

## NATIONAL GRID RESPONSE TO THE RIIO-3 SECTOR SPECIFIC METHODOLOGY CONSULTATION (THE 'SSMC')

This response is from National Grid plc, covering our electricity transmission (NGET) and electricity distribution (NGED) businesses. It does not cover National Grid Electricity System Operator (ESO). We recognise that the regulatory framework applicable to NGED will be subject to a separate consultation in due course, and RIIO-3 should not be seen as setting binding precedent for RIIO-ED3, given important sector differences. Our response is therefore primarily focussed on the next electricity transmission (ET) price control that will commence on 1 April 2026 (RIIO-ET3).

Our SSMC response consists of six sections:

1. **Cover letter** – sets out our core messages on the SSMC at a high-level and accompanies this document;
2. **Regulatory Framework Executive Summary** – sets out relevant context to the RIIO-ET3 price control and our key 'asks' for the design of the RIIO-ET3 regulatory framework;
3. **Finance Executive Summary** – sets out our key messages on the financial proposals set out in SSMC for RIIO-ET3;
4. **Q&A Response Documents** – these set out our responses to the specific questions raised in the SSMC:
  - a. Part A: Overview Q&A
  - b. Part B: ET Annex Q&A
  - c. Part C: Finance Annex Q&A
  - d. Part D: GD Annex Q&A
5. **Supply chain annex** – sets out evidence and context of the supply chain challenges we are facing;
6. **Supporting evidence** – a number of consultant reports in support of the points made in our Finance Executive Summary and responses to the Finance Annex Q&A, and a paper in support of our response to ETQ11.

We have also submitted a number of confidential documents to Ofgem which form part of our response and supporting evidence, but will not be published.

## REGULATORY FRAMEWORK EXECUTIVE SUMMARY

### The importance of the RIIO-ET3 price control

As part of its legally binding commitment to achieve net zero by 2050, the UK government has committed to a fully decarbonised electricity system by 2035, subject to security of supply considerations. Achieving this 2035 goal is a critical step on the UK's path to reaching net zero. It will also improve security of supply, by accelerating our transition away from imported fossil fuels towards cheaper, cleaner, domestic sources of energy, and support long-term economic growth, by increasing investment and generating thousands of jobs.<sup>1</sup>

Ofgem's statutory duties have recently been updated to reflect the changing demands being placed on Britain's energy system, with the addition of both a net zero duty and a growth duty<sup>2</sup> reflecting the importance of the task ahead. It has already made a number of important and positive changes to the regulatory framework, including introducing the Accelerated Strategic Transmission Investment framework (ASTI). We support ASTI and it is already enabling us to work in new ways to speed up delivery for consumers. The principles behind ASTI, with its focus on delivering progress at pace across a programme of works, can provide the positive foundations for the next price control framework; supporting TOs to adopt the new ways of working required for them to support the energy transition.

Decarbonising our electricity system will not be possible without ensuring Britain's grid infrastructure has been expanded and modernised. The investments that we deliver during the next electricity

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<sup>1</sup> <https://assets.publishing.service.gov.uk/media/65646bd31fd90c0013ac3bd8/transmission-acceleration-action-plan.pdf>

<sup>2</sup> Ofgem's net zero duty is now in force. The growth duty is due to come into force in April 2024.

transmission price control period (RIIO-ET3) will be critical in determining whether the 2035 target can be achieved, and by extension, whether the UK remains on track to meet the target of reaching net zero by 2050. The RIIO-ET3 period will be structurally different to the ET1 and ET2 periods:

- We are already progressing the ASTI projects allocated to NGET – a number of which we are delivering jointly with another transmission owner (TO). These projects will expand our network at an unprecedented rate.
- We are working with Ofgem to explore agreeing early needs case approval for a number of projects during ET2 so we can manage the supply chain such that work starts early in the ET3 period – many of these are driven by the unprecedented increase in connections which are required in England and Wales.
- The baseline plan we submit in December this year will be integrated and “load-led”, looking at our works holistically. This approach helps us to manage the challenge of getting access to the system to deliver the necessary work, whether additional capacity, asset maintenance or other non-load activity such as improving environmental outcomes.
- Further investments, which we will need to design and deliver during ET3, will be needed but cannot be scoped out in detail for our baseline plan submission in 2024. For example, this includes projects related to the transitional Centralised Strategic Network Plan (tCSNP2) that will be published later this year. The first full Centralised Strategic Network Plan (CSNP) in 2026 and changes to the connections arrangements will further change future investment requirements. This means that during the RIIO-ET3 period we expect to submit a number of reopeners either to confirm the costs of projects already agreed with Ofgem, or for completely new schemes which cannot be sufficiently scoped out at this point in time.

Taken together, this investment will deliver a major expansion of our network and overhaul and modernise our existing network so that it too can meet the increased demands being placed on the electricity system. We need to upgrade and rewire our existing network to create the capacity-rich super-grid of the future whilst maintaining today’s standards of safety, reliability and resilience for consumers. The scale of what we collectively need to deliver during the RIIO-ET3 price control is hugely ambitious and of critical importance.

All of this work must be undertaken in a socially responsible way that protects consumers and respects the environment and the communities that we work alongside. We want our work to have a positive and lasting legacy, where our own impact on the environment is minimised and we contribute to biodiversity net gain. In line with our vision to be at the heart of a clean, fair and affordable energy future we want to be a company that people are proud and want to work for and with, where they can see the positive contributions their roles make to consumers, society and the environment, and where they feel valued and recognised.

### **The challenges we are gearing up to tackle in order to deliver our RIIO-ET3 plan**

We know where we need to get to, but the path to get there will not be certain. As we set out in our response to Ofgem’s Future Systems and Network Regulation consultation (FSNR), we need to overcome three major challenges so we can deliver our investments in a way which maximises value for consumers:

1. **the unprecedented scale and pace of investment required**, as we embark on the most radical transformation of the grid seen since the 1950s against ever-tightening deadlines;
2. **the volatile and constrained supply chain**, as we compete with other countries and industries for limited supply chain capacity, resources and skills; and
3. **the need to attract unprecedented levels of debt and equity capital** to fund the investments required, as Ofgem acknowledged in the SSMC “*at a time where there is greater competition for investment and capital in the UK water and global regulated infrastructure sectors*”.

As we set out below, we are already taking steps to tackle these challenges. Our suggestions for the ET3 framework are designed to help us embed these actions and take them further so we can deliver a plan which maximises value for consumers through supporting the energy transition.

## 1. Unprecedented scale and pace of investment

### *There are numerous drivers for this investment*

The ASTI projects already require NGET to build over five times more onshore transmission than we have built in the last 30 years and around four times more new marine cables than our current offshore network by 2030.<sup>3</sup> Our analysis shows the need for significant additional new capacity out to 2035, beyond these ASTI projects, much of which will need to be progressed during RIIO-ET3.

Alongside the new network required, we will need to deliver significant volumes of upgrading and uprating of NGET's existing network. Our latest modelling suggests that c.35% of our existing transmission circuit asset base will require intervention (upgrade or replacement) by 2035 (not taking account of tCSNP2 works) 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. This level of work represents significantly more than RIIO-ET1 & ET2 combined had for strategic/incremental wider works.

We must also rise to the challenge of protecting security of supply from new and developing external threats including from the changing climate. As a result, the design of our new and upgraded network must embed appropriate levels of resilience different to those seen before. So far, climate adaptation has been largely focussed on flood defence risks and we need to evolve both our maturity, working with other networks and government, and broaden our focus as the threats from climate change evolve.

### *These drivers cannot be considered in isolation*

We have developed a network planning methodology, where we consider load and non-load drivers together, within the wider current and future regional context, to develop 'Site Strategies' and 'Circuit Strategies', rather than plan work against individual drivers and then combine them together into a plan. Ofgem has referred to these types of works in the SSMC as 'shared driver schemes'. This enables us to plan investments holistically, to minimise costs, maintain system security and expand the network as quickly as we possibly can. Thinking holistically supports our approach to building our network investment plan against the principle of '*do it once, do it right*'. It also allows us to take a regional approach, engaging stakeholders and explaining the totality of work we are proposing in their regions.

