and insight to give us confidence in our architecture, solutions, service and project delivery.

- An innovative and creative culture that actively challenges the status quo to adopt right sized technology and services based on business need and our appetite for risk.

- A flexible and agile delivery model made up of in-house, outsourced or, in some cases, hybrid teams.

- A reduction in reliance on contractors, having transitioned to permanent employees for roles dealing with design, innovation and intellectual property. Resources will be flexed with Application Development and Application Management (ADAM) provider contracts and managed service providers as needed (e.g., EUC, Cyber, Service Management). To support this strategy, we have assumed 60 per cent of roles currently filled by contractors will become permanent roles by day two.

- All platforms, tools and hosting environments will be dedicated and managed by the Future System Operator.

- We will continue to receive Operational Telecoms (OpTel)[6] data into Control Centre systems under a commercial agreement with National Grid Electricity Transmission.

- The changes will see an increase in headcount to enable the development of in-house teams as well as the capability to manage and maintain relationships with third party suppliers.

This transition necessitates significant transformation and build, especially in developing new capabilities such as infrastructure, delivery and cyber to be able to perform as a standalone business and take appropriate actions for the benefit of the Future System Operator and its customers, as well as augmenting existing dedicated capabilities with the specialist expertise needed for back office. New capabilities must be fit for purpose, deliverable and affordable for the size and scale of the Future System Operator.

To meet this challenge, we have proposed a model based on expected future capability needs and landscape changes. This includes outsourcing capabilities where this is the right model for the scale and level of expertise required. To ensure our proposals are fit for purpose, we have also considered comparators and benchmarks.

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[6] The Operational Telecoms (OpTel) network is a high resilience telecommunications network, providing secure connectivity between substations and control centres across the high voltage electricity transmission system.

Our plan below describes the key design decisions to set up each area of the IT function for success.
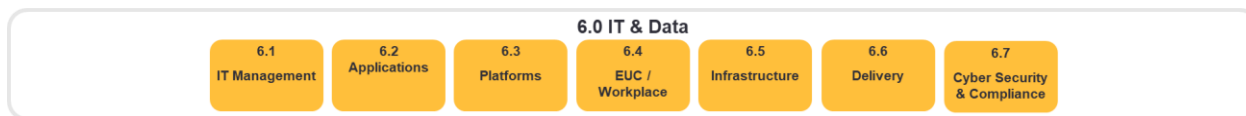

6.0 IT & Data

| 6.1 IT Management | 6.2 Applications | 6.3 Platforms | 6.4 EUC / Workplace | 6.5 Infrastructure | 6.6 Delivery | 6.7 Cyber Security & Compliance |

Figure 9: IT capability model (TBM aligned)

IT Management

IT Management roles will be made up of in-house resources to ensure retention of knowledge and strategic control. This capability will be future looking, embedding innovation into the Future System Operator's DNA. Subject to discussion and agreement with National Grid plc, management roles will be in place prior to day one to set the strategy, governance standards and policies to design the enduring state operating model. Further detail on this can be found in section 5.1.3.

Key changes to as is include the additional remit of back office for all capabilities, as well as the full ownership of demand and portfolio management, performance management, IT finance and TBM, and vendor management capabilities, which are currently provided by National Grid plc.

Applications

This capability will work closely with Delivery to own the entire end-to-end delivery of business applications across both CNI and enterprise solutions (front office and back office). The ESO is currently transitioning to agile ways of working, which is expected to be completed by day two of the Future System Operator. This will see IT capabilities reorganise into value streams owned by the line of business.

During the transition to the Future System Operator, the existing organisation tower of 'solution engineering' will transition to a 'DevOps' tower, with applications, infrastructure and delivery teams running in a full DevOps fashion. These will also apply application security, following guidance of the security function. This DevOps tower will have the flexibility to operate across agile and traditional delivery models.

Enterprise Architecture will drive the Future System Operator's IT strategy in alignment with the business strategy in the core RIIO-2 Business Plan 2. Architecture will have an expanded scope, requiring additional capability in back office, as well as oversight of digital design (e.g., user experience) capabilities.

We would expect the enduring state to support a rationalised and highly integrated application estate. This is to be further developed as part of the detailed design stage. This capability will consist of core in-house development capability, having transitioned from a predominantly contractor-based function, to one whose core is permanent and supported by ADAM contracts as necessary. Key capabilities will include design, domain architecture, development engineering, DevOps engineering, QES and integration services, data, front and back office application support.

Data management will be critical to enabling a digital and data-driven organisation. In its transition to a Future System Operator, this function is likely to be lifted outside of IT,

recognising that data needs to be managed at an organisation level. This will be further designed as part of a detailed operating model.

Platforms

This predominantly consists of middleware platform support, which will comprise in-house capability supported via third party providers. By day two, there will be a dedicated Future System Operator middleware platform in place. For ease of reporting, FTEs required to support this capability have been counted as part of the applications resource.

EUC/Workplace

This capability will be predominantly outsourced, supported by internal strategic roles to ensure oversight and quality, such as EUC device manager and EUC analysts. Key capabilities will include IT helpdesk, connectivity, communications and collaboration (including mobile, laptops etc.) and client computing.

Infrastructure

We would expect the Future System Operator's platforms to be managed by this capability, aligning to agile operating models. Common capability will be delivered by one function and used by multiple value streams. The Future System Operator will have transitioned to strategic hosting locations (Crown DC for CNI, Microsoft Azure for non-CNI) as per the core RIIO-2 Business Plan 2.

The Future System Operator will have transitioned from existing National Grid Group networks, as well as from National Grid Group telecommunications (including spider and satellite phones). The organisation will continue to leverage an OpTel network under commercial agreement with National Grid plc.

Key capabilities will include data centre, compute/storage and networks.

Delivery

A future delivery model will shift from Programme Managers to Product Owners, aligned to value streams, as well as agile ways of working. This is expected to be a fully in-house capability. Delivery also consists of IT service management, client management and operations centre, which will be largely outsourced but supported by internal strategic roles to ensure oversight and quality, including service desk lead. In the enduring state model, we would expect application maintenance to migrate to 'Applications' to allow a full DevOps capability.

Key capabilities will include IT service management, client management, operations centre and product management.

Security and Compliance

As we introduce new technologies, our exposure to cyberattacks expands through increased connection to external systems. It is vital that our control systems and critical infrastructure are kept safe, secure and resilient to ensure compliance with national security standards and policies. This will require robust cyber capability, which for the purposes of this plan we have

assumed will be based on a hybrid model of internal and external services to ensure the Future System Operator has access to the appropriate skills and tooling.

