

Jane Dennett-Thorpe and Gavin Knott
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19 May 2023

Dear Jane and Gavin,

Consultation on frameworks for future systems and network regulation: enabling an energy system for the future (the 'Consultation')

This response is from National Grid plc, covering our electricity distribution (NGED) and transmission (NGET) businesses. It does not cover National Grid Electricity System Operator (ESO), nor National Gas, in which we hold a 40% stake. Our response is therefore primarily focused on electricity networks, though we recognise the importance that whole-system solutions will need to play in delivering the energy transition and the need for the outputs from the Consultation to work across the sectors.

We are focused on the overall costs and benefits for consumers of our investments and believe the regulatory framework should adopt a similarly holistic perspective

At a time that society faces unprecedented challenges compounded by the effects of a rapidly changing climate, war in Europe and broader geo-political tensions, the need for a long term secure, sustainable, affordable energy supply for all consumers has never been more important.

The UK has already made significant progress towards transforming its power system for the benefit of consumers, society and our natural environment - achieving world-leading decarbonisation with a c.66% reduction in greenhouse gas emissions from energy supply between 1990 and 2022¹. However, the scale and pace of transformation needed to deliver a long-term secure, sustainable, affordable energy supply for all in the timeframes available is fundamentally different to what has been achieved to date.

We recognise the responsibilities we have to help achieve these goals: electricity networks will play a crucial role in this transition investing significantly in order to:

1. connect more, cleaner, cheaper, renewable energy to our system, which will improve (i) consumer bills, by reducing the impact of carbon costs and volatile commodity prices, (ii) national energy security, by reducing reliance on imported fossil fuels, (iii) greenhouse gas emissions, and (iv) air quality, by reducing air pollutant emissions from traditional generation sources;
2. add needed capacity which will (i) reduce the associated constraints costs and flow through to savings on consumer bills, and (ii) enable consumers to progress their own transitions to net zero, as adoption of electric vehicles, heat pumps, solar panels and other low carbon technologies increase; and
3. upgrade and uprate the networks so they can meet the increasing demand for electricity that will accompany the energy transition and withstand increasing extreme weather conditions driven by climate change, which will ensure robust, resilient networks for a constant reliable service to consumers.

With these broad benefits in mind, we agree with your framing of the analytical approach around Ofgem's consumer interest framework. We believe this will enable you to assess the merits of alternative regulatory frameworks and the costs and benefits of electricity network investments based on the overall contribution to consumers, society and the natural environment.

As we go forward with our plan for the next price control, we will continue to analyse the whole bill impact of our investments to inform decision making based on the overall impact on consumers. For example, our analysis of the ASTI projects show that the significant capital expenditure on electricity networks results in a net reduction in consumers' energy bills. We also note the potential that the increase in network investment has to support the Government's wider economic development and job creation priorities, as well as the

¹ [Provisional UK greenhouse gas emissions statistics - data.gov.uk](https://data.gov.uk) – 2022 data tables

strategic priorities for the sector set out in the draft Strategy and Policy Statement for Energy Policy in Great Britain².

Our view on the right regulatory framework is driven by how we will need to work to deliver the significant increase in investment over the next five to ten years

Our vision is to be at the heart of a clean, fair and affordable energy future, ensuring our investments to deliver a net zero energy system unlock the resulting benefits. Investment is central to enabling the transformation of the energy system that consumers and broader society need, and which our industry is collectively responsible for delivering. It is therefore essential that the future regulatory frameworks attract and galvanise the investment needed to deliver at an unprecedented scale and pace.

Our thinking on the future price control framework has therefore focused on one overarching question: *“what framework facilitates us to make the investments we need to, and manage the risks that come with this, so consumers benefit from the net zero transition?”*.

Energy network companies need to be agile and deliver an unprecedented volume of work faster, and in different ways to deliver the necessary upgrades. We must also do this in a challenging global context with significant supply chain constraints and international competition for capital. Just as we are reviewing how we will work; we agree that it is right for Ofgem to review how networks are regulated.

We believe a new regulatory framework ***is*** needed, informed by those elements that work well in today’s framework. We also think different approaches will be needed for each sector. We think **either a mix and match approach** combining elements of the three archetypes set out in the Consultation or **an ex-post approach** (with certain controls in place to mitigate risk and ensure efficiency of process is maintained) based on the freedom and accountability archetype, **could be appropriate models**. The rest of this letter explains the rationale for this position.

To plan our work for the next price control and beyond at the transmission level, NGET is taking a bottom-up and top-down approach: combining a detailed assessment of investment required at its existing sites and networks, with a scenario-based approach looking at how those assets will need to be upgraded and expanded based on a range of net zero scenarios. We are combining this into holistic ‘Future Network Blueprints’ which will drive the programmes of work needed across different drivers (e.g. customer connections, SF6 replacement, asset health, and strategic investments). This approach is designed with the interests of consumers and the communities that host our infrastructure at its centre, by ensuring each time we get access to the system we carry out the right work to deliver a future-ready network, avoiding repeated system access costs, and minimising disruption to local communities.

This approach is required given the scale of what NGET needs to deliver over the next 10 years: building over 5 times more onshore transmission than we have built in the last 30 years and around 4 times more new marine cables than our current offshore network by 2030³. At the same time, early indications from the Future Network Blueprints indicate that c.30% of our existing transmission circuit asset base will require intervention (upgrade or replacement) by 2035 alongside over 60 substation sites identified for potential upgrade, extension or rebuild.

NGED is at the start of its latest price control period, during which it will deliver significant network investment to meet the requirements of the energy transition, including readiness for up to 1.5 million additional electric vehicles and 600,000 heat pumps. As such, our focus is to assess how effectively the ED2 framework (in particular, uncertainty mechanisms such as volume drivers) facilitates the necessary investment, in order to determine the level of change required for the next electricity distribution price control.

The future regulatory framework should help network companies to mitigate and/or overcome three key challenges in the external environment to enable us to: i) deliver in the way we need, ii) manage the risks which rightly fall to us to manage so we can discharge our accountabilities, and iii) maximise the resulting benefits for consumers:

² [Strategy and Policy Statement for Energy Policy in Great Britain: consultation \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/844442/Strategy_and_Policy_Statement_for_Energy_Policy_in_Great_Britain_consultation.pdf)

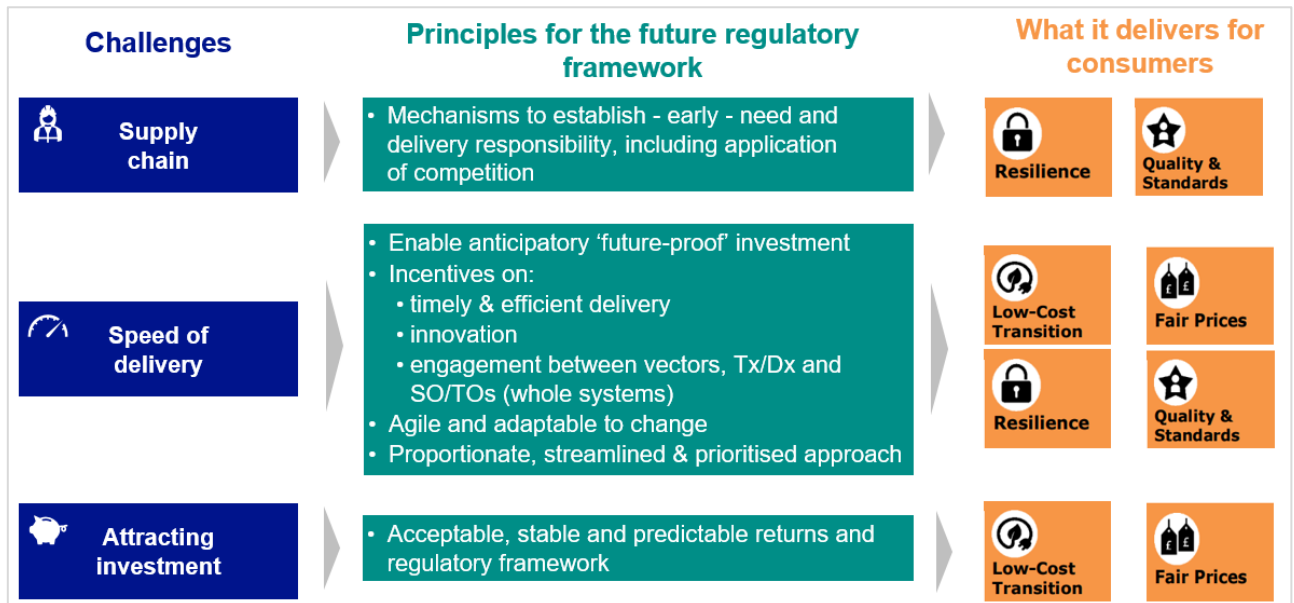
³ National Grid analysis based on an assessment of likely transmission asset installation required to deliver the projects in England and Wales identified in the Holistic Network Design under the Accelerated Strategic Transmission Investment (ASTI) framework

Challenge	What we need to be able to do
Speed of delivery: enabling investment and progress at the required pace, including identifying need and delivery responsibility (i.e. the role of competition) early and managing system access. At the same time we need to grow our own capabilities and capacity to support the pace of delivery	<ul style="list-style-type: none"> • Quickly confirm needs cases and clarify delivery responsibility when that need is identified, and in some cases in anticipation of firm demand, to ensure the relevant projects (in some cases, in a programmatic way – see further below) can progress with pace. For some projects, NGET needs to work with Ofgem to get confidence in the acceptance of need by early 2024 to remain on track. • Develop design principles to help guide how we plan for new and system upgrade work that reflect future and current needs, e.g. to meet desired level of climate resilience, demand growth, etc., to future-proof work, take a holistic view of investments across multiple drivers, avoid repeated / inefficient need for system access & disruption to host communities • Be incentivised to deliver in a timely & innovative manner and pursue efficiency opportunities (but not descope or underspend), to maintain focus on finding innovative solutions to confront the scale of change required, and timely & efficient delivery of net zero targets • Act with agility and pace, to adapt to changing circumstances, as macro-events, policy decisions, new technologies etc. influence the demands on the network companies, and to manage the uncertainty associated with the pathway to achieving net zero ambitions
Supply chain: securing resources and skills in the timeframes required in an increasingly competitive and constrained global supply chain, and managing the resulting shift of risk to the buyer, as suppliers move away from fixed prices	<ul style="list-style-type: none"> • Respond to the changing supply chain environment, given our continued accountability for delivery, and explore – working in tandem with the regulatory framework – new approaches to manage risks, including early engagement with the supply chain where necessary to secure capacity. • Adopt programmatic approaches to delivery to support supply chain certainty and coordinate work around system access, as seen with ASTI, and for low-cost high-volume ED projects, such as unlooping service cables between properties. IT and digital investment has also moved away from a project-specific approach to a more agile one, where software is under continuous programmatic development and improvement to ensure upgrades are efficient and stay on track to deliver the desired output
Investment: attracting the capital needed to fund the unprecedented scale of network development in the time available and in light of the changing risk environment	<ul style="list-style-type: none"> • Attract investment at the scale and pace required to unlock the future consumer benefits with returns that are acceptable for the risks involved in investing in the energy transition • Navigate market conditions that are no longer stable, with reversal of macro-economic trends that have seen interest rates reduce over the last decade or more • Receive sufficient cash flow to ensure licensees are financeable

We have developed a set of principles which we believe the new price control framework needs to meet in order to maximise benefits for consumers

Our principles form the bridge between the challenges facing network companies that we need to manage so we can deliver the necessary investments over the next five to ten years and the consumer benefits⁴ that will be achieved if we are successful in overcoming these challenges and delivering the required outcomes:

⁴ Signposted against Ofgem's consumer interest framework



We are building detailed regulatory options which we believe best meet these principles and are keen to work with you in developing the framework design over the coming months

We think the archetypes in the Consultation provide useful framing, but as there are several variants within each one, we are focussing on designing an optimum framework rather than making comparisons between the archetypes as set out in the Consultation.

At this stage, we believe the principles could be met through one of two approaches:

1. A **'mix and match' based approach**: incorporating elements of all three archetypes. This would take a similar approach to that suggested by Ofgem in the Consultation and apply the most appropriate model for each category of investment, reflecting its characteristics. The approach used for any one category may need to change during the life of the project to maximise consumer benefit. We are still assessing how this would work in practice to ensure the combination of approaches does not drive excessive complexity. We are also looking at the specific issue of determining the correct financing approach which properly reflects the risk/reward balance in such a model;
2. An **ex-post based approach**: a simpler agile, cost pass-through approach with a fixed rate of return across all investment. This would not preclude elements of the 'plan and deliver' archetype being adopted as a route to determining whether certain work is completed. This means networks are confident and able to progress investment at the speed of delivery required, without having to navigate upfront regulatory processes and reviews that could slow progress and delay the consumer benefits. We have experience of this type of regulatory approach with our US transmission networks, which are regulated by the US Federal Energy Regulatory Commission (FERC) using formula rates with a fixed return on equity. This approach offers benefits in attracting the necessary capital, focusing more on timely delivery (to connect new renewables and reduce constraints and overall consumer bills) than on short-term marginal network costs. It would also free up regulatory and network time to focus on the key issues at hand. We are considering how to apply efficiency incentives to this model.

In our more detailed response document, attached to this letter, we set out further details on the potential design the regulatory framework for the next ET price control could take, and the direction of travel we think is needed for the ED price control that will start on 1 April 2028, but there is more work to be done.

We will therefore continue to engage closely with you through the five workstreams that remain ongoing and would welcome the opportunity to present the two models we are developing to hear your views. Similarly, we plan to gather inputs from our Independent User Group and other stakeholders to inform the collective thinking on the future framework that will make the shared vision for a clean, fair, and affordable energy future a reality.

[By email]

Chris Bennett

UK Policy and Regulation Director and Programme Director FSO

National Grid FSNR Consultation Response

Delivering for 2035: Upgrading the grid for a secure, clean and affordable future

Our response is split into the following sections:

1: Context – delivering the energy system of the future:

- a. The consumer benefits of the future energy system
- b. The case for change
- c. What investments are needed to get to 2035 – covering NGET and NGED

2: Designing the right regulatory framework:

- a. What networks need to be able to do to deliver for consumers
- b. What the framework needs to deliver
- c. What the right regulatory framework might look like – including views on the financial framework
- d. Assessing the right regulatory framework – Ofgem's consumer interest framework

3: Process and next steps: sets out the process and key milestones we believe are required to get to 'implementation' of the next ET price control on 1 April 2026, and the next steps we plan to take to refine our views on the right price control framework (regulatory and financial) for ET.

Our responses to the specific questions raised by Ofgem in the Consultation are set out in [Appendix 1](#).

SECTION 1: CONTEXT – DELIVERING THE ENERGY SYSTEM OF THE FUTURE

The consumer benefits of the future energy system

At a time that society faces unprecedented challenges compounded by the effects of a rapidly changing climate, a war in Europe and broader geo-political tensions, the need for a long term secure, sustainable, affordable energy supply for all consumers has never been more important.

The energy system of the future will be one that is decarbonised, which will in turn support our economy becoming net zero and improve our energy security. The Government has set ambitious goals for 2035 (net zero energy system) and 2050 (net zero economy), which are accompanied by other interim targets such as the installation of 600,000 heat pumps a year by 2028, the connection of 50GW of offshore wind by 2030, and a ban on new petrol and diesel cars and vans from 2030.











Investment is central to enabling the transformation to the energy future consumers and broader society need, and that our industry is collectively responsible for delivering. Transformation at the scale and pace necessary will require everyone – industry, government and regulator – to think and act differently. This includes the designing and implementing of regulatory frameworks that attract and galvanise the private investment needed to deliver at an unprecedented scale and pace, enabling us all to play our part in delivering a network that is secure clean, and affordable for all.

The UK has already made significant progress towards transforming the UK's power system - achieving world-leading decarbonisation of its energy system with a c.66% reduction in greenhouse gas emissions from energy supply between 1990 and 2022⁵. However, the scale and pace of transformation needed to deliver the net zero transition at lowest overall cost in the required timeframes is fundamentally different to what has been achieved to date.