This approach will also help us manage system access – a finite resource that is subject to change in response to different events. Working with the National Energy System Operator (NESO), we will need to manage system access and shape how and when our network investments are executed. Taking a holistic approach enables us to optimise the use of the outages we have whilst maintaining reliability as we expand and upgrade the network. This way, we can design the optimum solution that will maximise overall value for consumers and make the best use of the outage and resources we have. In some instances, the availability of the system may mean prioritisation decisions need to be made over the work we choose to deliver in the available outage. This may require trade off decisions, for example, to manage the risk of ageing equipment on the network in order to connect customers and increase transmission capacity.

Alongside this, we also expect to need to use offline builds and new ways of working to support network availability and resilience as well as minimise constraint costs. In some cases, preferred approaches could lead to potential increases in our cost to deliver, but will maximise the overall value for consumers.

### *The overall investment plan will be impacted by an uncertain operating environment*

We are operating in an uncertain environment, with external factors which will influence and change our plans. We need to be able to respond rapidly, adapting our plans in ways which maximise benefits for consumers. Our proposals and "asks" for the regulatory framework are driven by this need to plan and work differently to the regulatory framework of the past.

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<sup>3</sup> 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 ASTI framework.

Changes in the industry are creating uncertainty and mean it will not be possible in our ET3 business plan submission to lock down in full detail all the investments we will need to deliver during the RIIO-ET3 price control. However, to manage in the external supply chain, we consider the framework needs mechanisms for us to agree a needs case with Ofgem as part of the ET3 baseline or a reopener, with cost assessment/allowance setting to follow. This approach would replicate the principles behind ASTI. Examples of the uncertainty which could affect our investment plan include:

- **The impact of centralised planning:** we support the NESO's role in strategic network planning. However, the first Strategic Spatial Energy Plan (SSEP) and CSNP will not be published before we finalise our RIIO-ET3 business plan for submission in December 2024. Equally, the NESO will take on its role as Regional Energy Strategic Planner (RESP) after this time. We will work closely with the NESO as we develop and finalise our plans to reduce the chance of inconsistency or misalignment with the SSEP and CSNP when they are published. It is important that we can progress our investments before the SSEP and CSNP are available to avoid delays in delivery which could put the associated consumer benefits at risk.

The role of the network companies, including TOs, in the SSEP, CSNP and RESP processes is yet to be defined meaning we do not know what resources, new tooling, processes and capabilities we will need to put in place to support the NESO in its whole-system planning role. We consider it would be prudent to include an appropriate re-opener to allow the TOs to support the NESO in its whole-system planning role, as the relevant requirements become clearer, as noted below.

- **The oversubscribed connections pipeline and ongoing reform to the connections process:** NGET currently faces a connection pipeline of c.382GW while the ESO's 2023 Future Energy Scenario 'Leading the Way' only requires 45GW to connect during the ET3 period. The pipeline continues to grow, with particular pressure in England and Wales, affecting NGET more than other TOs. The connections arrangements are being reformed and will continue to evolve. This will further affect how our contracted customer background evolves. Whilst reform creates some additional uncertainty of which customers will connect and when, we know that not all projects in the pipeline will be required for a net zero power system. We have therefore developed a consistent and repeatable methodology to assess the confidence we have in each contracted customer connection project proceeding. Using this approach will enable us to identify the optimum investments – including cost-effective anticipatory investments – that will deliver a connection-ready network that meets the needs of both generation and demand customers. This approach will support accelerated connections and provide greater levels of flexibility going forward.
- **The role of competition:** although Ofgem noted in the SSMC that it expects a large majority of projects will continue to be designed and procured by the existing TOs during RIIO-ET3, competition will be a feature of the CSNP process. It will be important that the projects that will potentially benefit from competition are identified as early as possible in the CSNP process so that the existing TOs are aware of the implications for their own network plans and investments.
- **Broader industry changes, such as those proposed in the government's Transmission Acceleration Action Plan:** We will also be reliant on broader industry changes, that are not directly in our control, such as those as set out in the government's Transmission Acceleration Action Plan. We welcome the recognition and focus on ways in which delivery of transmission infrastructure can be accelerated, but the outcomes of all of the recommendations are unlikely to be known or fully implemented when we submit our ET3 business plan in December.