Internal capabilities will focus on security strategy and oversight (including third party providers) for example, security, strategy and management, governance, risk and compliance, disaster recovery, data privacy and security. The managed service provider will focus on areas such as threat and vulnerability management, cyber security and incident response, and identify and access management.

5.1.3. Transition activities

We will need to efficiently separate from National Grid plc without disruption to business as usual activities. Throughout the transition, TSAs will be used to maintain business as usual activities while the Future System Operator develops its strategic suppliers, working environment and in-house capability.

In developing the transition plan we will focus on the following areas:

- Prioritising the protection of security of supply to the electricity grid, while minimising any impacts to our RIIO-2 commitments during the transition.

- Focusing on security and safety and the role technology plays protecting the Future System Operator.

- Transferring existing dedicated ESO resources to the Future System Operator.

- Managing risks identified during the transition, which may lead to delay or replanning.

- Minimising stranded and dual resource costs during any interim states of the transition by using the right mix of permanent and temporary resource, as well as those provided via TSAs.

- Efficiently exiting from TSAs and having full control of our technology environments while not disrupting the business.

- Identifying strategic suppliers to provide the best service at an attractive cost.

- Challenging what we should be paying for an application and infrastructure portfolio, considering the size of the business, to drive efficiencies where possible.

- Designing an appropriately sized enduring state IT organisation and ensuring the right level of capability and control is maintained, while considering total cost of ownership and value of technology investments.

In addition, the following dependencies have been considered:

- Having a security and infrastructure environment.

- Timely resourcing and capacity for delivering (e.g., delivering our RIIO-2 commitments at the same time).

- Transitioning from National Grid plc environments to ESO environments as soon as possible.

The development of the Future System Operator's IT environment will require bringing new resources and expertise into the business. Early capability will be developed ahead of day one, either through recruitment or partnerships. This will minimise risk associated with the complexities of building a new standalone organisation. Early capability will be developed up to one year prior to day one.

Transition activities: pre day one

As noted above, we will be developing capability and undertaking activities prior to day one, subject to discussion and agreement with National Grid plc. This can be summarised as:

- Recruitment of strategic leadership roles, as well as management roles to manage IT functions and TSA delivery.

- Transfer of current ESO dedicated roles from National Grid IT, as well as ESO contractors.

- Increasing resources to manage Future System Operator IT services, govern TSAs, and ensure set up of services between day one and day two.

- Transition detailed design and planning.

- TSA agreement and establishment.

- Infrastructure preparation activities, such as configuring separate Azure tenancy, creating a dedicated ESO environment in Crown DC, separation activities for application estate (including data cleaning and migration) and procurement support.

- Between day one and day two, there will be a number of applications decommissioned by the ESO. Where these are hosted in National Grid IT data centres, the ESO will require National Grid IT to support with physical decommissioning.

Early capability build will include recruitment of strategic and management roles, required 6-12 months prior to day one. These roles will establish the new Future System Operator IT services, develop the strategy, processes and future recruitment needs, and guide the process of finding appropriate managed service providers / procurement activities.

We anticipate that key resources may be required prior to day one in the following capabilities to support the transition plan timeline:

- Cyber security

- Demand and portfolio management

- Architects

- Vendor management

- Development and engineering

- Platform management

- Programme management

- Service desk management

- End user computing

- Data engineering

Transition activities: day one

As of day one, the Future System Operator will receive continued support from National Grid IT under TSAs. These agreements will be developed during the design phase by National Grid plc, in consultation with the ESO. For most activities, we will aim for them to be in place for no longer than 24 months. From day one the Future System Operator's provision of IT services can be summarised as:

- Novation of third-party contracts where contracts are dedicated to the ESO.

- Continued capability build to manage Future System Operator IT services, design and govern TSAs, and ensure set up of services between day one and day two. This will be future looking, developing innovative practices and solutions to deliver customer outcomes.

- Continued provision of services from National Grid IT under TSAs, where those services are shared today, such as infrastructure, end user computing, security and compliance, vendor management etc.

During the transition period TSAs will ensure the Future System Operator continues to operate as usual, ensuring all services shown in the capability framework continue to be offered. Table 3 summarises the TSAs we anticipate will be in place for IT, subject to discussion and agreement with National Grid plc.

Table 3: Summary of potential TSAs

Service area	Timeframe	Anticipated scope
IT Management	c.12 months	Continued access to group resources e.g., business architects, solution architects, vendor management.
Applications	c.18-24 months	Continued access and use of back office, middleware and shared services applications (including data, IT4IT, DevOps and planning tools), licences, support and maintenance. Continued access to shared resources e.g., quality engineering service (testing), environments management and DevOps to proceed supporting services for applications development and support teams. Physical decommissioning of legacy non-CNI applications which reside in Wipro DC to be carried out by National Grid plc. The Future System Operator will be responsible for migrating users, archiving data, change and comms etc. Reverse TSA in place for iEMS. This asset is owned by the ESO and will continue to be until it is decommissioned by both parties (planned for 2026). A service agreement will be put in place between the ESO and National Grid Electricity Transmission before day one to protect continuity of service for both parties.
EUC/Workplace	c.18-24 months	Second-line support to be carried out by Future System Operator staff. However, the Future System Operator will continue to have access to rest of existing resources, processes and procedures.
Infrastructure	c.18-24 months	Continued access to existing resources, processes, and procedures. Existing arrangement for OpTel to be formalised in TSA.
Delivery	c.18-24 months	IT service management – National Grid plc to continue to provide access to existing resources, processes and procedures.
Cyber security	c.24 months	National Grid plc to continue to provide cyber security resources, processes and procedures.

Further details on TSAs and dependencies on National Grid IT will form part of the detailed design phase.

Section 6. Back office transformation: future capability

The Future System Operator will need to stand up its own capability in the back office functions fundamental to running any organisation. Our proposed design of these functions reflects the scale, culture and ambition of the Future System Operator, without compromising service quality.

The ESO currently uses back office functions shared across all the National Grid plc businesses. These support services include human resources (HR), finance, corporate affairs, audit and legal. This was agreed with Ofgem as part of the legal separation process as appropriate for that model. By becoming fully independent, outside of the National Grid plc, the Future System Operator will need to establish its own capability to replace these services.

In this section, we start by providing a short summary of the ESO's existing capability for each back office function. We then describe the key areas of change, alongside our plan and costs.