We recognise the responsibilities we have to help achieve the Government's objectives. Electricity networks will play a crucial role in this transition and will need to make a significant increase in investment during the next five to ten years. These investments will not only support delivery of net zero ambitions, but will also secure undeniable benefits for consumers, in line with the priorities set out in Ofgem's consumer interest framework⁶, by:

⁵ Provisional UK greenhouse gas emissions statistics - data.gov.uk – 2022 data tables

⁶ Figure 7 from the Consultation and as set out in full detail on page 8 of Ofgem's [2023-24 Forward Work Programme](#)

Benefit(s) delivered from network investment	Consumer interest framework alignment
1. connecting more cleaner, cheaper, renewable energy to our system, which will improve (i) consumer bills, by reducing the impact of carbon costs and volatile commodity prices, (ii) national energy security, by reducing reliance on imported fossil fuels, (iii) greenhouse gas emissions, and (iv) air quality, by reducing air pollutant emissions from traditional generation sources	<div>  Fair Prices  Quality & Standards </div> <div>  Low-Cost Transition  Resilience </div>
2. adding needed capacity, which will (i) reduce the associated constraints costs and flow through to savings on consumer bills, and (ii) enable consumers to progress their own transitions to net zero, as adoption of electric vehicles, heat pumps, solar panels and other low carbon technologies increase	<div>  Fair Prices  Quality & Standards </div> <div>  Low-Cost Transition  Resilience </div>
3. upgrading and uprating the networks so they can (i) meet the increasing demand for electricity that will accompany the energy transition and (ii) withstand increasing extreme weather conditions driven by climate change, which will ensure robust, resilient networks for a constant reliable service to consumers	<div>  Quality & Standards  Resilience </div>

Delivering net zero and unlocking these consumer benefits will be the defining feature of the network investments made during future price controls, determining the scale and pace of investment and innovation the companies will need to deliver, the capital they will need to raise, the ways of working network companies will need to adopt as we upgrade and maintain the network. It is therefore critical that these network investments are assessed against their impact on overall consumer bills, not just the network element.

Net zero is already playing a significant role for both NGED and NGET. It is an integral part of the RIIO-ED2 business plan for NGED and is shaping the investment profile for NGET, not only as it progresses the 17 Accelerated Strategic Transmission Investment (ASTI) projects allocated to it in December 2022, but with the major investment that will be needed over and above ASTI, as described further below.

The case for change

We articulated our case for change in our response to Ofgem's FSNR Open Letter, and generally agree with Ofgem's strategic case for review set out in Section 2 of the Consultation. The need for a new approach to network regulation is driven by a combination of factors:

- **the changing macro-environment in which the network companies are operating**, including the urgent net zero ambitions, rapid scaling of demand for electricity, geo-political tensions, supply chain constraints and requirement for greater resilience from cyber, climate and demand shocks;
- **the changes taking place within our own industry**, with the creation of the FSO underway and the proposal for more strategic national and regional network planning; and
- **the challenges that aspects of the current RIIO framework pose** when the impact of those macro- and industry-changes flow through to the business plans of the network companies.

These macro- and industry-changes are together shaping the scale and pace of investment required of the network companies, the unprecedented level of capital they will need to attract and the different ways of working they will need to deploy – as seen in the volume and shape of work NGET and NGED expect to deliver in the coming decades, described above.

We see this translating into three main challenges that network companies will need to own and manage, and which the regulatory framework and Ofgem's approach should support them to overcome:

1. **Speed of delivery:** Enabling investment and progress at the required pace, including identifying need and delivery responsibility (competition) early and managing system access. At the same time, we need to grow our own capabilities and capacity to support the pace of delivery;
2. **Supply chain:** Managing the increasingly competitive and constrained global supply chain to ensure the necessary resources and skills can be secured in the timeframes required;
3. **Investment:** Attracting the investment needed to fund the unprecedented scale of network development in the time available.

The requirement for us to deliver at speed and gain early certainty on need and delivery responsibility in order to allow progress at pace is described below. Further information on the supply chain challenge is set out in Appendix 2 and further information on the need to attract investment is set out below and in our response to Question 10 in Appendix 1.

While the current RIIO model has undoubtedly been a success, delivering significant levels of efficient network investment and benefits for consumers since it was first put in place, it was designed before the current Government energy policy objectives were agreed, and as such without sight of the scale or pace of investment required for the energy transition, or the challenging macro-environment in which the networks are operating. We recognise the current RIIO framework has mechanisms to allow for uncertainty which have the potential to support some aspects of anticipatory investment, but we believe adjustments would be required to support the type and scale needed to maximise networks' ability to support the Government's renewable and low carbon deployment targets, a strategic priority noted in their proposed Strategy and Policy Statement for Energy Policy⁷.

As Ofgem's Consultation recognises:

- the benefits of using "one shot" fixed periods may be declining as the pace of network change could mean companies are unable to have stability during a fixed period and may need more dynamic approaches;
- RIIO-2 price controls are time-consuming exercises that produce complex settlements and further increases in complexity to adapt RIIO to the challenges of the energy transition may not be practicable – it could incentivise the wrong behaviour, create unwelcome, unforeseen and unintended consequences, and each new output incentive may require a corresponding ex-post monitoring mechanism which would drive further in-period cost for the regulator and network company;
- the transformation requires network companies and their leaders to focus on the big tasks at hand that will deliver consumer benefits and further regulatory complexity could detract from this;
- there is a need to move towards a system built around anticipatory investment.

Though the Consultation poses the question of whether these factors merit large-scale change in the price control frameworks, methods, and processes, or if evolutionary change can be relied on, we think such a distinction is unnecessary. Instead, our thinking on the future price control framework has focused on one overarching question: *"what framework facilitates us to make the investments we need to, and manage the risks that come with this, so consumers benefit from the net zero transition?"*.

What investments are needed to get to 2035

Transmission

Achieving a decarbonised energy system by 2035 is the first major system-wide net zero target. The scale of network investment needed, and the need to make investments in a way which manages future uncertainties requires a new way of working and planning our investment.

We are focusing on what we need to do facilitate the Government objectives and unlock the associated consumer benefits. This is being informed through a programme of stakeholder engagement. We propose to adopt a holistic site and region-based approach to maintaining and upgrading our network, which takes into account both current and future needs. In pursuit of this, NGET has, so far, carried out two main pieces of work to establish the volume and scale of likely work needed by 2035. This is informing the investments we need to make and actions we need to take during the next ET price control. The two pieces of work also reflect the requirements of the (2030-focused) Holistic Network Design (HND) and the 17 ASTI projects:

1. **Top-down analysis** looking back from 2035 and 2050. We are exploring a range of potential decarbonisation scenarios to identify network investments with suitable optionality/flexibility to meet the needs of those different scenarios;
2. **Bottom-up plans** which reflect the top-down analysis and bring together our network and site drivers and ongoing regional stakeholder engagement to drive the programmes of work needed across different drivers (e.g. customer connections, SF6 replacement, asset health, and strategic investments).

We are then bringing these approaches together in a series of 'Future Network Blueprints' which set out regional programmes of work which will inform what we deliver in the next price control period. Availability of

⁷ [Strategy and Policy Statement for Energy Policy in Great Britain](#)

system access, land adjacent to our substation sites and supply chain will contribute to determining the appropriate regional network and substation site strategies through to 2035 and beyond.

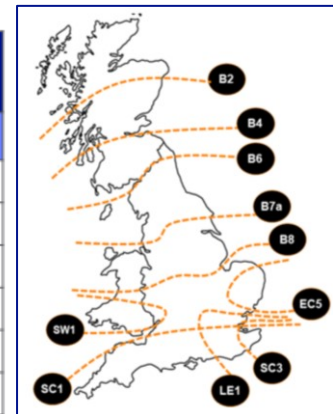
This approach is designed with the interests of consumers and the communities that host our infrastructure at its centre, by ensuring each time we get access to the system we carry out the right work to ensure we deliver a future-ready network, avoiding repeated system access costs, and minimising disruption to local communities. We believe this is consistent with the Government's position in their consultation on the Strategy and Policy Statement for Energy Policy in Great Britain: *"In undertaking its statutory duty to protect consumers, Ofgem should consider the cost to consumers of delays to infrastructure delivery and the impact of disruption by multiple increases in network capacity over time as opposed to a single significant strategic upgrade."*⁸

The 2035- and 2050-back analysis shows that significant investment over and above HND is required to enable power system decarbonisation by 2035. NGET's analysis shows the need for additional new capacity out to 2035, beyond what we need to deliver for 2030, where we are already building over 5 times more onshore transmission than we have built in the last 30 years and around 4 times more new marine cables than our current offshore network by 2030⁹.

Alongside the new network required, there is also a need for significant volumes of upgrading to increase the capacity of NGET's existing network. Early indications from the Future Network Blueprints indicate that c.30% of our existing transmission circuit asset base will require intervention (upgrade or replacement) by 2035 alongside over 60 substation sites identified by NGET and distribution network colleagues across England and Wales for potential upgrade, extension or rebuild in the same period. Some of this is already captured by industry processes such as HND, NOA and the connection application process, which we will be taking into account through the Future Network Blueprints to align and coordinate all our investment plans. This may address gaps, overlaps and timing challenges by considering drivers holistically. This level of work represents drastically more work than RIIO-T1 & T2 combined had for strategic/incremental wider works.

The analysis for 2035 and 2050 will be further refined as the 'transitional Central Strategic Network Plan 2' (tCSNP2) and HND follow-up-exercise (HND FUE) completes. However, the specific work that will be required in practice heavily depends on the energy scenario and assumptions that materialise. Different locations and volumes of wind, solar and hydrogen, for example, will all drive different power flows and investment decisions. There are currently very different scenarios being presented by Climate Change Committee (CCC) and the ESO's 'Leading the way' (LTW) Future Energy Scenario (FES) as shown in the boundary requirements below¹⁰:

Boundary	Current Capability	Boundary Capability Requirement Increase per Scenario - GW		Range of growth - %	
		FES LTW	CCC	Low	High
B6	6.3	28.0	8.0	127%	444%
B7a	9.7	28.0	8.5	88%	289%
B8	11.1	30.0	10.0	90%	270%
EC5	3.4	13.5	17.5	397%	515%
LE1	9.7	15.5	4.5	46%	160%
SC1	3.2	10.0	12.0	313%	375%



Even still, when we look across a range of scenarios we can see common areas of our network where investments would provide significant optionality because they are necessary across a range of scenarios.

If we wait until such time as government policy and/or markets have driven sufficient clarity on the scenario to use, it will be too late to deliver the outcomes in the time available, given the lead times to build new infrastructure. Therefore, we have to plan our work using multiple scenarios to ensure we make good

⁸ Strategy and Policy Statement for Energy Policy in Great Britain

⁹ National Grid analysis based on an assessment of likely transmission asset installation required to deliver the projects in England and Wales identified in the Holistic Network Design under the Accelerated Strategic Transmission Investment (ASTI) framework

¹⁰ Numbers presented show the range in network capability requirements from ETYS 2022 (as available in May 2023) assessment of the 2022 Future Energy Scenarios Leading The Way scenario and the Climate Change Committee 2023 Central scenario.

investment decisions that provide optionality and flexibility, minimise costs to the consumer, and understand the impact of changes to our plans. We will continue to update our scenario analysis to include outputs from tCSNP and HND FUE.

Despite the uncertainty around future scenarios, we need to start work now to plan investments – looking across scenarios to identify areas of commonalities and network requirements – and engaging the supply chain for strategic work to meet these requirements that will be largely delivered after 2026, to avoid delays down the line. Therefore, **a way to get confidence in Ofgem’s acceptance of the need for this work at an early stage is required**. In some instances, NGET will seek this by early 2024 in order to remain on track.

With this volume and scale of work in condensed timescales, system access will be a major consideration which we will need to manage. It influences work sequencing and approach. We will need to change our working practices, including exploring the viability of increased offline build (with cost, complexity, environmental considerations), network design and potentially require change to relevant industry codes and standards to ensure we can deliver the work required while maintaining security of supply. System access brings costs and risk, which supports the case for maintaining focus on maximising the availability of the system through the continued use of a SO-TO incentive. We take accountability for managing these issues but will need flexibility as we manage these constraints. As such, we think **the new price control framework should be agile** and afford network operators the space to respond to events as they happen.

This volume of work – and the timeframes in which it needs to be delivered – means we need be able to focus our efforts and resources on delivery, including investing on an anticipatory basis, ahead of need, where appropriate. It is important that the **future regulatory framework supports delivery of this anticipatory investment**. The future framework must facilitate the pace and urgency required, take a **pragmatic and proportionate approach** and focus both the regulator’s and network companies’ efforts on keeping on track the investments that will deliver maximum value (financial and otherwise) for consumers.

Distribution

As noted above, we are only just starting to work under RIIO-ED2. We expect ED2 to deliver meaningful progress towards a decarbonised energy system, unlocking significant consumer benefits and supporting consumers in their own decarbonisation journey, as well as the government’s net zero ambitions. NGED’s submitted business plan expenditure reflected the need to deliver a network which meets the future energy requirements of consumers, at the same time as ensuring we continue to deliver industry-leading service to customers at an efficient cost, while protecting our most vulnerable customers and tackling fuel poverty.

NGED’s business plan was based on our ‘Best View’ scenario, planning a consumer-focused network that could accommodate 1.5m electric vehicles (EVs) and 600,000 heat pumps (HPs). However, in determining final allowances, Ofgem based its allocations on NG ESO’s System Transformation scenario, which anticipates only 790,000 EVs and 170,000 HPs over the five-year ED2 period.

New uncertainty mechanisms have been incorporated into the ED2 framework to allow DNOs to seek additional funding to fill the gap within the price control. The effectiveness of these extensive uncertainty mechanisms is yet to be fully tested. It will be critical to keeping the energy transition on track that application of the UMs does not impede the timely delivery of infrastructure when the need is identified. Many of the more mechanistic elements are guided by thresholds and metrics, with the calibration of these being unknown. Other non-mechanistic elements require iterative assessment by the regulator through as yet untested processes. Together, industry and Ofgem need to **capture the practical lessons** from how the ED2 arrangements work in reality to **feed into the future design of the regulatory framework**.

NGED is embedding a number of key processes into its operations to help identify where investment is needed, including:

- annual refresh of NGED’s Distribution Future Energy Scenarios (DFES), based on an industry standard scenario framework;
- annual publication of capacity headroom data;
- ramping up of low voltage network monitoring with wider visibility achieved through smart metering;
- annual reporting of primary and secondary network utilisation on a site-by-site basis through regulatory reporting packs;
- mechanistic volume drivers for some load related expenditure (LRE) categories driven by annually reported data;
- biennial publication of a 10 year Network Development Plan (NDP) (SLC25b); and

- alignment of the biennial NDP to the biennial Load Related Reopener.

Beyond ED2, the need for ongoing investment in the distribution networks will continue to ramp-up, as the demand for electricity increases and the consumer demand to connect EVs, HPs, solar and other low carbon technologies gains traction. The future framework will need to **facilitate this investment in an agile way** to ensure network investment does not become a blocker to delivering for consumers and achieving the Government's net zero ambitions.

SECTION 2. DESIGNING THE RIGHT REGULATORY FRAMEWORK

What networks need to be able to do to deliver for consumers

As identified above, we believe there are three key challenges the regulatory framework needs to help networks overcome in order to unlock the full benefits of the energy transition for consumers: (i) enabling the requisite **speed of delivery**; (ii) managing **supply chain** constraints; and (iii) attracting the **investment** needed to fund the unprecedented scale of network development in the time available.