### **Our response to uncertainty is to focus our ET3 baseline on high option value investments and build flexibility into the investment plan**

Those investments we are including in our RIIO-ET3 baseline business plan provide high option value and increased confidence in whole life decisions, allowing us to manage these uncertainties and maintain the required scale and pace of investment. However, the evolving nature of these areas means that uncertainty mechanisms and flexibility within the framework will continue to play a central role in RIIO-ET3. It is important that these mechanisms are discussed as early as possible to ensure all parties understand the operation of such mechanisms and these can be adequately included in the licence.

Flexibility will also be a key feature of how we approach our asset health work. As set out above, there will be a greater interaction between load and non-load related work for ET3 because of the need to take a more holistic approach to how we manage the unprecedented workload around challenges such as securing system access. For example, individual asset health interventions may end up being brought forward and folded into a holistic solution for a substation because of the weight of drivers at that site, or the challenge of getting system access at the same site in the future, to ensure we *'do it once, do it right'*. Expecting networks to have a detailed plan of every asset intervention they will do during the five-year period and setting detailed and prescriptive price control deliverables in 2025 against those plans would prevent us from responding to events which cannot be known at this point in time. This would result in higher costs and less value being delivered for consumers.

### ***Investment is also needed in the operation of the network***

It is not just the physical network infrastructure – both new and upgraded – in which we need to invest. Our operational systems and capabilities will also be critical to delivering a safe, reliable and resilient system. All of our critical network activities are enabled by our control system, control room facilities and other Critical National Infrastructure (CNI) facilities (e.g., operational telephony) to deliver the level of security and resilience required for critical grid operations. As the Electricity System Operator (ESO) transitions into the NESO and becomes a public corporation, we will need to fully separate and remove interdependencies between NGET and the NESO.

As the transmission system grows physically it is also increasing in its complexity. This has far-reaching impacts for the amount of work we must deliver, the type and age of assets we need to operate, the inherent complexity in the power system that needs to be managed and the capability growth (both people and digital tools) that underpins that.

In parallel, the external threat landscape will continually evolve, and we need to move with it to mitigate potential cyber and security risks and mitigate against the risk of climate change as we grow the network.

### ***We also need to invest in our own transformation so we can work differently to deliver at the required pace***

To keep pace with the investments required in our network and systems, investment in our workforce, skills and capabilities will also be required at a level not seen in recent price controls. Before and during the ET3 period we will need to recruit and train a new workforce and adopt new ways of working, enabled by investments in digital. We will need to embrace innovative new technologies to enable us to increase the pace of delivery required by our plan and the stretch needed to meet the government's objectives.

We have already started on this transition, changing the way we work as we drive forward the ASTI projects. We have set up a new business unit that is focussed on progressing and delivering the ASTI projects, including establishing an enterprise model with the supply chain for a number of the projects to help secure the capacity needed. We are integrating more digital tools to help streamline and speed up processes. For example, using visualisation software in the optioneering, planning and route selection phase, to look at options and alternatives, cost benefit analysis and design iterations, which helps shorten the concept engineering stage. An integrated modelling and data platform is also being developed to create data structures, access governance and processes to enable documents and designs to be shared with our partners to model and scenario-plan the construction phase to see where construction time can be shortened and we can construct in parallel. These new ways of working and lessons learned will be applied across our whole RIIO-ET3 business plan.

From a workforce perspective, we are putting in place plans and strategies focussed on training and upskilling existing workers, recruiting at pace for roles and capabilities that are critical, as well as developing the requisite pipeline of diverse talent and ensuring we create an equitable and inclusive work environment and organisation where people can thrive. This includes:

- a regional skills support programme – to identify skills gaps in local communities in regions across England and Wales, and develop a 'STEM' strategy (e.g., by supporting other organisations) for long-term skills development in the region;

- a technical training strategy – to upgrade our training facilities to reflect the increased amount of training and skills development needed;
- a future of work strategy – that reflects changing working patterns and diversified locations for recruitment and work; and
- a diversity, equity and inclusion strategy – that enables us to attract and retain a diverse workforce from a talent pool available across the country, but also ensure we are an inclusive employer with equity in our processes and decision-making.