6.1. Finance

6.1.1. Our existing capability

The ESO's current finance capability is provided by National Grid plc's Chief Financial Officer (CFO) function and charged via an allocation recharge. This function includes both strategic and transactional finance activities, as well as tax, treasury, pensions and insurance capability. The current model delivers finance Business Partnering and Regulatory Finance through a small, dedicated team, while the remaining services are delivered by shared functions in either Business Services or National Grid Group Finance.

Also included in National Grid plc's CFO function are indirect procurement (i.e., all procurement excluding specialist procurement support for Balancing Services and Pathfinder projects) and property capabilities.

6.1.2. Transformation to a future system operator

The Office of the CFO will be integral to enabling the success of the Future System Operator and our net zero ambitions, working hand-in-hand with the business to drive financial performance and support front line delivery. The CFO role will be a critical senior strategic role with accountability for delivering against these ambitions, alongside the Board and Executive. The CFO's team will have a broad remit, overseeing management of funding and liquidity, strategic and regulatory planning, controls and compliance, tax, pensions, insurance, property and procurement. On a day-to-day basis, the Office of the CFO will be responsible for critical activities such as paying for and invoicing customers for balancing services, and ensuring compliance in statutory and regulatory reporting across the business. This necessitates significant transformation and build, rather than a simple lift and shift of the current model from National Grid plc. New capabilities must be fit for purpose, flexible and affordable for the size and scale of the Future System Operator.

We have designed a delivery model considering future capability requirements, expected governance arrangements, and talent attraction and retention. To provide agility and flexibility, we have planned to outsource capabilities where this is the right model for the scale and level of expertise required. To ensure our proposals are fit for purpose, we have also considered comparators and benchmarks.

Our plan below describes the key capabilities and design decisions we have made to set each area of the Finance function up for success.

Figure 10: Office of the CFO capability model

Finance Business Partnering

The Finance Business Partners will continue to be trusted partners and strategic advisers, supporting the business on decisions to drive improved performance and deliver consumer value. Key business areas, such as the Role owners and IT, will have a single point of contact to ensure clear accountability and effective support.

Financial Planning & Analysis (FP&A)

The FP&A team will be responsible for short to long-term planning across the business, tracking and driving performance to ensure effective business outcomes. These roles will work closely with the IT project teams and the Management Accounting teams to support governance with senior stakeholders and input into the regulatory narrative.

Regulatory Finance

The Regulatory Finance team will be key advisers to the business on all regulatory finance matters, including owning the financials of the overall RRP (Regulatory Reporting Pack) process and supporting the Strategy and Regulation team with our relationship with Ofgem. The team will work closely with the business and key industry stakeholders to share insights on the financial implications of code modifications and licence changes.

Financial Reporting and Controls

The Financial Reporting and Controls teams will have overall responsibility for external financial reporting, technical accounting and financial risk management. These teams will ensure the Future System Operator has a strong controls environment to effectively manage risks across

the business. An external adviser for risk, controls and compliance (including SOX financial compliance) will provide specialist advice where needed.

Management Accounting

The Management Accounting teams will be responsible for accounting cycles for opex, capex and revenue, and the management of internal financial reporting to support business performance. These teams will be business facing, working closely with project and cost centre managers to drive financial efficiency by challenging cost data.

Operational Finance

The Operational Finance teams will ensure effective revenue collection and distribution to industry in compliance with licence and code obligations. These teams will also be responsible for accurate and timely payments to suppliers. Ownership of these core transactional activities will be in-house to reduce silos, minimise handoffs and maximise efficiency.

A senior Financial Controller position will lead and be accountable for Financial Reporting and Controls, Management Accounting and Operational Finance.

Treasury

To manage cash flow and debt structures, the Future System Operator will build a fit for purpose Treasury function to ensure the organisation has the working capital it requires to operate within licence obligations. This will include maintaining the required credit rating and securing the necessary funding. Strategic activities will be maintained in-house, while an outsourced adviser will provide operational support and the relevant technology solution.

Tax

A new Tax function will need to be established within the Future System Operator with responsibilities for tax planning and forecasting. The Tax Manager will also own the relationship with HMRC. This capability will be supported by a retained tax adviser, who will provide specialist insight, including keeping up-to-date with key tax and technology changes, and provision of supporting technology.

Pensions

The Pensions team within the Future System Operator will ensure pensions are fully compliant, well-governed and administered appropriately. The team will be responsible for scheme management and pensions administration oversight, vendor management of pensions providers, reporting, governance and controls, and engagement with trustees, business leaders and other stakeholders.

The Treasury, Tax and Pensions teams will be led by a senior role.

Insurance

This management of insurance, including insurance policy and claims management, will be absorbed by the Financial Reporting and Controls team.

Indirect Procurement, Engineering Services and Fleet

Indirect procurement will provide centralised commercial support to the business to drive value for money across all spend categories. This indirect procurement capability will be supported by resources to cover IT procurement, innovation and back office procurement, including engineering services and fleet. This will be overseen by a lead to manage both the Indirect Procurement and Property teams. Direct procurement capability (i.e., specialist procurement support for Balancing Services and Pathfinder projects) will stay within the business, aligned with operational functions.

Property

The Property team will be responsible for the overall property strategy and relationship management, with an outsourced property management provider who will provide operational property and facilities management services, including physical building security. These outsourced contracts will be provided for all locations, including the Control Centres.

6.1.3. Transition activities

To minimise risks associated with the transition and to mitigate against complexities associated with building a new standalone organisation, we intend to build some early capability ahead of day one. This may be subject to discussion and agreement with National Grid plc. For some key roles, this build may be up to six months in advance. This will include ensuring both the CFO and Financial Controller roles are in place to build the Finance function and provide guidance and direction setting as part of the transition. The Treasurer will also be onboarded early to build the banking relationship and support standalone funding requirements. Other key roles will be brought in between one to four months in advance of day one to minimise transition risks and to build critical knowledge.

Additional transitional support will be needed to de-risk complex areas further, including interim resources to set up and manage financial controls and an interim Head of Tax role to set up tax strategy and processes. This latter role is expected to be absorbed into the overall Head of Treasury, Tax and Pensions role in the enduring state, where tax activities are expected to be relatively stable and of medium complexity.

Transitional service agreements (TSAs) will also be used on day one to reduce risk. We anticipate we will have TSAs for:

- Pensions – trust administration and systems for managing the National Grid UK Pension Scheme and secretarial/governance services for Trustees (estimated to be in place for 12-24 months).