To navigate these challenges, networks need to work in a different way to how they have before. The table below summarises what we need to be able to do to manage and overcome the challenges we are facing:

Challenge	What we need to be able to do	Rationale
Speed of delivery: enabling investment and progress at the required pace, including identifying need and delivery responsibility (i.e. the role of competition on specific projects) early and managing system access. At the same time we need to grow our own capabilities and capacity to support the pace of delivery	<ul style="list-style-type: none"> • Quickly confirm needs cases and clarify delivery responsibility when that need is identified, and in some cases in anticipation of firm demand, to ensure the relevant projects (in some cases, in a programmatic way – see further below) can progress with pace. For some projects, NGET needs to work with Ofgem to get confidence in the acceptance of need by early 2024 to remain on track. • Develop design principles to help guide how we plan for new and system upgrade work that reflect future and current needs, e.g. to meet desired level of climate resilience, demand growth, etc., to future-proof work, take a holistic view of investments across multiple drivers, avoid repeated / inefficient need for system access & disruption to host communities • Be incentivised to deliver in a timely & innovative manner and pursue efficiency opportunities (but not descope or underspend), to maintain focus on finding innovative solutions to confront the scale of change required, and timely & efficient delivery of net zero targets • Act with agility and pace, to adapt to changing circumstances, as macro-events, policy decisions, new 	<ul style="list-style-type: none"> • This early certainty ensures network companies are clear on the outputs they are accountable for delivering, meaning they can start to progress the work (in some cases in a programmatic way – see further below) more quickly, refining the detailed designs, engaging with the supply chain and coordinating the necessary system access. The early clarity over what the network company is being asked to deliver also provides certainty and stability for investors. We already make investments at risk as part of our normal operations – but the scale of what is needed and time frame over which we need to make such decisions due to supply chain constraints (see further below) is different to what we do today and to what is reflected in the risk/reward balance of the RII0-2 price controls • This will ensure outputs are designed with the future in mind, which not only ensures their ongoing effectiveness and resilience during the life of the asset, which reduces replacement costs, but also avoids the repeated need and cost of system access and minimises recurrent disruption to local communities hosting the infrastructure • While the need to ensure network companies are delivering efficiently in the interests of consumers remains a given, network companies will also need to be encouraged and incentivised to test and deploy innovative methods and technologies to ensure the energy transition is advanced in the optimum way, and rewarded where appropriate • The pathway to net zero remains uncertain. The network companies will need to be able to change plans, where appropriate, to reflect

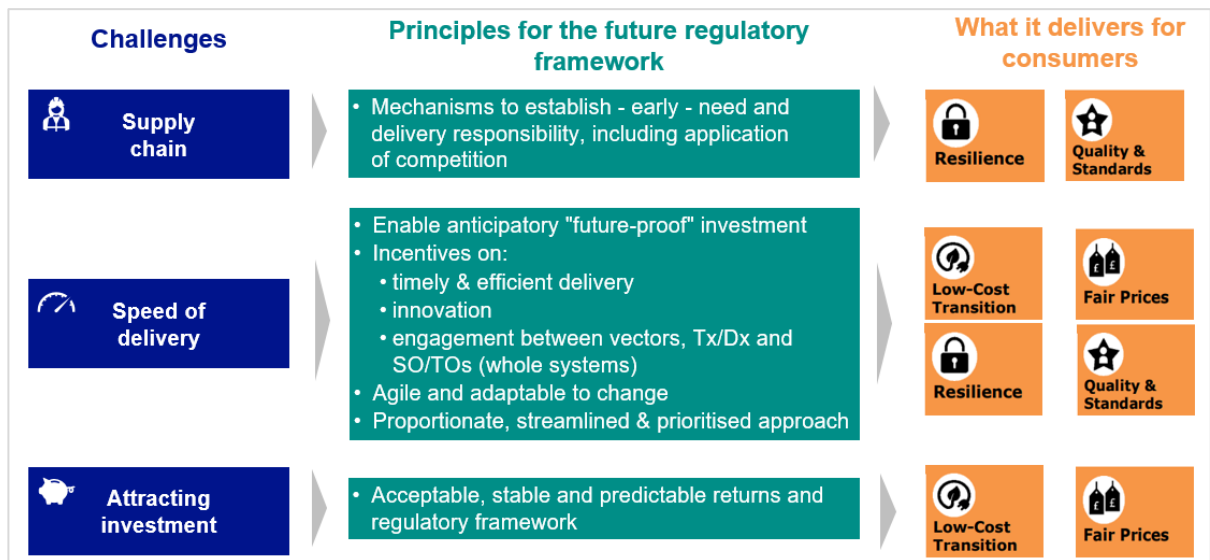
Challenge	What we need to be able to do	Rationale
	technologies etc. influence the demands on the network companies, and to manage the uncertainty associated with the pathway to achieving net zero ambitions	changing expectations and requirements on the system and seek to ensure the most expedient and efficient path to net zero
Supply chain: securing resources & skills in the timeframes required in an increasingly competitive and constrained global supply chain, and managing the resulting shift of risk to the buyer, as suppliers move away from fixed prices	<ul style="list-style-type: none"> Respond to the changing supply chain environment, given our continued accountability for delivery, and explore – working in tandem with the regulatory framework – new approaches to manage risks, including early engagement with the supply chain where necessary to secure capacity. Adopt programmatic approaches to delivery to support supply chain certainty and coordinate work around system access, as seen with ASTI, and for low-cost high-volume ED projects, such as unlooping service cables between properties. IT and digital investment has also moved away from a project-specific approach to a more agile one, where software is under continuous programmatic development and improvement to ensure upgrades are efficient and stay on track to deliver the desired output 	<ul style="list-style-type: none"> Early confirmation of need means we can engage earlier with the supply chain to enable us to secure the necessary supply chain capacity and resources to avoid delays down the line In the highly competitive and challenged supply chain environment, a programmatic approach provides a route to securing supply chain engagement across a larger volume of work at an earlier point in the project lifecycle, providing more opportunities for efficiencies to be captured, for example, from the supply chain identifying savings during the design phase, or price discounts from bulk orders
Investment: attracting the capital needed to fund the unprecedented scale of network development in the time available & in light of the changing risk environment	<ul style="list-style-type: none"> Attract investment at the scale and pace required to unlock the future consumer benefits with returns that are acceptable for the risks involved in investing in the energy transition Navigate market conditions that are no longer stable, with reversal of macro-economic trends that that have seen interest rates reduce over the last decade or more Receive sufficient cash flow to ensure licensees are financeable 	<ul style="list-style-type: none"> The level of investment required is likely to warrant changes to cost of capital to ensure it is attractive. New Equity is likely to require premium returns due to the costs involved Net zero is being advanced across the world giving investors choice on where to invest and the UK framework will need to be competitive to ensure consumer benefits can be met Interest rates are returning to levels more akin to those last seen in the years leading up to RII0-T1/GD1 suggesting reductions in allowed returns in recent price controls may need to be reversed Financeability must be maintained comfortably at the licensee level across a broad range of credible outcomes and reviewed each time large investments are agreed to ensure interdependencies have not impacted another part of the licensee Appropriate levers are needed to ensure the speed of cash required (partly as a result of the high level of investment) ensures both intergenerational fairness and future financeability

What the framework needs to deliver

Taking account of the scale of investment required and the challenges facing the network companies in delivering the energy transition, we have developed a set of principles which we believe the new price control framework needs to meet in order to maximise benefits for consumers. The framework must be able to:

- establish need, support anticipatory investment and provide clarity on whether the work will be subject to competition at an early point;
- incentivise focus on timely and efficient delivery of relevant outcomes and innovative approaches and technologies;
- encourage and incentivise the right engagement between sectors, vectors, transmission and distribution, and system operators and network operators (TOs and DNOs) for whole-system outcomes and reduced constraint costs;
- adapt as uncertainties evolve and outstanding and new policy decisions are taken and implemented;
- apply a streamlined, proportionate approach, focussing and prioritising effort on areas of highest value (financial and otherwise) or importance for consumers and net zero targets; and
- attract the necessary capital (of an unprecedented scale) on acceptable terms.

These principles form the bridge between the challenges facing network companies to deliver the necessary investments in the next five to ten years and beyond, and the consumer benefits¹¹ that will be achieved if we are successful in overcoming these challenges and delivering:



What the right regulatory framework might look like

We believe the principles set out above could be met through one of two approaches to the regulatory framework:

1. a **'mix and match' based approach**, incorporating elements of all three archetypes; or
2. an **ex-post based approach**, applying a simpler, agile, cost pass-through approach across all investment with a fixed rate of return.

Elements of archetype 1 ('plan and deliver') could be used in either case, as a route to identifying need for strategic investments as well as for applying early competition to determine delivery responsibility, where appropriate (e.g. for system requirements that are new, physically separable, strategic, sufficiently certain and where it would be in consumer interests to compete). We believe competition needs to be part of the regulatory framework for the next price control: the scale of the investment challenge means the sector needs to attract new sources of capital. In particular, offshore grids could be well suited to competition, where projects may be easier to define and are physically separate. Our thoughts on establishing need and strategic planning are set out in more detail below.

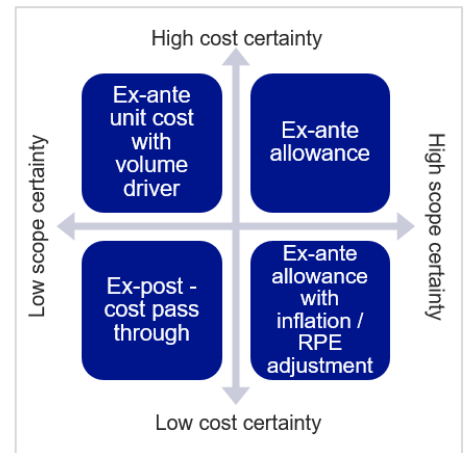
1. A mix and match based approach

This would take a similar approach to that suggested by Ofgem in the Consultation and apply the most appropriate regulatory model for each category of investment, reflecting its characteristics, in particular the level of scope and cost certainty for the investment in question. The approach used for any one investment may need to change during the life of the project to maximise consumer benefit, for example, as scope/cost

¹¹ Signposted against Ofgem's consumer interest framework

becomes more certain. Further work is required to consider how the mix of approaches will work in the round.

At its core, the route to determining which regulatory approach should apply to the investment in question is essentially one of determining whether there is both sufficient time available and certainty on scope and cost to enable an ex-ante allowance to be set up front – without imposing too much risk for either consumers or the network companies (and their investors). If there is not, then a cost pass-through / ex-post based approach which avoids an upfront regulatory process, or places risks with networks that they are not able to manage (resulting in cost of capital premiums) is in the best interests of consumers. In some instances, it may be that an ex-ante allowance with appropriate 'Real Price Effect' (RPE) adjustments would overcome any cost uncertainty, but in other cases, a cost pass-through may be more appropriate. The matrix opposite shows an example of the different options that might be selected depending on the level of cost and scope certainty:



For ET, the Consultation proposes that investment activities could be separated into three categories against which the mix and match approach could be applied:

- (i) Business as Usual / Replacement;
- (ii) Reinforcement; and
- (iii) New Build.

We have suggested some clarifications below to ensure the categories capture the work we think will be needed from NGET during future price controls. The categories also seem to be more capex focused and don't reflect closely-associated indirects (CAI) and business support costs (BSC), some of which are likely to be routine and broadly reflect historical run-rates (indexed accordingly), but others will be affected by the scaling up of activity associated with 'upgrade' (as per our definition below) and 'new build'. The following summaries reflect how we would interpret Ofgem's categorisation:

- (i) Business as Usual / Replacement – this would cover routine maintenance of existing assets, like-for-like replacement of assets, standard spend in areas such as IT and property, as well as customary business support costs;
- (ii) Reinforcement – we think this would be better defined as 'Upgrade' and would cover the upgrading and uprating of existing network and re-building sites in order to ensure they are fit for 2035 and beyond and meet relevant resilience requirements (cyber, climate, security), while also delivering associated connection requests, SF6 replacement, asset health, etc. on existing network. It would also cover IT upgrades; and
- (iii) New Build – this would cover the build of new network assets/infrastructure, including substations, overhead or underground lines. It would also cover development of, or investment in new IT systems.

In reality, there are likely to be circumstances where investments do not neatly fall into one of the above, e.g., the distinction between replacement and upgrade of an asset might not be clear-cut, and the scale of work required at a site could easily turn it into a re-build upgrade. Equally, when we consider the above categories against the different drivers of work the networks will need to deliver, it may be that the categorisations make sense, but that the appropriate regulatory treatment might differ.

Rather than assess each archetype against these categories, we think it would be more appropriate to separate out the component parts of the archetypes and then seek to answer each question for each category of work:

- who decides what is needed (e.g. Ofgem, network companies, FSO)?
- how should delivery responsibility be determined (e.g. is the work subject to early competition or exempt)?
- how should costs be controlled (e.g. competitive tendering, open book processes, tendering)?
- how should allowances be set (e.g. ex-ante, ex-post)?
- how should networks be incentivised to deliver the outputs of most value (financial and otherwise) to consumers?

The first two points are about identifying what is needed and who will deliver the solution; the second two are then about how the costs for the work the transmission operators are responsible for delivering are determined and funded, and the final point is around ensuring networks focus on the key outputs.

We still need to assess how this would work in practice and ensure the combination of approaches does not drive excessive complexity, nor impact our ability to take a holistic site strategy-based approach. While elements of each archetype will be relevant to the assessment, we do not think any of the archetypes could be implemented as they are described today and would need adjustments to be acceptable in practice.

We are also looking at the specific issue of determining the correct financing approach which properly reflects the risk/reward balance in such a model, as described further below and in our response to Question 10.

2. An ex-post, cost pass-through based approach

Given the potential complexity of a mix and match based approach, and the urgency with which network investment must now be delivered, there is a case for adopting a single regulatory model that is simple and agile. We believe a cost pass-through based approach across all investment, with a fixed rate of return, could be a suitable option. As noted above, this would not preclude elements of the 'plan and deliver' archetype being adopted as a route to identifying the need for certain projects and determining whether certain work is put out to early competition.

This simpler approach would mean network companies, together with other key stakeholders, could be confident and able to progress investment at the speed of delivery required, without having to navigate upfront regulatory processes that could slow progress and delay delivery of the associated consumer benefits.

We have experience of this type of regulatory approach with our US transmission networks, which are regulated by the US Federal Energy Regulatory Commission (FERC) using formula rates with a fixed return on equity. This approach offers benefits in attracting the necessary capital, focusing more on timely delivery (to connect new renewables and reduce constraints and overall consumer bills) than on short-term marginal network costs. It would also free up regulatory and network time to focus on the key issues at hand.

In order for this approach to succeed and meet its intended objectives, the **ex-post review** to assess whether the relevant outcomes had been achieved and whether the expenditure had been efficient would need to be:

- **Light touch** – to ensure the review did not simply shift an upfront complex regulatory process to one that came after the investment had taken place, and free both the network companies and the regulator from burdensome regulatory process to focus on delivery at pace;
- **Applied against predetermined objective tests** – to ensure the benefit of hindsight and additional information could not influence the review, and to provide network companies and their investors with comfort that their decisions were not going to be judged subjectively, nor against information that was not available to them at the time of making the decision;
- **Clear on the circumstances in which investment would be disallowed** – to ensure the potential parameters in which investment could be disallowed were known upfront and therefore the level of risk associated with any expenditure could be assessed with relative certainty (for both network companies and their investors) at the time the investment was taken. This could take a similar approach to the ESO's 'demonstrably inefficient and wasteful expenditure' test with an equivalent cap on the percentage of investment that could be disallowed.

It would also be important to retain the use of incentives within this model, including to ensure efficiency, timely delivery, and whole-system cooperation, and we are considering how such incentives might apply.

The following elements need to be factored into whichever regulatory approach is selected:

- ***Establishing need and delivery responsibility early / strategic planning***

For ET, establishing and confirming investment need at the point it arises (including if it is anticipatory, based on likely but not definitive requirements), or with sufficient time to ensure delivery, is a key element of progressing investment at pace and mitigating supply chain challenges. For ED, the focus is more on establishing volume need with adequate time to position themselves to deliver that volume, including with the supply chain.

We see benefits of strategic investment being coordinated in a centralised plan to ensure the relevant network investments are optimised for whole-system benefits, as is being proposed for electricity transmission in the shape of the Centralised Strategic Network Plan (CSNP) and for electricity distribution in the form of Regional System Plans (RSPs). The CSNP will also provide a route to early competition, where relevant and appropriate. We welcome and support the introduction of early network competition, where applied appropriately, and believe it can support real consumer benefits by driving innovation and downward pressure on costs, as well as bringing in new capital to the sector. We think it is important that system requirements that are competed are new, physically separable and strategic, and are put out for competition where it would be in consumer interests to do so.