The regulatory framework should include mechanisms which allow TOs to build the costs of these actions into their business plans, as part of ensuring we have deliverable plans which support the energy transition. This includes costs which may have been incurred before the start of the ET3 period.

Alongside building and training our own workforce, we are also working closely with our supply chain who also face a shortage of skilled workers and resources. Expanding skills capacity will be an industry-wide challenge which would benefit from collaboration between TOs, supply chain companies with the support of Government and Ofgem. We consider it would be prudent to include a reopener in the ET3 framework which provides the flexibility to allow potential future actions in this area, e.g. industry-wide training schemes, should a decision be made on them being of value to consumers in supporting the energy transition.

Together, these requirements represent an unprecedented scale of investment which also needs to be delivered at pace to ensure meaningful progress towards net zero targets, but also to keep pace with the evolving threats to the network and the growing demands being placed on the network.

## **2. Supply chain challenges**

The current supply chain environment is fundamentally different to previous price controls. A growing global workbook of competing demand for work to enable a fast and equitable transition to net zero is set against supply chain disruptions which are compounded by insufficient capacity across equipment and skills in the market. This imbalance between supply and demand is resulting in a shift to a 'sellers' market' where suppliers are reluctant to participate in tender processes and are becoming increasingly selective and risk averse. We are evolving our approach to procurement and contracting, including taking on additional risk so we are able to respond to this changing environment. Our proposals for the SSMC have been identified to help us develop these approaches further, so we can deliver a plan which maximises value for consumers through supporting the energy transition.

The macro environment driven by socio economic and political factors such as post-Brexit impacts and the war in Ukraine are leading to increasing and fluctuating costs of equipment, raw materials, energy prices and hyper-inflation. The UK has large scale shortages of strategic and skilled groups, including Overhead Line workers, cable jointers, commissioning, project management and design assurance resources. These shortages are compounded by, and expected to worsen as a result of, many highly skilled staff reaching retirement age and a constrained future talent pipeline – with 5-10 year training for highly skilled engineering roles.

The macro environment has created pressure across services and equipment in three major asset classes; Overhead Lines (OHLs), substations and cabling. Equipment lead times have doubled in the last two years, with many average lead times now spanning more than two years. In the most severe cases, lead times are presenting as more than seven years for some European incumbent HVDC cable suppliers.

Due to the geopolitical environment and lack of factory slots, increasing lead times are driving volatile price increases across major asset classes. There has been a noticeable step change in rising costs over the last four years with HVAC cable prices increasing 118% and HVDC cable prices increasing 400%. Prices are volatile in nature at time of purchase, with prices swinging an average of +/-30% from one buy to the next in some asset classes.

This supply/demand imbalance is resulting in a market which is less client powered / demand driven with healthy competition between suppliers to a much more constrained seller's market. Fewer suppliers are participating in tender processes, and those entering into contract will not accept any contract risk, meaning we are having to take on additional risk due to the supply chain volatility. Spot



and single tenders are no longer appealing to suppliers as these processes take time and money to enter into, with no guarantee for suppliers in ultimately securing a contract. With lots of contracts on offer, the opportunity cost to the supply chain of such processes is high. Suppliers are instead stating their preference for direct allocation and award, or 'best for task' allocation. They are also pushing for contract terms and conditions to be amended to redistribute risk associated with supply chain macro issues to network companies.

We are focussed on the implications of this environment for consumers and our responsibilities to be efficient and maximise the overall value we generate for consumers. This includes taking a "whole consumer bill" perspective. This means looking at the costs we can save by not delaying projects (e.g. by reducing constraint costs or accelerating connections) as well as the direct costs associated of this when proposing investments.