- Pensions – corporate pensions support in key areas such as risk management, financial accounting and regulatory support (estimated to be in place for 6-9 months).

- Business Services technology support for managing back office applications including S/4HANA, Coupa and Concur, to provide technical (non-process) support to the business (estimated to be in place for 18-24 months).

- Property facilities contract management, access to facilities management contracts for Faraday House (TSA for duration of time in this location), other office locations (estimated to be in place for 3-6 months) and CNI data centres (24 months), including physical security and management of in-flight capex projects.

We will also have a dependency on IT TSAs for systems and procurement resources, to support the technology landscape under TSAs with National Grid plc. While this is an indicative view of possible agreements, actual TSAs will be developed during the design phase by National Grid plc, in consultation with the ESO.

In addition, we propose the existing IT, corporate and professional services frameworks used by the ESO be novated to enable continued support on day one, unless there is consumer value in exploring alternative options. As these agreements come to their natural expiry date, we will re-tender based on the revised requirements of the Future System Operator. This approach will require input and agreement from National Grid plc.

There will be limited change as part of the transition from day one to day two as we will have built the majority of capability early. There are a few interim roles required for day one which will not be required in the enduring organisation, including the interim capability to manage SOX controls. In addition, the two interim roles (Treasurer and Head of Tax) will be replaced by a single Head of Treasury, Tax and Pensions.

As we exit TSAs with National Grid plc, we will build this capability into our enduring structure. This will include a Systems Technical Analyst in the Financial Reporting team, and new Pension and IT procurement resources.

As part of the transition from day one to day two we will continue to review and improve our processes (e.g., planning and integration of IT processes) to maximise effectiveness.

6.2. Human Resources: People, capability and culture

6.2.1. Our existing capability

The ESO has a small, dedicated Human Resources (HR) team, primarily focused on Business Partnering and driving the people agenda. There is also currently a small team within the business Strategy function focused on people and capability, delivering workforce and capability planning. Most of the current HR services are provided by National Grid plc's People and Culture function and Business Services. These include the full range of transactional and operational HR activities, such as payroll, query management and recruitment, as well as strategic support for Reward, Talent, Employee and Labour Relations, and Learning.

6.2.2. Transformation to a Future System Operator

Maintaining world-class levels of system operation and delivering our ambitions for the Future System Operator will require us to have the right people and capabilities in place. Our success will be built on our sustained ability to attract, retain, train, motivate and engage our people. To

deliver this we will need a resilient, agile, skilled and diverse workforce. The HR function we have designed will play a central and pivotal role in enabling the business to achieve this.

The HR function will be responsive, flexible and accessible. It will lead through data and insights ensuring the Future System Operator can attract and retain the best talent. It will create a fantastic candidate and employee experience, and ensure our desired culture is embedded. It will support the business to develop strong leadership and the future capabilities it needs. We set out below how we will achieve this.

3.0 HR People Capability & Culture

| 3.1 Partnering and Strategy | 3.2 Talent & Capability | 3.3 Total Reward | 3.4 Service Excellence and EX | 3.5 Service Delivery |

Figure 11: HR function capability model

Partnering and Strategy

The services provided by the new HR function will include Business Partner roles covering both front and back office functions. As well as partnering strategically, they will lead on key areas including employee relations and organisational design.

Talent & Capability and Total Reward

Talent, capability and reward expertise will be delivered through a centre of expertise. Specialists will drive the strategic direction and work closely with external partners to deliver interventions in these areas.

Service Delivery, Service Excellence and Employee Experience

The HR operational services, including recruitment and payroll and supporting technology, will be delivered effectively and efficiently by selected expert managed services providers. The HR function will ensure these services are connected, and through best-of-breed technology, will enable and enhance the end-to-end employee experience.

Technology

Initially, the technology required to operate the HR function will be provided through TSAs with National Grid plc. To make sure that the Future System Operator is supported effectively and has the right technology in place to meet its future needs, at the end of the transition period the organisation will adopt a new core HR technology infrastructure. This will be implemented as part of the procurement of managed service providers, with technology and services being paired together.

This will give the Future System Operator access to best-in-class partners and technology in key areas like talent management and acquisition, where technology developments move rapidly and being at the forefront will be critical in attracting and retaining the best talent. Taking this approach also reduces the focus of the HR function on managing technology and processes, enabling it to invest time and energy in driving strategic people initiatives.

Combining some outsourced service provision and technology will result in an efficient investment, increasing agility and the ability to adopt technology innovation, while providing an opportunity for policy and process simplification.

People and capability

As described above, there will be a significant reshaping of the existing HR capability currently embedded in the ESO. To deliver the services described, the future HR function will require a combination of:

- Skilled HR Business Partners

- Key specialists in areas such as Reward and Talent

- A strong capability in vendor management and employee experience.

6.2.3. Transition activities

HR capability transition

The development of the enduring HR capability will happen across two key milestones. For day one we intend the core HR function will be fully mobilised, with some additional short-term roles supporting transition activity and the go-to-market approach for future outsourced services.

On day one, most of the HR services that will eventually be delivered by a third party in the enduring state will be delivered via TSAs with National Grid plc, with the exception of Talent Acquisition. Attraction of talent will be fundamental to success and therefore we will identify an expert partner to support our operational recruitment.

The remaining services will be transitioned over the subsequent six months as we identify the right strategic partners to best enable the future system operator for day two.

People transition

The HR function must play a critical role in enabling the Future System Operator as it transitions to a standalone organisation. Supporting recruitment of key talent, driving cultural transformation and developing a leading employee value proposition will require significant investment and focus, in addition to transitioning the function itself.

For this transition, our plan includes temporary roles involved in both the transition of the HR function and enabling the wider business transformation. The additional roles will be required to support activities as they transfer from National Grid plc to the Future System Operator and eventually to a managed service provider. Additional roles will include a case management role, talent acquisition role, new talent development role and a systems specialist role.

6.3. Corporate Affairs

The Corporate Affairs team manages and supports all external and internal communication activity, making sure it aligns with the ESO's mission and objectives. To do this, the team has capability in public affairs and policy, digital communications, internal communications with our people, and media relations. The Corporate Affairs function established within the Future System Operator will need to continue to provide this support.

Although part of National Grid plc's Global Corporate Affairs function, the current ESO Corporate Affairs team is entirely ringfenced. The team is also supported by the EU Liaison office, with resource dedicated to representing the ESO in Continental Europe. Our plan mirrors the current resource allocated to the ESO, replicating the team to ensure ongoing support is provided for communications.