The first transitional CSNP (tCSNP1) provides a good example of this approach being used in practice, where the offshore and onshore network plans were brought together to determine the necessary investments to meet the 2030 offshore wind targets:

- the ESO coordinated the HND to develop a view of the required offshore network requirements. This was brought together with proposed onshore reinforcement options from the transmission operators (largely based on the Network Options Assessment (NOA) process), into tCSNP1 which recommended the necessary investments;
- the investment 'need' was then confirmed by Ofgem based on the HND/tCSNP1 and the decision was taken to exempt the projects from competition given the potential delays this could cause to the 2030 ambition; and
- the ASTI framework was introduced to support accelerated delivery by the TOs within the required timeframe.

This early establishment of need is reflective of elements of Archetype 1 and we agree it should be a feature of the future regulatory framework.

However, we disagree with the breadth and depth of the granular 'plan and deliver' process and strategic planner role described by Ofgem in the Consultation, as described further below. We also note that while a centralised plan can help facilitate early competition, we do not believe that all system requirements included within a centralised plan would need to go out to competition, nor that they should. There will be circumstances where it would not be in the interests of consumers for system requirements to go out to competition but including them in a centralised plan still provides consumer benefits, for example by ensuring whole-system oversight. We saw this approach used for ASTI, where the projects were exempt from competition, but had still benefitted from being included in a holistic plan.

There are certain types of investment, such as asset replacement, which will not form part of a strategic plan and should remain with the network companies to identify and seek confirmation of need from Ofgem. These categories of work would be too detailed and/or frequent to include in a centralised plan and either the ESO/FSO would not have the relevant level of knowledge to identify those needs, or the act of incorporating them into a central plan would prevent the work being delivered in the necessary timeframes. It could also have unintended consequences for blurring the lines of accountability for the safety and security of the network (i.e. having network owners with obligations but with a different party determining on what was needed in the network to meet them). This links back to the Future Network Blueprints we are developing, which reflect asset management needs alongside other drivers to provide plans that are fully coordinated for system access, supply chain needs, etc. It is therefore in consumer interests for the network companies to retain control and coordination of the planning of such work, so that no requirements are missed and delivery of work is not delayed.

In cases where the need could (and should in future) be identified through a more strategic centralised plan, transitional arrangements will be required, as the implementation of the CSNP and RSPs is still some time off. Although Ofgem took an initial decision on the ETNPR in November 2022¹², confirming that the FSO will develop and deliver a CSNP, with the intention for the first CSNP in the 2024/2025 regulatory year, Ofgem still needs to consult on the detailed policy required to implement that decision, with the aim to conclude policy development this summer.

At the date of this response, no consultations on the detailed policy requirements for the CSNP have been launched and the 2024/2025 date could therefore come under pressure.

¹² [Ofgem's decision on the initial findings of the Electricity Transmission Network Planning Review](#)

Even if the 2024/2025 ambition was achieved, there are certain cases where NGET needs to work with Ofgem to get confidence in the acceptance of need and the applicability of competition by early 2024 in order to remain on track. As a consequence, the establishment of the FSO and development of a CSNP will come too late to confirm the 'need' in those cases. A transitional arrangement will therefore need to be put in place. We will work with Ofgem to determine how we get confidence in the acceptance of need, but given the scale of investment, we think this could take the form of:

1. Develop design principles, which will also facilitate anticipatory investment, including appropriate guardrails and CBA approach which strikes the right balance of pragmatism and optimising for intergenerational consumers
2. Use of both tCSNP and our 2035 and 2050 scenario analysis and Future Network Blueprint work as the basis to accept needs case investments at a portfolio or programme level, enabling greater supply chain certainty and efficiency
3. Alongside this, and recognising the inherent uncertainty and fluidity around customer connections and challenging system access requirements, the ability to have flexible mechanisms to manage connections and asset health work in both a reactive and proactive way

At the distribution level, Ofgem's consultation on the future of local energy institutions and governance¹³ set out the proposal for the FSO to create RSPs. That consultation closed on 10 May and Ofgem will need to consider responses before determining on what basis to proceed and the need for any further consultations on the detailed policy decisions before RSPs can be implemented.

Given the detailed policy of the CSNP and RSPs will be determined through separate consultations and outside of this FSNR Consultation process, we are concerned with the detailed and granular planning role described for the FSO within the Consultation, which is inconsistent with the recent descriptions of both the CSNP and the RSPs published by Ofgem:

For example, in the initial decision on the ETNPR from November 2022, Ofgem said (our emphasis):

"Roles and responsibilities in CSNP"

We do not intend that the FSO develop a CSNP in isolation from other stakeholders. Development of a CSNP is intended to be a highly collaborative and transparent process, but led by one central body which can take a strategic GB-wide view to lead network development. Given that the assets and the network that is being developed are owned by network owners, we expect TOs to be a key contributor to the CSNP process and, subject to further consultation, TOs could lead aspects of developing a CSNP. We expect competition as a delivery model will be considered within CSNP, either as a result of the FSO procuring services or through the competitive appointment of transmission owners.

...We agree with the suggestion by one respondent that the CSNP should take input from a range of stakeholders such as electricity distribution network operators, gas network operators, generators, and equipment suppliers, with the latter to identify challenges with supply chain and overall delivery. CSNP is proposed to promote whole system thinking and efficient development of the energy system, with a requirement for extensive input from stakeholders from across industry, communities and government."

In a similar vein, the description of the RSPs set out in Ofgem's consultation on future of local energy institutions and governance described the FSO's potential role as Regional System Planner as one where RSPs:

"undertake strategic planning activities" and "network companies would remain responsible for network planning activities...The existing actors plan for their own assets and within their own competencies. We are proposing that the RSPs focus on their coordination and coherence; ensuring common starting points, facilitating dialogue and creating an independent strategic summary (the regional whole system strategic plan)" (our emphasis).

Both the CSNP and RSP descriptions extracted above are very different to those in the FSNR Consultation, which talks about whole-system planning placing the:

¹³ Consultation: Future of local energy institutions and governance

“ultimate responsibility for upgrades and new project needs with the strategic planners rather than the licensees” and “involves granular planning”, with “national and regional strategic plans which are turned into clear and detailed descriptions of network needs...[requiring] government and developed administrations, independent system planners and Ofgem to work collectively, with some data, expertise and information provided by the network companies” (our emphasis).

Consumer benefits of whole-system planning would likely be maximised where the FSO’s role (for the CSNP and RSP) was one of convener, identifying the ‘problem’ or ‘need’ and setting the parameters within which the network companies develop the solutions and detailed plans. The FSO should not – and cannot – develop the detailed plans. Not only would it take significant time for the FSO to develop the capabilities to design detailed plans – time that is not available to deliver the benefits that come from a centralised plan and to keep net zero ambitions on track – but from the perspective of ensuring system safety, reliability and meeting associated licence obligations, the network companies must retain responsibility and accountability for detailed design and development of the networks for which they are accountable.

We will continue to engage on this subject through the future CSNP and RSP consultations, as and when they are released, as well as through the ‘strategic planning’ workstream, being run in parallel to this Consultation.

- ***Incentivising the right behaviours***

The use of incentive-based regulation under the RIIO framework has delivered undeniable benefits to consumers since its implementation. Therefore, we think it is important that incentives remain a key part of the future framework, to ensure networks are focused on delivering the outputs that drive the most benefit for end-consumers, whether a mix and match or ex-post based approach is pursued.

While efficient delivery will always be relevant to ensure consumers are not paying more than they need to for the outputs that are delivered, the urgency of net zero is bringing a different dimension to the regulatory framework, with greater emphasis on timely delivery of outputs and innovative solutions. Delays to net zero ambitions risk driving significant disbenefits for consumers, for example, increased constraint costs, higher wholesale costs (as a result of greater reliance on fossil fuel generation, with more volatile costs and associated carbon costs), and delays to consumers’ own energy transitions, for example by limiting their ability to charge their EVs and adopt low carbon technologies. We therefore think output delivery incentives (ODIs) on timely delivery will be of more importance than totex incentive mechanisms (TIM), and there may be circumstances where it is in consumers’ interests for networks to spend *more* money in order to deliver the output, and resulting benefits, more quickly.

Alongside use of ODIs, retention of the SO/TO incentive will be an important part of the future framework, to ensure TOs and the ESO/FSO work closely together to find ways of reducing constraint costs for consumers. An incentive that encourages and rewards whole-system thinking and solutions across vectors, between SO/TO and Tx/Dx will also be important to ensure networks support implementation of the whole-system solution that maximises benefits for consumers and broader society, even if it means they do not deliver the solution.

As part of our next steps, we plan to work on designing an appropriate set of incentives that could be incorporated into the future regulatory framework.

- ***Proportionality / reducing regulatory complexity***

We agree with Ofgem’s assessment that for the transformation ahead, we need network companies and their leaders to focus on the big tasks that will deliver consumer benefits and there is a risk that increasing regulatory complexity may detract from this.

The future framework must be simpler by design and ensure that regulatory effort, both from the network companies and Ofgem, as regulator, is spent on keeping on track the investments that will deliver maximum benefits for consumers. It is not in anyone’s interests, not least those of consumers, if regulatory scrutiny of minor or routine investments means progress of the more critical investments is delayed. The regulatory oversight must be proportionate to the value (financial and otherwise) of the outcome and consumer benefits will be maximised by focusing our and Ofgem’s time and effort on investments where it matters most, i.e. on a proportionate basis to the overall spend and consumer benefits of doing so.

We have experienced some recent examples where it does not appear to us that the process was proportionate to the potential benefits for consumers and where the outcome is suboptimal for consumers, such as NGET's Civil Related Works Reopener¹⁴:

- The process, from submission to decision in April 2023 took approximately 8 months. The funding sought was just under £50m on a UIOLI basis, representing less than 1% of NGET's total spend during T2.
- Ofgem awarded less than half of that amount (£24.3m). Any funding associated with 'Plant Status' civil assets that had an asset condition score (based on NGET's internal database) below 80 was disallowed, meaning only those assets that are very severe in condition will be funded¹⁵. This will lead to a just in time approach, removing opportunities for proactive management ahead of the transformational upgrade of the grid needed in the coming years.
- In addition, where assets with a condition score of 60 and below are located on the same site as 80 assets, NGET has lost any opportunity for efficiencies in using the same contractors whilst on site, leading to increased costs to consumers during the next price control.
- Ultimately the Network Owner, who has the condition, real time site feedback, and connection context is best placed to make these asset management decisions (it is very resource intensive for the regulator to manage and analyse this level of detail). Whilst we understand that Ofgem must protect the consumer from inefficient cost, the civils funding was sought under a 'use-it-or-lose-it' allowance, which funds asset replacement at actual cost and returns any unused allowances.

A further example where the level of scrutiny and resources applied does not seem to reflect the scale of the issue is the differences between the level and scale of price control deliverables (PCDs) in T2. For example, overhead line replacement, which covers c.£350m (approx. 3% of NGET's final T2 price control spend) and has a single PCD covering it at a reasonably simple level. In contrast, 'Protection and Control' (P&C) covers £369m but has 22 groups within it, so in reality it equates to 22 PCDs. While there is cost variability and different assets in P&C, the scrutiny of 22 PCDs is very different to that under a single PCD for overhead line replacement, but the total value for consumers is largely the same.

RIIO2 contains a number of different reopener mechanisms which, based on experience in T2, is another potential cause of complexity. For example, to date, Ofgem and NGET have spent 18 months discussing a reopener for SF6 Circuit Breakers much of which has focused on which to use mechanism and how it should be applied. At the ED level there are more than 30 uncertainty mechanisms (UMs), alongside larger re-openers. The volume of work delivered at a distribution level is materially different to that at the transmission level and the administrative requirements on both the regulator and the DNOs in implementing these UMs could therefore become a disproportionate. Between industry and Ofgem we will need to monitor how in practice the processes unfold to consider the overall proportionality compared to the consumer impacts.

We agree with Ofgem that digitalisation will have a role to play in simplifying the regulatory approach, but the near-term simplification opportunities may be limited, and the framework must therefore be made simpler by design. While data and automation may help deliver 'smarter' regulation in time, they are not the route to delivering a less complex regulatory framework.

• ***Investability and financeability***

As noted above, we believe the principles required from the future regulatory framework could be met through a 'mix and match' based approach incorporating elements of all three archetypes, or an ex-post based approach. Either approach will require changes to the existing financial framework.

Careful consideration is needed to assess the balance of risk and return under a new regulatory framework over the near and longer term, ensuring risk assessments are thorough and the framework includes appropriate mitigations against unreasonable risk for any one party. This will include considering:

- the likely increase in regulatory risk due to a change in regulatory framework;
- the risk impact of the wider use of strategic planning, anticipatory investment and early competition, which may result in less accurate forecasting of long-term capital, counterparty risk and interface risk; and

¹⁴ [Decision on NGET's Civil Related Works Re-opener | Ofgem](#)

¹⁵ Funding has been allowed for assets below 80 where a whole site civils survey has been conducted, although the assessment scoring and condition of assets are the same. We have a rolling programme in place of such surveys, prioritised on the most urgent sites to review. Alongside this, we monitor and record Plant Status on an ongoing basis to identify where interventions are required.

- the asymmetric risk attached to ex-post frameworks due to the potential for cost disallowance, including the impact on investors not recovering the cost of capital.

Mitigations to reduce risk levels should be explored and our response to Question 10 includes proposals.

Given the urgency with which network investment is now required to support delivery of ambitious net zero targets, we anticipate that an increasing volume of strategic investments will be progressed outside of a traditional periodic review process, as was the case for ASTI. The financeability assessment needs to be carefully considered in such a case and it will be critical that:

- financeability can be maintained comfortably at the licensee level across a broad range of credible outcomes and attracts both debt and equity investors. Financeability would need to be reviewed each time large investments are agreed to ensure interdependencies have not impacted another part of the licensee; and
- appropriate levers are applied to ensure the speed of cash required (partly as a result of the high level of investment) ensures both intergenerational fairness and future financeability.

The framework design will also need to reflect:

- the impact of the unstable market conditions, with substantial reversal of macro trends suggesting the reductions of allowed returns in recent price controls will also need to be reversed;
- the need to ensure levels of returns attract the necessary investment at the scale and pace required to unlock the future consumer benefits, and that the returns reflect the risk profile of the network companies' respective investments;
- the overall consumer bill impact and wider societal benefits of the energy transition, including significant reductions in constraint costs and connecting increased volumes of lower cost renewable energy to the system and
- the increased risk profile associated with projects and workload of a different size and scale than that seen in recent price controls, utilising new delivery models and technologies and being delivered in a more challenging macro-environment with significant supply chain intensity.

Further detail is included in our response to Question 10, set out in Appendix 1.

Assessing the right regulatory framework – Ofgem's consumer interest framework

We are broadly comfortable with Ofgem's framing of the analytical approach around its consumer interest framework (CIF) and agree it will be important to ensure the future framework delivers for consumers. We found the more detailed CIF set out on page 8 of Ofgem's Future Work Programme¹⁶ more helpful than the abbreviated version shown in Figure 7 of the Consultation to capture the range of consumer benefits that the framework (and the investment it supports will have). We have set out some further thoughts on the specific pillars of the CIF in our response to Question 11, in Appendix 1.

Alongside the CIF, we think it is critical that the future framework approaches are also explicitly assessed against:

1. the objectives of other key stakeholders (including investors, the supply chain and network customers), without whose input and engagement the energy transition and associated consumer benefits will not be delivered;
2. broader benefits of the network investment, including societal and environmental impacts; and
3. a steady baseline counterfactual – this should be RII0-2 as it is today, not "assuming incremental change".

Annex 5 of NGED's response to the ED2 draft determinations included a lot of detail on the importance of taking a broad approach to measuring consumer value, and we refer Ofgem to section 5.9 of that document, in particular¹⁷.

We are also keen to understand how Ofgem proposes to prioritise the trade-offs and competing objectives, which Ofgem acknowledges within the Consultation will arise.

We look forward to engaging on this further as part of the working groups being run in parallel to this Consultation, to ensure we understand how the framework will be used and applied, and ensure there can be no risk of ambiguity in its application.