By establishing the Future System Operator as a public body, we anticipate that it will need to develop deeper relationships with a broader stakeholder landscape. This will include the UK Government (including departments of state and executive agencies), as well as the devolved administrations and other democratically accountable bodies, such as local governments. The team will need to evolve to reflect this wider role. For day one, our plan includes recruiting resource with the relevant experience in public affairs and policy to the team. Over time, the wider Corporate Affairs function will also need to enhance its capability to manage a wider range of stakeholders.

6.4. Corporate audit and assurance

The current ESO Assurance team is responsible for the 'second line of defence', overseeing and monitoring the management of risks and compliance with controls across the business. It provides the policies, frameworks, tools, techniques and support to enable risk and compliance to be managed at the 'first line' (i.e., as part of day-to-day business activity). The team monitor the effectiveness of the business risk management and help to ensure consistency in risk measurement. These assurance activities are already delivered by resource within the ESO and so our plan assumes this team will be transferred to the Future System Operator as is.

As an independent organisation, the Future System Operator will also need to establish a standalone corporate internal audit function. This 'third line' activity, which sits outside risk management processes, ensures both the business and the Assurance function itself are operating effectively, as well as advising on improvements where required. This capability is currently provided by National Grid plc. Our plan costs for establishing internal audit capability within the Future System Operator. This will be complemented by 'co-sourcing' of externally provided audit support. The Future System Operator could introduce a new 'Chief Risk and Internal Audit Officer' to oversee the amalgamated internal audit and assurance capability.

Assurance activities within the Future System Operator will not just be restricted to the Assurance function itself and the 'first line' responsibilities of all staff and managers. As the wider assurance capability across the business matures, all our people will need to demonstrate that work is completed in a safe and compliant way, an open and transparent culture exists to allow issues to be raised, and risk and compliance approaches are used to inform all decision-making.

6.5. Legal

Legal expertise supports a wide range of activities across the ESO, including managing our regulatory obligations, procurement of balancing services, codes changes and progressing innovation projects. We anticipate the need for legal expertise will grow as the Future System Operator takes on new and enhanced industry roles, such as the advisory role. By establishing the Future System Operator as a public body, we will also need sufficient capability to manage judicial reviews and freedom of information requests. The standalone legal capability within the Future System Operator will need to reflect this increased scope of work and the requirement for in-house business and regulatory knowledge and advice.

Legal support is currently provided using a ringfenced business partner model. Further resource is provided by a small non-ringfenced team from National Grid plc supporting the ESO on an ad hoc basis. Our plan mirrors the current resource providing legal support to the ESO, with a small increase to reflect its growing mandate. This team will work closely with IT to ensure cyber security and monitoring is appropriate and in line with policy, and with the Assurance function to support the management of risk. In addition to the in-house team, panel firms will continue to be used for legal specialisms, such as treasury and pensions, and to manage transactional workload.

A Company Secretariat, with responsibilities for governance, the Annual Reports and Accounts process and managing the formal shareholder relationship, will continue to be needed. This service is currently provided on a part time basis by National Grid plc and so we have costed for standalone capability to replicate this.

In line with BEIS and Ofgem's consultation decision, we have not planned or costed for the Future System Operator to take on a greater role in dispute resolution.

Section 7. Financials

7.1. Introduction to costs

Our submission identifies the indicative costs associated with the ESO transitioning to a Future System Operator, outside of National Grid plc, with new and enhanced industry roles. In all areas of our planning, we have sought to ensure a realistic and deliverable approach, reflecting this in our costing work to develop a plan that is pragmatic, credible and efficient.

We have identified two areas of cost; run the business (RtB) on day two and one-off costs.

The as-is cost baseline is taken from the core RIIO-2 Business Plan 2. FY24 is a projection of the current cost base and is subject to change.

In developing our indicative costs, we have used a number of more detailed assumptions:

- The majority of direct ESO costs (i.e., for ESO dedicated activities) are assumed to pass through from the as-is state to the to-be state. There are some exceptions within the operational business, where incremental headcount requirements were identified driven by future growth of the business.

- Any allocations from National Grid plc will cease for the new standalone entity and be replaced by to-be costs.

- Specific considerations relating to the separation of pension liabilities are out of scope of this costing analysis.

- One-off costs for National Grid plc led separation activities are out of scope of this separation analysis. Further detail on what this means can be found in table 4.

The cost estimates included in this submission are indicative at this stage. Further work will be needed in the detailed design phase in collaboration with National Grid plc to refine people and non-people costs and agree key decisions (e.g., transitional service agreements, dual running of roles, contracts etc.).

7.1.1. Our approach to RtB costs

RtB costs: people

To design the to-be organisation, target operating model (TOM) workshops were held with experts from each function. These workshops informed our view of the capability build needed, along with the indicative grades, to undertake new and enhanced industry roles, and build standalone back office capability. Fully loaded costs per grade from the core RIIO-2 Business Plan 2 were used to cost the to-be organisation.

Further detailed work would be needed to design organisational structures, and confirm roles, grades and reporting lines in the next phase of the project.

Allocated costs by function, taken from the core RIIO-2 Business Plan 2, were used as a starting point to develop estimates of to-be non-people costs. These as-is costs were reviewed to assess whether they would be required in the new organisation. Where a cost was deemed to be required, a replacement or additional cost was calculated using one of the following approaches:

- Bottom-up build, taking into account the impact of separation (e.g., dis-synergies). Where a granular split by people/non-people allocated costs was not available, these costs were passed through from the as-is to the to-be cost base.

- New contracts, such as for managed service providers (MSPs), were costed using comparators.

- Functional TOMs, external advisers, comparators and benchmarking were used to ensure completeness of third-party standalone cost assumptions and to validate the costs and design outputs.

RtB costs: IT

Given the uniqueness of the IT function, we used a top-down costing approach to examine the likely dis-synergies and potential standalone opportunities for this crucial element of the business.

A set of low, medium and high dis-synergies were analysed against a comparator data set from seven carve-out transactions, where a smaller entity was being separated from a larger group. These dis-synergy ranges were then applied to the ESO's as-is IT cost base to obtain an estimated projection. To compare the spend for the referenced carve-out transactions to the ESO's baseline run costs, Ofgem's Technology Business Management Taxonomy 4.0 capability model was mapped to the ESO's IT sub-functions.