¹⁶ Ofgem's Forward Work Programme

¹⁷ <https://www.ofgem.gov.uk/publications/riio-ed2-draft-determinations> - see Annex 5 within the WPD folder of 'Response documents'

SECTION 3. PROCESS AND NEXT STEPS

Process

With the next ET price control starting on 1 April 2026, it is important that Ofgem provide clarity on the process and programme the ET network companies will be expected to follow between now and implementation of the next price control, to ensure they can provide well-developed and timely plans and submissions.

Given the time available, we are already developing what we expect would become a business plan submission for the next price control. Our approach is based on what we believe will deliver the best outcomes for consumers and matches the overall context of delivering network investments at an unprecedented scale ahead of need.

In the absence of clarity on the process at this point in time, we have made some assumptions to which we are working to prepare for the next price control – and a number of specific areas where we will need input from Ofgem. A selection of these are set out below – these should be considered alongside the ENA RIIO2 lessons learnt document that has previously been provided to Ofgem:

- We are assuming that we will submit a draft business plan in July 2024, followed by a final submission in December 2024, and that there will be no requirement for a second draft submission in October 2024 (a second draft was required by Ofgem in the RIIO-T2 process).
- To ensure the production of submissions that allow Ofgem to fulfil their responsibilities, we will need clear, and in many cases, simpler business plan guidance earlier and subject to less change than in RIIO-T2 setting out Ofgem's expectations of our business plan submissions. In an ideal world that would be issued at the same time as Ofgem's framework decision in early autumn (for the July 2024 submission) and as soon as possible after the draft submission (for the final business plan submission).
- Alongside any clear guidance, it would be appropriate if the sector specific consultation and decision process concluded significantly in advance of any draft submission (currently assumed to be July 2024).
- However, as mentioned earlier in our response, we are hoping to work with Ofgem to gain early confidence in the acceptance of need for a number of our significant investments to ensure they can remain on track to be delivered during the next price control. This is well in advance of what would be achieved through a 'normal' price control process (i.e. at Final Proposals stage) but is critical to ensure supply chain confidence and greater opportunity for innovation (among other things) – we would like this process to conclude in early 2024.
- We are also keen to ensure that stakeholder engagement and input is a significant component of our business plans and the price control in general. Whilst we have continued with our Independent User Group (IUG) throughout the RIIO2 period, it would be beneficial to understand how Ofgem see the IUG's role in the forthcoming process as well as that of any Challenge Group that Ofgem may establish (as was the case in RIIO-T2) to ensure that we maximise their input and can properly take account of their requirements.

While we acknowledge the detailed process will depend on the regulatory framework decision in early Autumn, it will be important to receive **further clarity on the process as soon as possible** to enable us to ensure our preparations, including our stakeholder engagement plans to feed into the development of our plan are consistent with Ofgem's requirements.

Next steps

It is important that the design of the future price control framework is properly thought through and translates from regulatory theory into practical application. The framework must not only manage the challenges facing network companies today, but also provide an enduring and predictable solution that allows ongoing certainty for all stakeholders and does not need to be re-opened in the near future. This will take time and needs to be done in conjunction with Ofgem, but also with the input of key stakeholders to ensure the regulatory framework meets their respective needs.

Alongside developing our thinking on the regulatory models we have outlined above, we are pulling together our first cut of a workplan that will be iterated and refined to ultimately become the ET business plan we submit to Ofgem. We intend to discuss elements of this workplan with the Ofgem engineering team early in the process, which will build on the recent 'whiteboarding' session we had with them.

The workplan is a fundamental input to help with the design of the regulatory framework. We believe it is important to test that the framework work effectively in practice and supports delivery of the investment we will need to delivery to secure the intended consumer outcomes.

We plan to undertake the following next steps, with indicative timeframes, to progress the design of the regulatory model for the next ET price control:

By July:

- **Define the work plan:** More clearly define the investments that will be required during the next price control.

During July:

- **Assess the appropriate regulatory approach for each category of investment in a mix & match approach:** Against each category of investment, determine our view of:
 - who decides what is needed (e.g. Ofgem, network companies, FSO);
 - how delivery responsibility is determined (e.g. is the work subject to early competition or exempt);
 - how costs are controlled (e.g. competitive tendering, open book processes, tendering);
 - how allowances are set (e.g. ex-ante, ex-post); and
 - how networks should be incentivised to deliver the outputs of most value (financial and otherwise) to consumers – and the possible design of such incentives.
- **Determine whether a mix & match based approach or full ex-post based approach is most appropriate:** Against the plan of work, assess the supply chain and other challenges facing NGET and identify how much of the plan we expect to be able to get sufficient scope and cost certainty to pursue an ex-ante / mix and match based approach, or if we think there is a case for taking an ex-post cost pass through approach across the full workplan.
- **Assess how feasible the above would be in practice:** Against the outcomes from the above assessment, determine how feasible it would be in practice to adopt that approach and what simplifications would be needed to make the mix & match based approach work, or if a fully cost-pass-through based approach is more appropriate.
- **Early need:** Identify the major strategic works for which NGET wishes to work with Ofgem to gain confidence in the acceptance of 'need' in early 2024 to remain on track for delivery during the next price control. Agree with Ofgem the information NGET will need to provide to support such a process;

Early August:

- **Assess the regulatory approaches against the consumer and key stakeholder objectives:** Determine the relevant regulatory models and complete the assessment framework set out above. This includes the impacts on financeability.

Ongoing:

- **Test our thinking with key stakeholders:** As our 'preferred' regulatory model starts to take shape, we will continue to test and iterate it with Ofgem and with key stakeholders, including consumers, investors, network customers and the supply chain.

Appendix 1 Q&A response

Our response to each of the specific questions raised in the Consultation is set out below. We have drafted these responses so they can be read standalone for readers who may need to focus on specific areas. Therefore, for those reviewing the entire response, there will be some repetition within these responses with information contained in the main response document.

1. What should the role of the ‘consumer voice’ be and through what institutions and processes should it be channelled?

Key Messages

- The role of the consumer is more important than ever and must be taken seriously by all parties
- Affordability is a key focus, but network investment must be considered from an overall consumer bill perspective
- It is important that a consistent set of methods and frameworks are agreed to ensure the consumer and stakeholder voices are reflected in plans and decisions
- We value the insights received from panels such as the IUG, CEG and consumer (deliberative) research and think similar processes should be used in the future framework
- The framework must also ensure it meets the need and priorities of other stakeholders who are key to achieving consumer value, including investors, network customers and the supply chain, as well as the communities that host our infrastructure

The role of the consumer voice to help shape and test our long-term business plans has never been more important given the role networks will play in supporting security of energy supplies and decarbonisation. It is critical that the needs and interests of consumers are properly reflected in our future plans and Ofgem’s determination as we deliver the energy transition. Of particular relevance are consumers’:

- a) future usage needs;
- b) usage and adoption of low carbon technologies during the transition;
- c) affordability red lines, both current and future consumers, taking account of intergenerational impacts;
- d) other red lines, such as community impact, as we upgrade and build-out the electricity network nationwide.

Reflecting on lessons learnt in RIIO-2, we recommend the following:

- **Affordability:** This should be measured as a consumer would view/experience it and should be considered in terms of ‘whole consumer bill’ (both now and in future) not just the respective segments of it. A nominal increase in electricity transmission or distribution network costs could be countered by a reduction in constraint costs, or an accelerated benefit to wholesale costs, etc. The consumer is impacted by the combination of all industry components in the final consumer electricity bill, and their views should be sought on this basis.
- **Consistency of how we bring the consumer voice into our plans:** There is limited evidence that the consumer or stakeholder inputs to past RIIO plans were fully considered in the final determinations – which was disappointing to the network companies and to the stakeholders involved, given the time and attention this had been given. On reflection there was little consistency on methods used across all participating parties, which may have contributed to their consideration in the final determinations. It is essential that going forward:
 - the role of consumer and stakeholder input is taken seriously by all parties and it is understood and agreed that stakeholder input will play a fundamental role in Ofgem’s framework principles and subsequent draft and final determination, as well as becoming an enduring part of network companies’ normal business practice; and
 - a consistent set of methods and frameworks are agreed between the network companies and Ofgem that will be used to pull the consumer and stakeholder voices into our planning decisions.

- **Use of panels such as IUG, CEG, Consumer (deliberative) research:** We have valued and benefitted from the input and challenge that these panels have provided in helping us to view our plans and decisions from different perspectives, and holding us to account on our commitments. The relationship has matured and evolved since RIIO-2 preparation, and our approach to planning has improved from having a representative 'outside-in' perspective to help shape what and how we deliver.

While the energy transition must of course meet the needs of our current and future consumers, we believe that the future regulatory framework should reflect the needs and priorities of all our key stakeholders to achieve downstream consumer value:

- consumer benefits and needs will not be delivered if we cannot meet the needs of the stakeholders who are also central to the transition, for example, network customers (e.g. delivering timely connections for generation and demand connecting to the system);
- investors (who need to receive an acceptable return to fund an unprecedented volume of investment); and
- the supply chain (who need certainty and clarity of need to scale up and meet our requirements in an increasingly challenging and competitive global market).

More broadly, it is important that networks understand the cross-sector needs and impacts in meeting our collective net zero targets and the needs of those who may be impacted by decisions on long-term site strategies and planning, including communities that host our infrastructure and the natural environment. These broader stakeholder needs are not covered in depth in the Consultation and we would welcome further engagement with Ofgem on how their interests are covered in the framework; for example the links between any community benefits regime which Government may establish and the regulatory allowance setting process.

A long-term fair, clean, affordable whole-system focused energy transition will only be possible if the appropriate stakeholders are involved from the outset. This will also need an understanding that different stakeholder trade-offs may need to be made in the interests of securing the strategic outcomes to deliver a clean, fair, affordable energy transition for all.

2. How detailed could an independent, cross vector view become to determine future plans for periods beyond RII0-2 and support effective use of the 'Plan and Deliver' model?

Key Messages

- We are supportive of independent strategic level cross-vector planning and believe the value lies in looking across sectors and regions, taking into account local, regional and national Government targets and objectives, and translating this into a high-level plan
- We think a strategic plan can help establish early need and, where appropriate, provide a route to early competition
- We do not believe there is value in a cross-vector plan getting into the details of network designs and operational issues – this would blur accountabilities with network operators
- We do not agree with the description of strategic plans set out in the Consultation, which also differs to those used in separate consultations on the CSNP and RSPs. This Consultation should not be used as a means of determining the scope of any future strategic network plans (i.e. the CSNP or RSPs), nor the division of roles/responsibilities.
- Given the expected timing of the establishment of the FSO and the outcome of the consultations on the CSNP (and RSPs), an interim and transitional arrangement will be required, in particular for the next ET price control
- A key limitation of the regional and national strategic plans (as described today) is that they would have no formal role in the planning and consenting framework and are therefore unable to overcome planning and consenting delays. We therefore believe there is a need to move towards the creation of a 'Strategic Spatial Energy Plan'

We have interpreted this question as being “How detailed **should** an independent, cross vector view become...” rather than “How detailed **could**...” it become. In theory, a plan *could* become as detailed as desired, but the challenge would then be whether that detailed plan was adding value, relevant, accurate, and timely.

We are supportive of independent strategic level cross-vector planning. We believe the value lies in looking across sectors and regions, taking into account local, regional and national Government targets and objectives, and translating this into a high-level plan. In our 'Delivering for 2035' paper¹⁸, we set out our thoughts on how centralised strategic planning could be expanded into a spatial plan which would also help reduce delays in the construction of approved infrastructure and create even further value (see below in this question). We do not believe there is value in a cross-vector plan getting into the details of network designs and operational issues, given it could blur the accountabilities with network operators for safely and securely maintaining their assets, and the expertise needed to plan at such a detailed level.

Given the scale and pace of investment required to deliver the energy transition and the need for whole system thinking to ensure consumer benefits are maximised by the investment the network companies deliver, we think Archetype 1 (Plan and Deliver) has attractive elements. A strategic plan can also support the requirement to establish need early and provide a basis on which to put certain projects out for early competition (i.e. system requirements which are new, physically separable, strategic and sufficiently certain) where it would be in consumer interests to do so. As we set out in the Delivering for 2035 paper, given the scale of the challenge ahead for the UK, we believe that we need to maintain pace in introducing a competitive model for major transmission network capacity¹⁹.

The proposal to create national and regional strategic plans aligns to Ofgem's decision to create a CSNP at the national level²⁰, which could work alongside inputs and plans from proposed RSPs at the local/regional level²¹. However, we do not agree with the description of the plans set out in this Consultation. In particular, we do not agree that the national and regional strategic plans should be “*detailed descriptions of network*

¹⁸ [Decarbonising the power system | National Grid Group](#)

¹⁹ As above

²⁰ As decided by Ofgem in its November 2022, [Decision on the initial findings of our Electricity Transmission Network Planning Review](#)

²¹ [Consultation: Future of local energy institutions and governance](#)

needs", nor that the network companies' inputs be limited to providing "some data, expertise and information". This is because:

- The CSNP will add value by helping steer the strategic shape of the network and considers cross-vector, whole system value and trade-offs. This then enables network companies, or other delivery parties, to develop more detailed solutions in that context with access to much more detailed information. For us as networks, this will include a greater understanding of asset condition and requirements, and customer connections. The CSNP cannot and should not include these as the process is not planned to be sufficiently agile to cater for high volume works like asset health and connections driven activities.
- Network companies that own and manage assets are accountable for the safe operation of those assets and for keeping people and the public safe. If detailed network needs and solutions are prescribed by FSO this will result in a blurring of accountabilities and responsibilities that could compromise safety.
- A detailed description of network needs may limit scope for innovation, depending on how 'need' is described, e.g., if the need is described as a new route from X to Y, rather than described as a network requirement for capability of capacity.
- Network owners and other parties primarily undertake network planning activities today and are accountable for project planning, delivery and asset management. Networks have expertise in this area that cannot effectively be replicated by parties that are not involved in project delivery e.g., developing likely delivery dates, costs and risk profiles.
- If there was an intention to try and duplicate capabilities in FSO this would require additional highly skilled resources that are already scarce. These resources are critical for projects to be delivered and therefore will always be retained in the network company.

The benefit of strategic plans are in the early establishment of need, having taken account of whole system cross-vector inputs, which the network companies would then feed into with detailed network planning inputs. This would support delivery of projects at pace, unlocking benefits for consumers more quickly. The 'strategic planner' role would therefore be one of articulating the assumptions and forecasts on which the need is established, convening the relevant inputs and, where appropriate, managing a competitive process; it should not be tasked with producing detailed network plans to meet those needs.

We note that the descriptions in the Consultation are very different to those used to describe the CSNP and RSP in their respective consultation documents. For example, in the initial decision on the ETNPR from November 2022²², Ofgem said (our emphasis):

"Roles and responsibilities in CSNP"

We do not intend that the FSO develop a CSNP in isolation from other stakeholders. Development of a CSNP is intended to be a highly collaborative and transparent process, but led by one central body which can take a strategic GB-wide view to lead network development. Given that the assets and the network that is being developed are owned by network owners, we expect TOs to be a key contributor to the CSNP process and, subject to further consultation, TOs could lead aspects of developing a CSNP. We expect competition as a delivery model will be considered within CSNP, either as a result of the FSO procuring services or through the competitive appointment of transmission owners.

...We agree with the suggestion by one respondent that the CSNP should take input from a range of stakeholders such as electricity distribution network operators, gas network operators, generators, and equipment suppliers, with the latter to identify challenges with supply chain and overall delivery. CSNP is proposed to promote whole system thinking and efficient development of the energy system, with a requirement for extensive input from stakeholders from across industry, communities and government.

In Ofgem's consultation on future of local energy institutions and governance²³, it described the FSO's potential role as Regional System Planner as one where RSPs:

"undertake strategic planning activities" and "network companies would remain responsible for network planning activities...The existing actors plan for their own assets and within their own competencies. We are proposing that the RSPs focus on

²² Decision on the initial findings of our Electricity Transmission Network Planning Review

²³ Consultation: Future of local energy institutions and governance

their coordination and coherence: ensuring common starting points, facilitating dialogue and creating an independent strategic summary (the regional whole system strategic plan)” (our emphasis).

We therefore think there is a risk that this question – and the Consultation more broadly – overlaps with issues that are being developed through other consultations and policy decisions. The FSNR should not be used as a means of determining the scope of any future strategic network plans (i.e. the CSNP or RSPs), nor the division of roles/responsibilities.

We agree that the outcomes from the respective CSNP and RSP consultations will influence the price control framework, and how quickly those strategic plans can be incorporated into the price control process, but it would not be appropriate for the FSNR Consultation to pre-empt or influence the outcomes of those separate processes.

Given the likely timing of the outcome of those consultations, and the timeframe for establishing the FSO, we are also clear that an interim and transitional arrangement will be required for ET, to ensure there is a clear route to establishing need for the investments that will be delivered during the next price control. In some cases, NGET wishes to work with Ofgem to gain confidence in the acceptance of need in early 2024 to ensure those projects remain on track.

Finally, we are conscious that a key limitation of the regional and national strategic plans (as currently described) is that they would not have a formal role in the planning and consenting framework and are unable to overcome the major delays to delivering network infrastructure at the pace required that planning and consenting can cause. We therefore believe there is a need to move towards the creation of a ‘Strategic Spatial Energy Plan’. This would build on the strategic network plans to provide an authoritative evidence base for the key clean energy projects – both networks and beyond (for example the location of hydrogen and offshore wind) – that are needed to deliver the Government’s 2035 and 2050 targets, with full weight in planning law, and endorsed in national and local planning policy.

3. Under what circumstances would competition, or other procurement models such as open book contracting, have benefits over ex ante incentives as a cost control mechanism?

Key Messages

- We welcome the introduction of a competitive market for major transmission network capacity.
- We believe a range of models: competition, setting allowances on the basis of open book contracting (and pass-through of costs) and ex-ante allowances will be needed given the range of investments.
- To maximise benefits for consumers, there needs to be a consideration of the interaction between competitive tenders and the broader supply chain environment. Models which support longer-term “scale” relationships with the supply chain can offer benefits in such circumstances.

We welcome and support the introduction of network competition and believe it can drive consumer benefits through innovation and downward pressure on costs, where applied appropriately, as well as attracting additional sources of capital into the sector. We think it is important that system requirements that are competed are new, physically separable and strategic, and are put out for competition where it would be in consumer interests to do so.

Due to the different types of investment, we think there will need to be a mix of competition and direct appointments to TOs, together with other procurement models which could include open book contracting as an element as well as competitive tendering where appropriate.

At the distribution level, competition already exists where customers are trying to obtain new access to the network – i.e. where the assets are new, separable and sole user, then connections can appoint an independent connections provider (ICP) or independent DNO (iDNO) to undertake this work. For NGED, Ofgem has already determined that many of its segments and areas are already deemed fully competitive with NGED serving a minority share of the market meaning it is no longer restricted to applying a regulated margin on its pricing.

We recognise the benefits of competitive tendering and believe it should remain as part of the future regulatory framework. In identifying where it should be applied to maximise benefits for consumers, there needs to be a consideration of the interaction between competitive tenders and the broader supply chain environment. As we explained in our introduction, one of the three macro-challenges we see the next price control is how it enables network companies to manage their risks associated with global and UK supply chain (including resource and skills) constraints.

We are seeing increasing competition for assets and resource and a more volatile macro-environment in which to source supplies, which is flowing into:

- **extended lead times** – for example, some delivery of transformer units (manufacturer dependent) have extended to c. 3+ years, and items such as circuit breakers are now c.80 weeks lead time (again manufacturer dependent);
- suppliers (both equipment, installers and service providers) being **less willing to enter competitive processes** as they prioritise their resource and capacity;
- **cost uncertainty**, with significant and unexpected changes in manufacturers costs linked to (i) the need to secure factory capacity much earlier than the required delivery date, which creates increased cost uncertainty within the supply or leads to increased costs to manage the financial exposure, e.g. hedging commodity costs required for fixed prices to be given; and (ii) the impacts of geo-political instability, e.g. energy costs and for certain metals where normal supply chains are disrupted.

Further examples of the supply chain challenges are set out in **Appendix 2**.

As a consequence, manufacturers are increasingly unwilling to set fixed prices, instead requiring indices or part open book costing. There is also a need to increase capacity in skilled labour, which requires service providers' time and commitment in order to train and develop relevant skill sets of employees, and is driving additional cost and time into the supply chain. It is these factors which inform our view that a mix of

competition (which we expect will often be on discrete projects and as such may not always work well in circumstances where developers will need to attract interest from the supply chain), open book costing and competitive tendering will be required to manage the different circumstances for different types of investments.

We are already responding to these challenges and seeking to manage our risk for some large strategic investments by creating a new business model for delivering certain of the ASTI projects. Learning from other sectors and UK infrastructure delivery, we have adopted an enterprise model. This will allow us to work more closely with our supply chain and develop longer-term relationships. By engaging the supply chain on a programmatic basis, we are creating the incentives on them to both engage, due to the higher volume of work, but importantly also to invest in growing their overall capacity to deliver in the timescales available. Under this alliance-style model we are running competitive tenders for partners to join the alliance to whom we will allocate specific work areas across programmes of ASTI projects. We can provide further details if helpful on the ways in which we are maintaining competitive tension through this new business model.

A reliance on competitive tendering potentially drives less value for consumers in circumstances where supply chains are highly constrained. Instead, working more closely with the supply chain to understand costs and develop longer term relationships will drive increased value and enable effective delivery. Open book and/or target costing can enable this, as will the ability to give the supply chain early certainty over the volume or work required.

It is likely that a combination of approaches will be needed, to maximise benefits for consumers and progress investments at the necessary pace, but a consistent theme is the need for network companies to be able to make viable commitments early, and whilst making these commitments, be able to recover proven costs.

Open book costing may also be more appropriate in circumstances where a solution is less certain and where design and development as we move from optioneering and development can be extensive. Competitive tendering in this case would risk driving additional time into the process, as it is not possible to launch the final tender until the scope is locked down, and could therefore lead to delayed delivery, which would not be in consumer interests.

4. What is your view on the options identified for simplification of incentive regulation? What would be the benefits and costs by comparison to the approaches used in RIIO-2?

Key Messages

- A different approach is needed to address simplification for each sector
- We do not agree with Ofgem's definition of "BAU" activities and do not think it is appropriate to classify work as BAU/non-BAU given the level of transformation required and the interrelated nature of the work that will need to be delivered
- Options for simplification include taking consistent and standardised approaches, having fewer categories of uncertainty mechanism, reducing the number of stage-gates, more use of automatic mechanisms, and ensuring data requests and level of detail sought is proportionate to the value (financial and otherwise) in question for consumers. This would reduce burdens for both Ofgem and network operators
- We see a case for single, agile and simplified model in the form of an ex-post based approach, as one option for Ofgem to consider
- Data and automation may help deliver 'smarter' regulation in time, but they need to be developed alongside designing a less complex regulatory framework and not an either/or

We agree the future framework will need to include simpler, more agile approaches to ensure the framework facilitates the pace of investment required, with regulatory processes that are proportionate to the value (financial and otherwise) in question and the benefits delivered to consumers. This will also ensure the time and efforts of the network companies and the regulator are focused on the big tasks at hand to maximise consumer benefit. In section 2 of this response, we have provided some examples from the current framework where the level of effort required for National Grid and Ofgem does not appear proportionate to the level of consumer interest at stake.

Within the RIIO-ED2 framework there are a range of tailored approaches for primary and secondary reinforcement – some mechanistic, using unit costs and volume drivers for certain activities, combined with reopeners above a certain trigger point in the latter years of the ED2 price control. In general, where automatic mechanisms can be developed as part of the next price control (whether for transmission or distribution) this could help deliver simplification.

We have been engaging on this point with Ofgem and other interested parties through FSNR workstream 2 (WS2). This workstream remains ongoing and we are carrying out further internal analysis (NGET focused) on which categories of investment might be suited to which simpler approach. We will share this with Ofgem when more progressed.

As discussed in the working groups for WS2 that have taken place, we think it is important to consider what simpler regulation might look like – in terms of cost assessment, incentives (including efficiency and timeliness of delivery), but also in terms of process, data requests, detail of submissions – and then identify the type of work for which that simpler process might be appropriate. Given the scale of transformation required through the energy transition and the different challenges facing the different sectors, a 'one-size-fits-all' approach won't be appropriate.

We do not agree with Ofgem's suggestion of defining work as "BAU" as the level of transformation means historical workplans and delivery approaches are unlikely to be the same as those going forward. We explain in section 1 and 2 of this report how we will need to approach planning and delivering our upgrade of the network as part of a holistic Future Network Blueprint approach which combines multiple investment plans into efficient site-based strategies. Therefore, we do not think the separation between BAU and other activities reflects how networks will need to work to deliver the scale and pace of investment needed.

Historical cost data is also likely to be out of date, given the volatility and challenges we are seeing in the supply chain. Well-designed real price effect (RPE) adjustments could help mitigate this, but will not be appropriate in all cases, as given global supply chain dynamics, there are circumstances where input prices of components are not representative of the movements in underlying indices.

Across all categories of investment, we think there is the potential to simplify approaches, for example, taking more consistent and standardised approaches, having fewer categories of uncertainty mechanism, reducing the number of stage-gates, and ensuring data requests and level of detail sought is proportionate to the value (financial and otherwise) in question and overall consumer benefit being delivered. This will prevent time and effort being caught up on granular details when they would be better spent on progressing delivery and unlocking the consumer benefits.

As noted in sections 1 and 2 of this response, there is a case for adopting a single regulatory model that is simple and agile. We believe a cost pass-through approach across all investment, with a fixed rate of return, could be a suitable option, provided certain conditions to put boundaries on such an approach are included and the financing implications are considered. This is covered further in our response to question 5 below.

Finally, we agree with Ofgem that digitalisation will have a role to play in simplifying the regulatory approach, but we do not see digitalisation offering significant simplification opportunities in the near-term, and the framework must therefore be made simpler by design. While data and automation may help deliver 'smarter' regulation in time, they are not the route to delivering a less complex regulatory framework.

5. What are the network activities where there would be benefits for a move to an ex post monitoring regime, and what would be the associated costs?

Key Messages

- We believe the future framework will need to incorporate cost-pass-through mechanisms, and see potential for a scenario where a cost-pass-through approach could be adopted across all investment
- An ex-post based approach would be suited to activities where there is (i) uncertainty around scope and/or costs, and/or (ii) a need to progress delivery at pace
- Cost pass through will only succeed if the associated ex-post review is: (i) light touch, (ii) applied against predetermined objective tests, and (iii) clear on the circumstances in which investment would be disallowed

Given the urgency with which network investment now needs to be delivered, and the supply chain environment in which those investments will need to be made, we think the future price control framework will need to incorporate cost-pass-through mechanisms with an ex-post review within its design, for at least some investments.

Such an approach is best suited to activities where there is:

- a) uncertainty around scope and/or costs means setting an ex-ante allowance – whether outright, as a unit cost with volume driver, or with RPE adjustments – would impose too much risk on network companies and consumers; and/or
- b) a need to progress delivery at pace and the time involved in setting allowances up-front would slow progress and delay delivery of the associated consumer benefits, such as for large strategic new infrastructure.

We can also see a case for adopting a single regulatory model that is simple and agile and believe a cost pass-through based approach across all investment, with a fixed rate of return, could be a suitable option, provided certain controls are included (as set out below) and the financing implications are considered. This would not preclude elements of the ‘plan and deliver’ archetype being adopted as a route to identifying the need for certain projects and determining whether certain work is put out to early competition.

We have experience of this type of regulatory approach with our US transmission networks, which are regulated by the US Federal Energy Regulatory Commission (FERC) using formula rates with a fixed return on equity. This approach offers benefits in attracting the necessary capital, focusing more on timely delivery (to connect new renewables and reduce constraints and overall consumer bills) than on short-term marginal network costs. It would also free up regulatory and network time to focus on the key issues at hand.

In order for this approach to succeed and meet its intended objectives, the **ex-post review** to assess whether the relevant outcomes had been achieved and whether the expenditure to get there had been efficient would need to be:

- **Light touch** – to ensure the review did not simply shift an upfront complex regulatory process to one that came after the investment had taken place, and free both the network companies and the regulator from burdensome regulatory process to focus on delivery at pace;
- **Applied against predetermined objective tests** – to ensure the benefit of hindsight and additional information could not influence the review, and to provide network companies and their investors with comfort that their decisions were not going to be judged subjectively, nor against information that was not available to them at the time of making the decision;
- **Clear on the circumstances in which investment would be disallowed** – to ensure the potential parameters in which investment could be disallowed were known upfront and therefore the level of risk associated with any expenditure could be assessed with relative certainty (for both network companies and their investors) at the time the investment was taken. This could take a similar approach to the ESO’s ‘demonstrably inefficient and wasteful expenditure’ test with an equivalent cap on the percentage of investment that could be disallowed.

It would also be important to retain the use of incentives within this model, including to ensure efficiency, timely delivery, and whole-system cooperation, and we are considering how such incentives might apply. We welcome the opportunity to share and discuss this thinking with Ofgem when it is complete.

6. What are the benefits and costs of this approach for Electricity Transmission by comparison to an evolution of the approach in RIIO-2, and what are the implementation barriers?

Key Messages

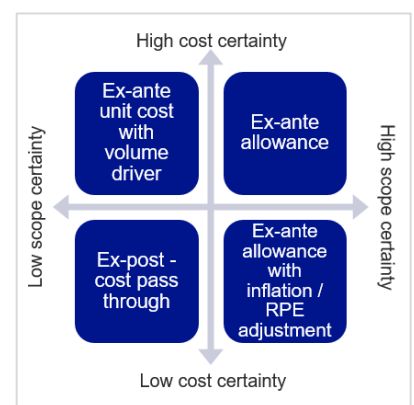
- We think a mix and match framework for ET could be designed to meet the challenges facing network companies as they deliver the energy transition
- There is a risk that such an approach could drive excessive complexity and inadvertently slow down progress, undermine desired holistic delivery approaches or lead to uncertainty and additional risk for investors
- Rather than assess potential regulatory approaches against Ofgem's suggested categorisation of work, we think it would be more appropriate to separate out the component parts of the archetypes and then seek to answer the following questions for each category of work:
 - who decides what is needed (e.g. Ofgem, network companies, FSO)?
 - how should delivery responsibility be determined (e.g. is the work subject to early competition or exempt)?
 - how should costs be controlled (e.g. competitive tendering, open book processes, tendering)?
 - how should allowances be set (e.g. ex-ante, ex-post)?
 - how should networks be incentivised to deliver the outputs of most value (financial and otherwise) to consumers?

We think a mix and match framework for ET could be designed to meet the challenges facing network companies as they deliver the energy transition. It would ensure the most appropriate regulatory model for each category of investment, reflecting its characteristics, in particular the level of scope and cost certainty for the investment in question. The approach used for any one investment could also change during the life of the project to maximise consumer benefit, for example, as scope/cost become more certain.

However, there is a risk that such a model could drive excessive complexity and inadvertently slow down progress, undermine our holistic site-strategy approach, or lead to uncertainty and additional risk for investors.

We still need to assess how such an approach would work in practice and understand the complexity and risks associated with such a framework. We are also looking at what the correct financing approach for a mix and match approach might be, and how to ensure it properly reflects the risk/reward balance in such a model, as described further in our response to Question 10 below.

In carrying out our assessment for each category of investment, we will seek to determine whether there is both sufficient time available and certainty on scope and cost to enable an ex-ante allowance to be set up front – without imposing too much risk for either consumers or the network companies (and their investors). If there is not, then a cost pass-through / ex-post based approach which avoids an upfront regulatory process, or places risks with networks that they are not able to manage (resulting in costs of capital premiums) is in the best interests of consumers. In some instances, it may be that an ex-ante allowance with appropriate 'Real Price Effect' (RPE) adjustments would overcome any cost uncertainty, but in other cases, a cost pass-through may be more appropriate. The matrix opposite shows an example of the different options that might be selected depending on the level of cost and scope certainty:



For ET, the Consultation proposes that investment activities could be separated into three categories against which the mix and match approach could be applied:

- (i) Business as Usual / Replacement;
- (ii) Reinforcement; and
- (iii) New Build.