The high range from the top-down and dis-synergy approach has been considered as the to-be IT costs for the standalone state.

7.1.2. Our approach to one-off costs

Our one-off cost assumptions are indicative estimates. We have used input from external advisers and have reviewed costs against comparator data. We have assumed that the ESO will bear the cost of establishing new capability, where it is required but not transferred by National Grid plc.

Table 4 below summarises the areas of expected one-off costs for National Grid plc and the Future System Operator. National Grid plc costs are not included in this submission.

Table 4: Summary of areas of expected one-off costs for National Grid plc and the Future System Operator

National Grid plc activity		Future System Operator activity
Identification, consultation and training of people transferring to the new entity, retention package	**People**	Recruitment and training for new roles, entity specific training*
Preparing systems for TSAs, replicating systems where they represent the enduring solution, data separation	**Systems and data**	Establishing new systems, cleansing and deleting data, transitioning retained applications, standing-up new networks and infrastructure, standing up service management integration (SMI), standing up cyber
Separation of existing assets and liabilities	**Assets**	Refreshed branding, any required new office space and fit-out
Separation of existing contracts	**Contracts**	Establishing new contracts, consenting costs for contract separation*
Establishing the new entity, financial close, entity marketing and buyer interaction, Sales and Purchase Agreements (SPA)s	**Transaction/ legal**	Third party costs for legal support, specialist advisers/vendors, preparation of business plans, input into regulatory and legislative processes
Preparation and running of the TSAs, managing TSA exit	**Separation and transformation management**	Running of TSAs, managing TSA exit, future system operator management cost

* Some of this activity may be led by National Grid plc, in collaboration with the ESO.

7.1.3. Potential transitional service agreements considerations

As is typical in most transactions, we do not expect standalone services to be fully stood up on day one. Instead, transitional service agreements (TSAs) will be put in place, where National Grid plc provide support while standalone capabilities are established. There may be a need for some reverse transitional requirements (rTSAs), where the ESO is required to support National Grid plc.

Detailed discussion with National Grid plc on the scope of transitional requirements and development of TSA/rTSA term sheets would form part of the next phase of the programme.

7.2. Cost tables

7.2.1. RtB costs

Our plan for the standalone Future System Operator includes approximately 1,700 FTEs. Where it creates value for the consumer, we have outsourced some services. We have estimated an indicative annual standalone RtB cost to be c.£210 million to c.£223 million. Further detail on these costs can be found below.

Table 5: Cost summary – RtB costs (numbers may not add exactly due to rounding)

Opex (£m 18/19 prices)	As-is costs FY24 BP2	Incremental cost adjustments	Standalone costs Low	Standalone costs High
Direct RtB costs	86	9	95	95
Non-IT indirect RtB costs	17	11 – 13	28	31
IT indirect RtB costs (with cyber)	71	2 – 11	73	83
IT project opex – ESO costs	14	-	14	14
Total opex	189	22 – 34	210	223

The concepts of direct and indirect RtB costs are only valid within the current state of ESO as part of National Grid plc. Once the transition to a Future System Operator is complete, all functions would be direct functions.

Direct RtB costs

- A c.£6 million increase in incremental costs is driven by the growth of the business due to approximately 80 additional FTEs needed to undertake new and enhanced industry roles. A summary of the indicative FTEs associated with each role can be found in table 6. Our design for these industry roles is based on the decisions set out in the joint BEIS and Ofgem consultation response. We anticipate that the scope of roles will change as responsibilities are clarified when legislation, licences and codes are drafted, as well as the associated industry engagement. Further detailed work would be needed to refine our assumptions in the next phase of the project.

- Approximately £3 million in incremental costs is related to direct procurement (specifically Network Competition) and Operational and Maintenance contracts (ongoing run costs related to the new Contingency Control Centre).

Table 6: Summary of FTEs associated with new and enhanced roles

New and enhanced roles		FTEs
Role 1	Office of Energy Resilience and Emergency Management	25
Role 2	Gas market strategy	10
	Whole energy system market strategy	5
	Pathfinders procurement support*	4
Role 3	Gas network system planning	20
	Whole energy system planning	5
Cross-cutting	Advisory role	6
	Driving competition (Procurement Body)	7

* Procurement expertise for the delivery of Pathfinder projects is currently provided by National Grid plc. As a standalone organisation, the Future System Operator would need to replicate this resource.

Non-IT indirect RtB costs

- In the Finance function, we will create new standalone capabilities. Incremental costs are driven by the additional c.74 FTEs (c.£7 million) directly employed by the Future System Operator, and new contract and property requirements (c.£4 million) in this function.
- Given the growth in FTEs in the new organisation, we have assumed that more office capacity will be required in the future. Due to constraints at our current site at Faraday House in Warwick, additional office space may be needed nearby, or a new site established in the Warwick area to accommodate this. Our plan also includes a London office to maintain a presence in the capital and support talent attraction and retention. No other changes have been assumed for other ESO locations.

IT indirect RtB costs

- The IT RtB to-be cost range of c.£73 million to c.£83 million reflects the aggregate analysis of dis-synergies in IT cost in a carve-out scenario. These are mainly driven by dis-economies of scale, cost of people, hosting (data centres), networks and end user devices.

7.2.2. One-off costs

To achieve the transition and transformation of the ESO into a new organisation, we have estimated one-off costs to be between c.£105 million and c.£145 million.

Programmes at this stage in their development would typically allow for 30 per cent uplift to cover variation in one-off transition costs. This would bring the range of estimated one-off costs to between c.£135 million to c.£185 million.

Non-IT one-off costs

Total non-IT one-off costs have been estimated to be between c.£66 million and c.£88 million. This is made up of costs across five categories:

- People costs, including transitional roles, and costs of retaining, recruiting and training employees, and building the employee value proposition.

- Assets costs mainly refer to the one-off costs of changes to the property estate, including a new Contingency Control Centre.

- Contract costs include legal support to establish new contracts and rebranding costs.

- Legal one-off costs refer to legislative and framework agreement input, and costs of creating new licences for the Future System Operator.

- Separation and transformation management costs refer to all the costs associated with implementing the transition, including but not limited to programme management, transition execution and readiness, and TSA management.

The total non-IT one-off costs are summarised in table 7 below.