We have suggested some clarifications below to ensure the categories capture the work we think will be needed from NGET during future price controls. The categories also seem to be more capex focused and don't reflect closely-associated indirects (CAI) and business support costs (BSC), some of which are likely to be routine and broadly reflect historic run-rates (indexed accordingly), but others will be affected by the scaling up of activity associated with 'upgrade' (as per our definition below) and 'new build'. The following summaries reflect how we would interpret Ofgem's categorisation:

- (i) Business as Usual / Replacement – this would cover routine maintenance of existing assets, like-for-like replacement of assets, standard spend in areas such as IT and property, as well as customary business support costs;
- (ii) Reinforcement – we think this would be better defined as "Upgrade" and would cover the upgrading and uprating of existing network and re-building sites in order to ensure they are fit for 2035 and beyond and meet relevant resilience requirements (cyber, climate, security), while also delivering associated connection requests, SF6 replacement, asset health, etc. on existing network. It would also cover IT upgrades; and
- (iii) New Build – this would cover the build of new network assets/infrastructure, including substations, overhead or underground lines. It would also cover development of, or investment in new IT systems.

In reality, there are likely to be circumstances where investments do not neatly fall into one of the above, e.g., the distinction between replacement and upgrade of an asset might not be clear-cut, and the scale of work required at a site could easily turn it into a re-build upgrade. Equally, when we consider the above categories against the different drivers of work the networks will need to deliver, it may be that the categorisations make sense, but that the appropriate regulatory treatment might differ.

While elements of each archetype will be relevant to the assessment, we do not think any of the archetypes could be implemented as they are described today and would need adjustments to be acceptable in practice. Rather than assess each archetype against these categories, we think it would be more appropriate to separate out the component parts of the archetypes and then seek to answer each question for each category of work:

- who decides what is needed (e.g. Ofgem, network companies, FSO)?
- how should delivery responsibility be determined (e.g. is the work subject to early competition or exempt)?
- how should costs be controlled (e.g. competitive tendering, open book processes, tendering)?
- how should allowances be set (e.g. ex-ante, ex-post)?
- how should networks be incentivised to deliver the outputs of most value (financial and otherwise) to consumers?

The first two points are about identifying what is needed and who will deliver the solution; the second two are then about how the costs for the work the transmission operators are responsible for delivering are determined and funded, and the final point is around ensuring networks focus on the key outputs.

Our main response document provides a summary of the 'next steps' we plan to take to develop our assessment of a mix and match approach further.

7. What is the potential for Electricity Distribution planning and commissioning to move to an alternative model by the end of RIIO-2, and what might be the benefits and costs of doing so?

Key Messages

- The ED2 framework has improvements from ED1, and the design already reflects elements of archetype 1 and 2 from the Consultation. All archetypes could be considered for future implementation subject to detailed cost and benefit assessment.
- Uncertainty mechanisms provide both a regular biennial stage gate for submission of evidence to support new funding requests for larger scale bespoke distribution projects and an agile volume driver for smaller scale distribution projects on the lower voltages which have more homogeneity – these will be fully tested through the rest of the ED2 period

Electricity Distribution has just commenced the five-year investment cycle period of RIIO-ED2. This latest price control has built on the foundations developed in RIIO-ED1 with the focus on customers and outputs remaining central, as they must in any price control framework. RIIO-ED1 has delivered significant outcomes and improvements for customers over the period, including the connection of over 11GW of distributed generation, which was not envisaged at the start of ED1, demonstrating that the RIIO arrangements were flexible to deliver changing stakeholder needs.

Given the additional target for net zero which came in during the RIIO-ED1 control, RIIO-ED2 developed a number of mechanisms to further support investment in new capacity, which are significantly more agile compared to RIIO-ED1. The ability to plan and deliver the future capacity required to connect the significant increases in load are being assessed by our DSO to consider whether flexibility can deliver the increase in demand instead of solely relying on a build option. The ability to assess and determine the most efficient outcome is a key activity of the DSO/DNO which works well under the existing framework.

For load related expenditure in ED2, all distribution companies were required to publish within their RIIO-ED2 business plans a supporting load related expenditure strategy. These plans detailed networks' approaches in developing the strategic vision, undertaking forecasting, analysing network impact, assessing optioneering and deciding on the investment plan.

The RIIO-ED2 process demonstrated much greater transparency and detail behind the distribution planning process supporting more investment than has been seen in previous price controls. The use of industry standard scenario frameworks to support the identification of need and quantification of likelihood form a strong position to support the move to alternative models beyond RIIO-ED2.

In Ofgem's assessment of the allowances provided for load related expenditure, it was seeking to balance the need to protect consumers from paying higher costs than necessary, with ensuring that networks enable net zero by having sufficient funding to invest in network capacity so that low carbon technologies and the connection of new clean energy sources do not face installation or operational delays. The package of load related expenditure ex-ante funding was set to enable up-front investment to support net zero where there is high confidence in its needs case and the associated uncertainty mechanisms, with guardrails, allow DNOs to respond quickly to future changes in demand.

Ofgem's final determination for RIIO-ED2, provided upfront allowances to network companies that were much lower than requested, but still represented a step up in investment for new capacity compared to RIIO-ED1. The package of associated uncertainty mechanism provides both a regular biennial stage gate for submission of evidence to support new funding requests for larger scale bespoke distribution projects and an agile volume driver for smaller scale distribution projects on the lower voltages which have more homogeneity. Alignment of these processes to existing regulatory reporting data exchanges and licence conditions such as SLC25b requiring the publication of a ten-year Network Development Plan, will help embed efficiency and assurance.

In addition to the load related mechanisms outlined above, there are also a range of use-it-or-lose-it allowances in the RIIO-ED2 control, and allowances linked to price control deliverables which demonstrate the mix of archetypes 1 and 2 which are already in use in RIIO-ED2, and the outcome of all of these

mechanisms is driving to ensure all customer required outputs which were known about at the start of ED2 or evolve throughout the control are delivered in the most efficient way.

When considering new alternative models of regulation, the mix and match approach could also be applied to different categories of load related expenditure, depending on their propensity towards certainty of cost and scope. Distribution activity has a very different blend of risk compared to transmission, due to the higher volumes, lower individual project costs and shorter timescales of both need identification and delivery.

Through the remainder of the RIIO-ED2 period, the package of uncertainty mechanisms will be fully tested, allowing the industry and regulator to learn from the submission and decision-making processes for the re-opener mechanisms and the calibration of the regulatory guardrails for the volume driver mechanisms. Costs, benefits and efficacy of these processes need to surface and, where successful, early commitment to rolling these forward into future alternative models will help build confidence and supply chain in delivering the infrastructure at the speed needed for net zero.

As set out by Ofgem in this consultation 'Plan and Deliver' regulation has two distinct components. Firstly, the needs identification and a delivery route selection, secondly the delivery of the result via competitive processes. The success of the Ofgem proposed 'Plan and Deliver' archetype would be reliant on both the development and implementation of an institution that could both specify the required product and on the presence of a robust supply chain that is willing to compete for work. At this stage it is not clear that such an institution could be adequately set up by the end of ED2, nor is it clear that a robust competitive supply chain could be instigated by the end of RIIO-ED2 (March 2028). We have provided our more detailed feedback on the proposal to create RSPs in our response to Ofgem's consultation on future of local energy institutions and governance.²⁴ One alternative could be an adaptation of archetype 1 would, using interim arrangements before the Future System Operator (FSO) and Regional System Planners (RSPs) are established. The detailed costs and benefits of any such proposal have not yet been considered or assessed.

We have also set out – in response to Question 2 above – our views on the level of detail for any plan developed by the RSP and the link to the CSNP. In summary, we do not believe the RSP should become a commissioner of investments and their plan should focus on bringing cross-vector local perspectives and objectives and not detailed network designs and operational issues, given it could blur the accountabilities with network operators for safely and securely maintaining their assets, and the expertise needed to plan at such a detailed level.

²⁴ Consultation: Future of local energy institutions and governance

8. What is your view on the most effective approach to regulation of Gas Distribution and Transmission beyond RII0-2? What would be the benefits and costs of moving to a simpler approach to regulation of the ongoing costs of operating and maintaining the network?
N/A
9. Should there be a shorter-term price control in gas distribution and/or gas transmission, and how could this work in practice?
N/A

10. Would there need to be any changes to maintain a stable and consistent financial framework if we were to make greater use of different regulatory archetypes, and if so, what would those changes need to be?

Key Messages

- We believe changes to the financial framework will be necessary to maintain the confidence of investors and give the assurance required that returns and overall financeability will be acceptable
- Changes to the regulatory framework alongside the macro-instability, and reduced returns in the RII0-T2 outcome, mean there is a particularly challenging backdrop for network companies and the level of investment risk
- Four main factors will need to be reflected in the design of the financial framework: (i) market conditions are no longer stable, (ii) the level of investment is unprecedented, though it will drive significant consumer benefits, (iii) levels and types of risk will differ under a new regulatory framework, (iv) financeability assessment will be more complex
- A framework that is perceived by investors to deliver minimal acceptable financial outcomes with limited financeability headroom will deter investment and risk delaying consumer benefit and ultimately the delivery of the Government's net zero policy objectives. The right financial framework design, and risk and reward balance, will ensure that consumers receive the full potential benefits from the energy transition
- Greater use of elements of archetypes 1 and 3 would need to be accompanied with changes being made to the financial framework to mitigate the impacts of the additional risk associated with such approaches
- Given the high level of investment in the next price control, speed of cash is also a critical driver of financeability. It is essential that the most appropriate levers to ensure speed of cash are thoroughly assessed well ahead of the next price control including RAV depreciation profiles and asset lives, and capitalisation rates

The challenge facing electricity transmission owners (TOs) is significant, with a scale and pace of transformation needed to deliver the net zero transition that is fundamentally different to what has been achieved to date. To achieve the government target to decarbonise the power system by 2035, whilst providing for an estimated increase in electricity demand of 50%, a significant increase in investment is needed. By 2030, NGET will need to build 5 times as many transmission overhead or underground lines than we have built for the last 30 years. This is alongside building 4 times more marine cables than our current offshore network.

The credit rating and investor proposition of a network company is dependent on a transparent, stable, and predictable regulatory regime. This is underpinned by a clearly defined and understood risk and reward framework allowing a solid financial profile. This is even more important in the current environment, where there is substantial international competition for capital.

The macro environment is no longer stable with market conditions, including interest rates, altering dramatically from trends of the last decade. This, alongside the scale and pace of investment required to reach net zero, provides a particularly challenging backdrop for TOs as we move towards the next price control. These factors increase the level of investment risk and it will be important to address these so that the final regulatory and financial framework allows us to attract the investment required to deliver the material levels of new and upgraded network that will unlock the consumer benefits associated with the energy transition. We welcome the opportunity to work with Ofgem on designing the appropriate regulatory and financial framework in the coming months. Appendix 3 sets out more information on the current market conditions.

We will need more information on the design of the future regulatory framework, and how it would work in practice, to assess the risk and return requirements fully. However, based on the trends and requirements outlined above, we believe changes to the financial framework will be necessary to maintain the confidence of investors and give the assurance required that returns and overall financeability will be acceptable. These

changes will ensure we can attract the necessary capital required to deliver the network investments and unlock the associated consumer benefits.

The reduction in returns in the RIIO-T2 outcome has already made the investor proposition weaker. The changes to the regulatory framework under consideration in the Consultation will further change the profile of risk in our industry requiring detailed assessment of risk and appropriate mitigations to be put in place through the financial and regulatory framework.

Below, we have set out our view of the main factors that need to be reflected in the design of the financial framework:

- Market conditions are no longer stable
- The level of investment is unprecedented, but is expected to drive significant consumer benefit by attracting the level of capital required
- Levels and types of risk will differ under a new regulatory framework
- Financeability assessments will be more complex

Market conditions are no longer stable

Market conditions are now very different from those that have been seen in the recent past. After a sustained reduction in interest rates throughout the past decade or more, there has been a substantial reversal in this trend over the past year, with rates returning to levels more akin to those last seen in the years leading up to RIIO-T1/GD1.

Evidence suggests that the substantial reductions in allowed returns in the most recent rounds of price controls may need to be reversed to account for changes in market conditions.

Appendix 3 sets out more information on our view of the market conditions.

The level of investment is unprecedented, but is expected to drive significant consumer benefit

Achieving the government's ambition for a decarbonised energy system by 2035 will require a different mindset towards the financial framework, with a focus on attracting capital to unlock consumer benefits.

The net zero transition will be a defining feature as we move into the next price control and will shape the scale and pace of the investment. The work on the 17 ASTI projects allocated to NGET in December 2022, and the planning NGET has completed so far for the next price control, has shown that there will be an unprecedented increase in level of investment to be funded. The ASTI projects already represent an investment significantly higher than the whole of NGET expenditure in RIIO-T2, even before further expenditure is agreed as part of the next price control.

The successful delivery of both new network and transmission system improvements will enable lower overall consumer bills by reducing constraint costs and enabling greater volumes of lower cost renewable energy to be connected to the system and utilised. For example, our analysis of the ASTI projects show that the significant capital expenditure on electricity networks results in a net reduction in consumers' energy bills. Moreover, network investment will unlock wider societal benefits including improved security of supply, job creation and natural environment improvements.

To deliver the network investment required and unlock the associated consumer benefits, we will need to attract capital at a scale not seen before. Changes to the regulatory structure need to include a financial framework appropriate to a sector required to raise significant finance when it is needed. There is a risk that a framework that is perceived to deliver minimal acceptable financial outcomes with limited financeability headroom will deter the investment and risk delaying consumer benefit.

The right financial framework design, and risk and reward balance, will ensure that consumers receive the full potential benefits from the energy transition. This includes:

- **Return reflective of risk:** We agree with the sentiment in the Consultation that the high level of investment alongside changes to the regulatory framework may warrant changes to the cost of capital (which will be amplified by market conditions). It is critical that the allowed return for network investments is reflective of the risks involved (including where they are driven by changes in the design of the regulatory framework, see next section), underpinned by a transparent and predictable regulatory regime.
- **New equity requires a premium:** Given the scale of investment required, it is highly likely that NGET could require new equity capital from its shareholder, as well as new debt capital. Providers of capital would typically require premium returns to incentivise additional investment.

- **Financial framework which compares favourably internationally:** As net zero is progressed around the world, investors will increasingly have choice on where to invest. The next price control needs to ensure that UK networks are attractive relative to overseas. For example, our experience of the US is that base returns are fixed at a higher level than in the UK. There are also examples internationally, e.g. the regulation of transmission in the US by FERC, of Return on Equity incentives to encourage new investment. The UK energy sector will be competing for capital internationally and it is in consumers' interests to give this careful consideration.

Levels and types of risk will differ under a new regulatory framework

The design of the future price control framework will impact the level of investment risk.

We believe the principles required from the future regulatory framework could be met through one of two approaches:

- A 'mix and match' based approach: incorporating elements of all three archetypes
- An ex-post based approach: a simpler agile, cost pass-through approach with a fixed rate of return across all investment

While we don't believe any of the archetypes should be implemented as described in the Consultation, we believe elements of archetype 1 ('plan and deliver') and archetype 3 ('freedom and accountability') will be a key feature of the future framework, which would be materially different to the current RIIO-2 framework.

In designing the final framework, there is a need to explore how balance can be achieved between the benefits of the changes to the regulatory framework and the potential complexity it could bring to the financial framework. The use of a mix and match approach for different categories of investment would complicate the calculation of risk and return at a project or archetype level. The current fixed period framework under RIIO has helped to maintain regulatory stability and we need to review how a more piecemeal approach to setting financial parameters for different projects and archetypes could be practically achieved and how any additional perceived risk and uncertainty for investors could be mitigated.

We believe either of the two approaches above, accompanied with an appropriate financial framework, could provide the certainty required to progress investment at speed and deliver consumer benefit. Our support for these solutions is based on sufficient changes being made to the financial framework to mitigate the impacts on risk due to the use of elements of archetype 1 and archetype 3 at a greater scale.

The risks associated with 'plan and deliver' include:

- the introduction of early competition, which will make the forecasting of requirements for long-term capital funding harder and will impact on investor sentiment when choosing to invest in network companies;
- counterparty risk will be introduced with network companies at risk of breaches caused by third parties operating under contracts chosen by Ofgem; and
- increased interface risk as parts of the network are owned by more parties, projects will start to depend more on interactions between different stakeholders, with different assets.

These risks can be mitigated by including mechanisms that limit or compensate networks for such risks, including funding mechanisms for increased costs. Clearly defined responsibilities, processes, and timelines for resolving issues will also be critical to ensure projects are not impacted materially.

The risks associated with ex-post cost pass through frameworks referenced in 'freedom and accountability' include:

- investors perceiving the asymmetric risk attached to ex-post frameworks as unattractive if they do not expect to recover the allowed cost of capital due to the potential for disallowance in the ex-post review; and
- a lack of incentive opportunities around ex-post frameworks, which could reduce focus on innovation.

The ESO's RIIO-2 framework provides solutions for moving to a cost pass through model and mitigate against asymmetric downside risk. Key features that should be explored further for networks if models which have similar effects are implemented include:

- The high threshold for disallowance where Ofgem must prove 'demonstrably inefficient and wasteful expenditure'; and

- Additional revenue allowances to compensate for the asymmetric risk based on the expected loss from disallowance.

Mitigations should also include clearly defined processes for ex-post review (including project size threshold) and investigation of how incentives apply for innovation, efficient expenditure, customer outcomes and timely delivery. We see the benefit such approaches can bring if properly designed and in an appropriate context, including on the ability to attract investment in an international market where many companies are competing for the resources needed to meet net zero commitments.

Recent precedent has been to reduce base returns in the UK to low levels. A mix and match or ex-post framework must review the returns it provides to ensure it unlocks the estimated consumer benefits delivered by encouraging investment in the energy transition at the substantial levels of capital required.

The work which led to the award of the 17 ASTI projects to NGET in December 2022 highlighted that large, new infrastructure projects are likely to change NGET's risk and return balance and, as a consequence, the overall financial package required. ASTI projects are an example of potential changes to risk from projects with different size, scale, supply chain intensity and projects that involve different delivery models and technical solutions than those that have been used in UK transmission previously. We strongly believe there is a need to explore whether these types of projects require a higher cost of equity to ensure the returns reflect the increased risks and can be financed and delivered at the pace required. We welcome the opportunity to discuss the impact on risk, required return and the overall financial framework for the 17 ASTI projects at the earliest opportunity ahead of the next price control timelines.

Financeability assessments will be more complex

Financeability needs to be ensured at the licensee level so that the entity can fulfil its duties and obligations under its licence, and Ofgem fulfils its duty to have regard to the need to secure that licensees are able to finance their licensed activities, attracting debt and equity investment when required. For example, NGET has a single licence, which sets the obligations it must comply with and deliver against, and a single credit rating it must maintain to ensure it can continue to attract the investment. This is crucial to ensuring NGET can deliver the changes to its network required to meet the net zero ambitions.

The level and pace of investment required during the next price control period is likely to result in significant investments and allowances being set outside of the traditional periodic review, as we have seen with ASTI being determined outside of a periodic review.

To ensure financeability is maintained in this environment:

- Ofgem should consider a broad range of scenarios in its assessment of financeability to ensure there is sufficient headroom to cover a credible range of outcomes and ensure financeability can still be met comfortably; and
- In addition, the whole price control needs an additional assessment each time a significant piece of investment is agreed out of normal periodic cycles to ensure interdependencies have not impacted another part of the licensee.

Given the high level of investment in the next price control, speed of cash is also a critical driver of financeability, and the framework will need to consider appropriate levers to ensure both intergenerational fairness for consumers and future financeability to make sure net zero investment can be met. We consider it essential that the most appropriate levers to ensure speed of cash are thoroughly assessed well ahead of the next price control including RAV depreciation profiles and asset lives, and capitalisation rates.

In summary

We agree that there is a clear case for exploring change to the regulatory framework and believe this could be delivered by adopting either a 'mix and match' approach that applies elements of all three archetypes, or a model based on an ex-post, cost-pass through approach. However, a move to either of those approaches would need a corresponding change to the existing financial framework to ensure it provides the requisite assurance to investors to attract the unprecedented capital that will be needed at pace. This is heightened further by the deterioration in the stability of the macro environment.

To ensure changes to the current regulatory regime do not lead to investors perceiving an increase in regulatory risk that will deter investment and threaten the required network investment and associated consumer benefits, creative solutions will be needed, including:

- Ofgem ensuring the regulatory and financial framework takes proper account of the benefits delivered to consumers and wider society by the required network investment, including reducing overall consumer bills by reducing constraint costs and enabling greater volumes of lower cost renewable energy to be utilised.
- Mitigating the risk impact of the wider use of strategic planning, anticipatory investment and early competition, which may result in less accurate forecasting of long-term capital, counterparty risk and interface risk.
- Providing solutions for asymmetric risk attached to ex post frameworks, including the impact on investors expecting to not recover the cost of capital due to the potential of disallowance. This should include solutions similar to those agreed in the ESO RIIO-2 framework (thresholds for disallowance and additional revenue allowances) and levels of returns in other regulatory frameworks (e.g. US networks) to ensure investment is attracted at the levels required.
- Exploring whether major strategic projects, such as ASTI, require a higher cost of equity to ensure returns reflect the increased risks in these projects.
- Ensuring the level of returns can attract investment at the scale and pace required to unlock the future consumer benefits, against a backdrop of international competition for capital, and that they are acceptable for the risks entailed in investing in the energy transition.
- Ensuring financeability can be maintained comfortably at the licensee level across a broad range of credible outcomes and attracts both debt and equity investors. Financeability should be reviewed each time large investments are agreed outside of the periodic reviews to ensure interdependencies have not impacted another part of the licensee.
- Considering how appropriate levers are applied to ensure the speed of cash required (partly as a result of the high level of investment) ensures both intergenerational fairness and future financeability.

11. Do you have any views on our proposed analytical approach?

Key Messages

- We agree with Ofgem’s framing of the analytical approach around its consumer interest framework (CIF) and agree it will be important to ensure the future framework delivers for consumers.
- We think it is important that future frameworks are also assessed against (i) the objectives of other key stakeholders; (ii) broader benefits of network investment, including societal and environmental impacts; (iii) a steady baseline counterfactual.

We agree with Ofgem’s framing of the analytical approach around its consumer interest framework (CIF) and agree it will be important to ensure the future framework delivers for consumers.

We think the more fulsome CIF set out on page 8 of Ofgem’s Future Work Programme²⁵ should be used rather than the abbreviated version shown in Figure 7 of the Consultation to allow for the full range of benefits to be captured in the assessment. We have also set out some suggestions on each of the pillars of the CIF below.

Alongside the CIF, we think it is critical that the future framework approaches are also explicitly assessed against:

1. the objectives of other key stakeholders (including investors, the supply chain and network customers), without whose input and engagement the energy transition and associated consumer benefits will not be delivered;
2. broader benefits of the network investment, including societal and environmental impacts; and
3. a steady baseline counterfactual – this should be RIIO-2 as it is today, not “assuming incremental change”.

Annex 5 of NGED’s response to the ED2 draft determinations included detail on the importance of taking a broad approach to measuring consumer value, and we refer Ofgem to section 5.9 of that document, in particular²⁶.

We are also keen to understand how Ofgem proposes to prioritise the trade-offs and competing objectives, which Ofgem acknowledges within the Consultation will arise.

We look forward to engaging on this further as part of the working groups being run in parallel to this Consultation, to ensure we understand how the framework will be used and applied, and to ensure there can be no risk of ambiguity in its application.

Specifically on the CIF, we have the following thoughts on each of the pillars:

Fair prices:

- The CIF references the degree to which “costs are efficient and fairly distributed”, although it is unclear what that would mean in practice. For example, it could refer to the distribution of costs across different types of customers, between customers and companies, and/or between current and future customers. We think it is important that the CIF properly considers future consumers as part of determining what is fair.

Quality & standards:

- We think appropriate incentives could be designed for all regulatory approaches to ensure the right focus on delivering consumer-focused outcomes and satisfy this requirement of the CIF.

Low-cost transition:

- In determining what is “least cost” to consumers, Ofgem should carefully consider both short- and longer-term cost efficiency, recognising that some approaches may risk driving short-term cost reductions at the expense of higher costs in the long-run, which also links to considering the impact on both current and future consumers. It will be important for the framework to take whole consumer

²⁵ [Ofgem’s Forward Work Programme](#)

²⁶ <https://www.ofgem.gov.uk/publications/riio-ed2-draft-determinations> - see Annex 5 within the WPD folder of ‘Response documents’

bill impact into account across the life of the investments being made, and we therefore agree with the reference to minimising the “net cost” of the transition in the sub-objectives of the CIF.

Resilience:

- CIF analysis should consider the costs and benefits of alternative regulatory approaches under a range of possible future scenarios. While a certain framework design might perform well under steady-state conditions (economic or otherwise), it may lack the ability to deal with material and/or unanticipated change (including market shocks). The framework must ensure the networks remain resilient on all fronts, including climate, cyber, security of supply and financial. The significant variance between FES scenarios and the economic impact of the recent energy price shock are examples that point to the need for the future regulatory model to be able to adapt quickly and appropriately manage risk.
- In terms of attracting sufficient long-term investment to deliver consumer interests, it will be important to ensure there is an appropriate risk/reward balance reflective of the specific risks of the different framework designs being considered.

With regard the need for a stable and understood baseline counterfactual for the purposes of assessing changes to the framework, there is a risk that in assuming incremental change to the current framework that any impact assessment will not be fit for purpose. The Treasury Green Book sets out the standard approach to the counterfactual in economic appraisal, which applies also to regulatory impact assessments. It states:

“Business As Usual (BAU) in Green Book terms is defined as the continuation of current arrangements, as if the proposal under consideration were not to be implemented. This is true even if such a course of action is completely unacceptable. The purpose is to provide a quantitative benchmark, as the “counterfactual” against which all proposals for change will be compared. BAU does not mean doing nothing, because continuing with current arrangements will have consequences and require action resulting in costs, in practical terms there is therefore no do-nothing option.”²⁷

The guidance also indicates that the decision maker should take into account other changes unrelated to the policy under consideration in their “business as usual case”. Given RIIO is a flexible framework of different mechanisms, it is not possible to separate “incremental changes to the current framework” from any future options which are likely to comprise similar or the same mechanisms that could be considered incremental. In other words, incremental changes to the current framework are not unrelated to the policy under consideration.

The Energy Network Association raised similar concerns with the RIIO-2 impact assessment about the lack of a clear counterfactual affecting the analysis of options for changes (alongside several others), which we encourage Ofgem to consider when designing the analytical approach for the next price control.

²⁷ [The Green Book \(2022\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/the-green-book-2022)

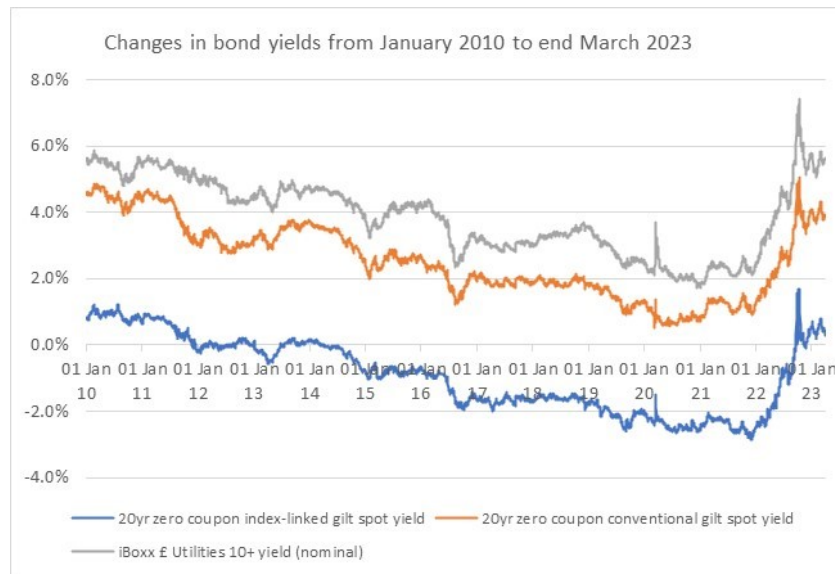
Appendix 2 Supply chain challenges

Below is a list of the kinds of challenges we are seeing across the supply chain and is not exhaustive. These types of challenges are arising across all capex and are not isolated to specific supply chains or categories of assets. We would be happy to provide more specific examples to Ofgem in confidence, given their commercially sensitive nature:

- **Geopolitical risks reducing supplier pool:**
 - Location of certain suppliers, e.g. Aluminium smelters, in less politically stable countries mean there is an ongoing risk of political events disrupting supply chains
 - Recent audits of suppliers who are not type registered has led to certain suppliers being removed from our pool of potential suppliers in the shorter term
- **Increased competition for supply chain**
 - From other regions/sectors (both within the energy space and beyond), many of which have funding approval in place for longer-term order books to form
- **Insufficient capacity – factory space and resource**
 - First come first served – no purchase order, no factory slot
 - A major supplier is working on active tenders that equate to 2.5 times the company's annual factory capacity
 - Resourcing factory capacity more challenging with suppliers competing for resource
- **Suppliers unwilling to participate in tenders**
 - For small volumes of products / projects
 - Through multiple tender rounds – suppliers are pushing to tender once for multiple schemes or adopt direct award
 - Volume of demand means suppliers are too busy to participate or can pick and choose what they respond to
- **Increasing lead times**
 - Circuit breakers and bushings now have a lead time of a minimum of 1 year, which has more than doubled in the last 18 months
 - Static wound equipment increasing from 12 months to 24 months average, with some moving to 30-36 months for larger equipment with the trend continuing
 - Also seeing increasing turnaround times for quotes
- **Volatile and increasing costs**
 - Suppliers only willing to keep prices valid for 4 weeks from quote, but tender times are far in excess of that validity period
 - Lack of consistency in the indices / price adjustment mechanisms suppliers are willing to work with, and some are unwilling to work with any indices as they believe they're unrepresentative of input prices being felt in the market
 - Significant cost increases being seen in light of increased demand and rising input costs, with some equipment costs trebling since 2019
 - Price increases on a 'take it or leave it' basis
- **Less favourable contract terms**
 - Suppliers less willing to accept previous terms due to increasing geo-political risk and ability to be more selective in who they deal with
 - Brexit impacts – quotes on basis of 'delivery at port' which causes more supply chain complexity against previous 'delivery duty paid'

Appendix 3 Market Conditions

Market conditions are now very different from those that have been seen in the years leading up to the RIIO-2 price controls, and indications are that financing costs have been increasing significantly. For example, after a sustained reduction in interest rates throughout most of the past decade or more, there has been a substantial reversal in this trend over the past year, with rates returning to levels more akin to those last seen in the years leading up to RIIO-T1/GD1. This is clearly illustrated by the following chart:



These increases in debt yields over the past year are mirrored in many of the shorter run indicators of required equity returns which Ofgem (and other regulators) have referenced in recent price control reviews, such as implied infrastructure fund discount rates, investment manager forecasts of total market return (TMR), and surveys of required returns to equity. Notwithstanding the reservations that we and others have expressed regarding the weight that appears recently to have been placed on these by regulators (even if only in support of regulators' 'judgement' or 'exercise of discretion'), these indicators now suggest that required equity returns have increased markedly since the RIIO-2 price controls were set.

The debate on allowed returns must now evolve to reflect (i) the fact that the prolonged period of low and consistently reducing interest rates has come to an end; (ii) the very clear reminder that markets can be volatile, and so this must be allowed for to ensure that networks will be able to raise finance when needed; and (iii) the need to increase investor confidence in the reasonableness of Ofgem's approach, not just in the short term but for multiple future price controls extending many years into the future, which is especially important given the scale of the investment program for electricity networks that will be needed to enable Net Zero.

The available evidence therefore suggests that even without increases in risk in the next round of price controls for electricity networks, the substantial reductions in allowed returns in the most recent rounds of price controls would now need to be reversed; and even if interest rates were to fall again between now and late 2025 when the next price controls for electricity transmission networks will be set, the experience of the past year shows that it cannot safely be assumed that consistently low and reducing finance costs will apply in the next round of price controls.