Table 7: Summary of total non-IT one off costs (numbers may not add exactly due to rounding)

Estimated one-off cost (£m 18/19 prices)		
Non-IT numbers	Low	High
People	5	7
Assets	20	39
Contracts	3	4
Transaction/Legal	1	1
Separation and transformation management	38	38
Non–IT total	66	88

IT one-off costs

Total IT one-off costs are estimated to be between c.£38 million to c.£54 million. This is made up of costs across four categories, which are summarised in table 8 below. Further detail on each of these categories and the activities included can be found in Section 5.

Table 8: Summary of IT one-off costs (numbers may not add exactly due to rounding)

Estimated one-off cost (£m 18/19 prices)			
IT cost summary	Low	Medium	High
Applications	26	31	36
Infrastructure	8	10	12
EUC/Workplace	5	5	5
Security	1	1	1
IT – total	38	46	54

Migration of applications to the Future System Operator assumes a 'lift and shift' approach. This means no application enhancements will be carried out unless necessary. The migration also assumes that the initial set up of the cloud landing zone is already in place.

One-off costs of the migration have been calculated based on an estimated approximate effort/cost to migrate applications depending on the complexity of each application. Each application has been determined to be either low, medium or high complexity based on a combination of attributes such as the complexity to separate, number of users and the nature of the application.

Section 8. Our transition plan

8.1. Our plan to stand up the Future System Operator

The successful transformation of the ESO to a Future System Operator is underpinned by a transition plan designed around a series of critical path activities between today and achieving the enduring state entity. Taking this approach ensures we have proposed a robust, deliverable plan that minimises risk while prioritising rapid transformation.

The first step along our proposed critical path will be the publication of a memorandum of understanding (MoU), to be signed by the ESO, National Grid plc, Ofgem and BEIS. The publication of an MoU will provide clarity on shared principles, objectives and desired outcomes, along with allowing the progression of no regret activities.

The ESO's detailed design phase will run in parallel to National Grid plc's blueprinting phase. The detailed design phase encompasses parallel National Grid plc and ESO activities, including defining the transitional service agreements (TSAs) that will become active for day one. The ESO will play a role in this by reviewing and challenging the design, and refining the ESO cost submission that was developed in our blueprint phase. We assume we will be able to collaborate and share data with National Grid plc to support the detailed design phase. We will also progress design for areas of transformation not impacted by National Grid plc, for example managed service provider (MSP) arrangements and new industry roles. The output of this phase is a completed separation blueprint from both National Grid plc and the ESO's perspective, and more detailed RIIO-2 Business Plan 2 submission costing to achieve the separation and transformation activities.

The separation transition phase is about executing separation transition activities as described in the detailed design phase to achieve day one of the Future System Operator as a newly owned organisation. The ESO will execute a number of day one critical activities, including the mobilisation and establishment of day one critical MSPs, early recruitment for critical roles, branding and public relations activities, contract novation and/or renegotiation, and mobilisation to enter TSAs. Within this phase we will achieve our day zero milestone, where the ESO is operating standalone (including back office) within National Grid plc.

In parallel with planning and executing separation activities, the ESO will also be preparing to take on new industry roles in gas strategic network planning and gas market strategy (to go-live from day one), whole energy system market strategy, whole energy system planning, early competition, the advisory role, the Office of Energy Resilience and Emergency Management, and a new Contingency Control Centre. Significant industry engagement will be needed as these roles are developed. The build and implementation of the capabilities, processes and systems required for these roles, along with the completion of the legislative process and associated licence and codes changes, will enable the Future System Operator to take on these new roles.

The final group of activity includes all the transformation activities required to transition off TSAs and into the enduring state. This involves significant IT transformation over a two year period. The completion of this will trigger our final milestone, day two or enduring state.
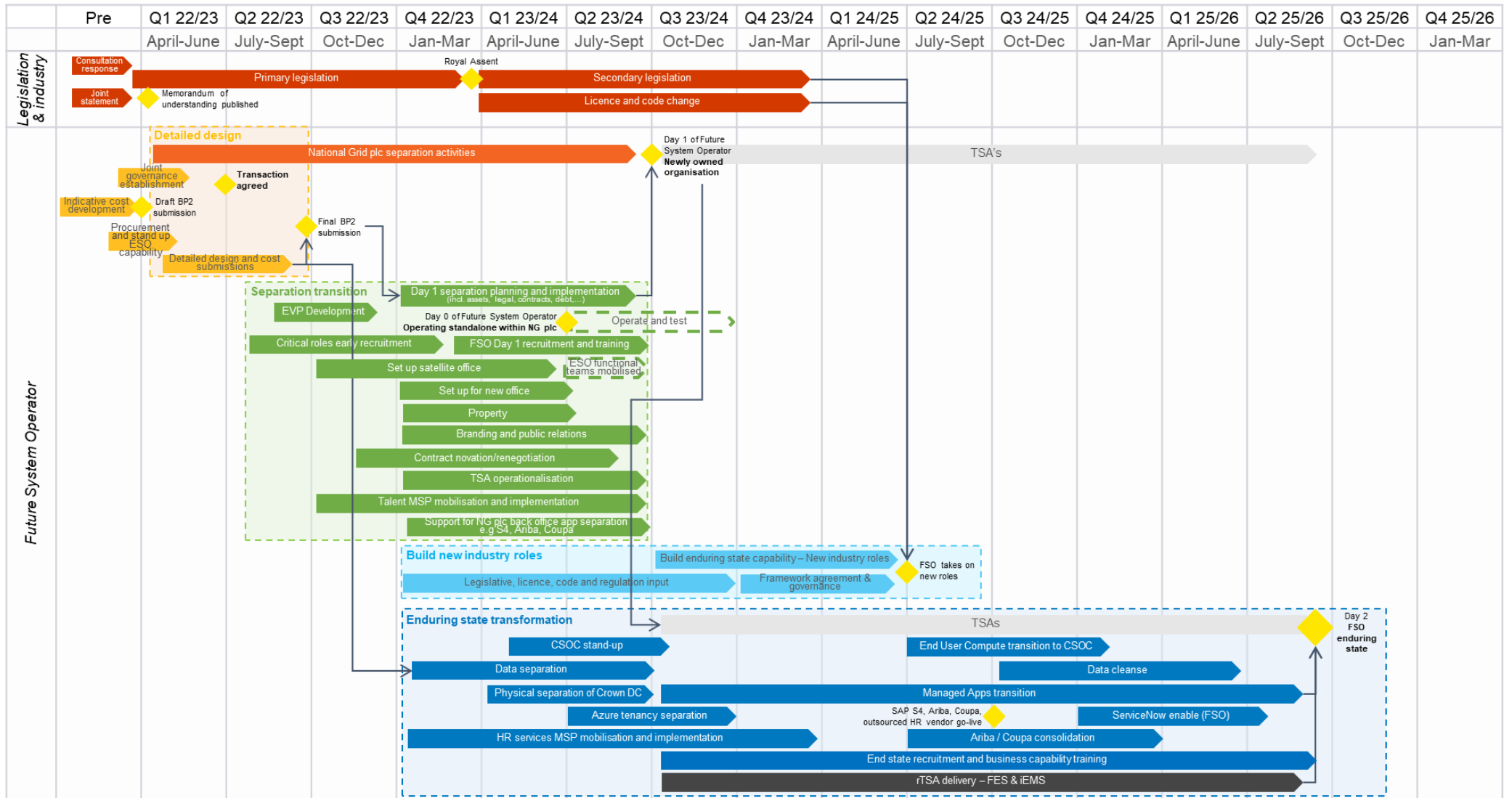
Figure 12: High level transition plan

8.2. Definition of milestones

Our plan refers to important milestones, which we have defined below. Working towards each milestone in a phased approach is important to mitigate undue risk and provide certainty for our people.

- Day (-1)*:* a transaction agreement/MoU has been reached. Start of no regret activities.

- Day 0*:* the ESO begins to operate as a standalone entity (including back office functions) within National Grid plc.

- Day 1*:* the Future System Operator is under new ownership but operating under TSAs for certain services.

- Day 2*:* the enduring operating model for an independent Future System Operator is reached, with new industry roles and fully off TSAs with National Grid plc.

8.3. Potential to accelerate the transition

Following the consultation decision from BEIS and Ofgem, there is a joint desire from National Grid plc and the ESO to identify opportunities to accelerate the transition to a Future System Operator. In the event of a potentially accelerated scenario, we believe there are six key factors to consider:

1. **TSAs:** our current principle is to minimise TSAs, where possible, for day one. In an accelerated scenario, we may consider including more TSAs than we have currently planned for. This will not preclude us from undertaking separation work ahead of day one but could provide an option if certain areas of the organisation have not been stood up by day one.

2. **Capability build:** we will need to have the ability to recruit some key roles ahead of day one, specifically in Finance and IT. Regarding the new and enhanced industry roles, strategic gas capabilities might also be required in advance.

3. **Accelerated separation planning and readiness with National Grid plc:** a potential option for accelerating interactions would be to set up several areas of focused National Grid plc/ESO separation workshops to align on operational assumptions and areas of ownership within day one preparations.

4. **Mobilisation of next phase:** we will need to mobilise our separation planning team and start work on no regret activities as soon as possible.

5. **Critical path to day one:** we will need to quickly validate which operational activities will need to be undertaken by the ESO and National Grid plc on day one by function ("must have" activities), stage gates, and go/no go decisions for operational readiness.

6. **Clarity on the activities that the new owner will need to undertake on their side on day one:** we need clarity on which government/BEIS/Ofgem approvals we will require and how this fits with operational timelines.

Further discussion and engagement between the Government, Ofgem, National Grid plc and the ESO will need to happen in the next few months to identify and validate the opportunities for acceleration.

8.4. Transformation governance

As with any large-scale transformation, efficient and effective governance is critical to the success of the Future System Operator programme. The creation of the Future System Operator will be a significant transformation programme that must be delivered alongside other considerable industry change, without compromising security of supply or continued delivery of the ESO's RIIO-2 Business Plan commitments.

We have defined a relevant internal governance structure to provide rigour and cadence to each phase of the project. This is detailed in table 9. Alongside this, we recognise there will be a need for engagement with stakeholders across the industry to collaboratively drive forwards the creation of the Future System Operator. We have listed some of these key relationships in table 10 below.

Table 9: Internal governance

Party	Role
Steering Group	The Steering Group is comprised of the ESO Executive Team, who: • Provide final approval of transformation activities, costs and plan. • Set strategic direction and provide ultimate decision making on any escalations. • Provide an overarching view of design and delivery at a strategic level.
Design Committee	• Responsible for challenging and discussing key design decisions. • Approving design of enduring state and interim ESO within design principles. • Enable the progress of the programme by providing a single point of authority for addressing key design decisions within the programme. • Make recommendations to Steering Group on design decisions that are escalated.
Weekly Status Hub	• Responsible for the regular management of the workstreams and the update of key programme documentation to feed into Design Committee, Steering Group and ESO Board. • Escalation of risks/issues etc to programme management. • Delegation of responsibility for tasks.

	• Forum of decision-making for operational and tactical decisions at a workstream level.
Programme Partner Support	• Our Programme Partner will provide robust methodology and governance support for all aspects of the programme. They will provide challenge and bring experience and lessons learnt from previous separation and transformation programmes to ensure we are delivering in a way that is efficient, effective, and safeguards security of supply and consumer value.

Table 10: Key external stakeholder relationships

Party	Activities
Ofgem and BEIS	• Lead the legislative process. • Testing and validation of assumptions taken throughout the lifecycle of the programme. • Work collaboratively to scope and design new industry roles that the Future System Operator will undertake. • Support in the mitigation of risk to existing operations from the transition to the Future System Operator. • Oversight of all parties in readiness for the changes that creation of the Future System Operator will entail.
National Grid plc	• Collaborate with, and receive detailed data from, National Grid plc to support detailed design, separation and transition activities. • Insofar as is practical, establish joint or parallel governance forums over the lifecycle of the programme, to day one.
Wider industry	• For directly impacted entities, participate in appropriate stakeholder forums to collaboratively develop proposals. • Open communication as and when practical, with tailored engagement on specific topic areas. • Provide views through relevant consultations.

8.5. Conclusion

Our plan will deliver a Future System Operator ready to meet the challenge of making rapid progress towards net zero in a way that is efficient and fair for consumers while maintaining energy security.

We have developed a proposal for a phased implementation that provides a cost-effective approach to the transition to a Future System Operator with a high degree of deliverability,

without presenting undue risk to the core operations of the ESO today. The plan builds on our role as a natural convenor for industry, taking on greater responsibilities to drive coordination, collaboration and alignment in the creation of whole energy system solutions. An independent Future System Operator can further demonstrate impartial decision-making that places consumer fairness and value at the heart of all its activities.

A Future System Operator with the right roles and capabilities to take a fully whole energy system perspective and the appropriate governance to enable agility and innovation, will play a vital role in the energy system's drive to net zero.