We are evolving our supply chain strategy so in this environment we are still able to drive value for money in situations where we have only single bidders on major projects. Alongside the ASTI enterprise model, we are deploying strategies to mitigate these challenges across our portfolio in the immediate and longer term. This includes maximising the value of existing frameworks by providing greater visibility of projects to build competitive tension, and maintaining robust supplier relationships at multiple levels to drive innovation, performance management and optimisation across the project portfolio. We are also developing long term strategies across asset classes that combine the programme of work we need to deliver and the supply chain context that impacts the delivery of this programme. The strategies will comprise delivery and commercial models and our approach to engage the supply chain market, ultimately enabling portfolio allocation and the provision of long-term commitments to secure the supply chain.

### **3. Attracting the capital required**

An investable sector requires a financial package that delivers appropriate returns to investors. This is critical to attract the necessary capital for the RIIO-ET3 investments that will deliver meaningful progress towards the government's net zero targets and unlock the associated benefits for consumers, society and the economy. Crucially, Ofgem must recognise the impact of the macro environment transitioning from a 'lower for longer' to a 'higher for longer' interest rate environment, while at the same time ETOs face a need to invest unprecedented levels of capital during the RIIO-3 price control period. The 'Finance Executive Summary' which forms part of our overall SSMC response sets out this challenge and the requirements for the finance framework in more detail.

#### **Our view of a RIIO-ET3 framework that would help TOs to create value for consumers**

The FSNR Decision and SSMC are positive developments. We welcome Ofgem's thinking about a future regulatory framework that will support the energy transition. The introduction of ASTI is a practical example of new ways of thinking and constructive working between regulator and industry to accelerate delivery of net zero enabling infrastructure that will also lower consumer bills and improve energy security. The principles behind ASTI now need to be reflected through a number of specific changes across the whole RIIO-ET3 framework. By contrast, rolling forward an ET2 approach to the design of the framework would risk the energy transition and limit our ability to unlock the benefits for consumers.

The success of the regulatory framework can no longer be measured purely by its ability to deliver efficiency gains and a reliable system at least cost. The regulatory framework needs to enable and empower the network companies to deliver the ambitious levels of transformation required from them. Appropriate scrutiny and checks and balances will remain key, to ensure network companies are delivering efficiently, but the urgency with which we need to deliver meaningful progress in the transition to net zero and greater energy security has brought a new dimension into play.

Ensuring the framework enables the necessary scale and pace of delivery, incentivises the outcomes and actions that will unlock greatest overall value for consumers, society and the economy, sets fair and realistic allowances for the investments in a way that reflects the operating environment we face, and strikes a risk/reward balance that provides opportunity for returns at a level that will attract the requisite investment, will all be key components of a successful RIIO-ET3 framework. These core requirements for the framework centre around four elements:

1. **Early approval of investment need for all major strategic or complex projects, whether confirmed through tCSNP2/CSNP or TO plans** – we recognise the role the tCSNP2 and CSNP will play in providing the certainty over investment need for certain critical investments, and welcome the confirmation that this will not need to be revisited by Ofgem. However, there will be other investments on our network that will also play a critical role in delivering the capacity-rich super-grid of the future that will not be identified from the NESO's central plans; in particular projects to accelerate the provision of customer connections, given the size of the contracted background.
  - **The framework needs to provide mechanisms for all large or complex projects to receive prompt early needs case confirmation.** This would trigger automatic pre-construction funding and early-construction funding to support the pace of delivery required, by enabling optioneering, surveys, engagement, land purchases, supply chain commitment etc. before the project is ready for final project assessment. This could be through the major projects regime (for NESO-identified projects), through Final Determinations (where the needs case has been set out in our business plan submission), or through a split need then cost reopener (for large or more complex projects where final scope is uncertain but investment need is clear). We are keen to work with Ofgem to agree the level of evidence that would be required to support a 'needs case' assessment in order to trigger automatic PCF and ECF. This could be linked to us demonstrating our application of an agreed methodology or logic and/or projects being scrutinised by the ITA. We are working on developing more specific proposals to discuss with you for how this should work across different types of network investment to help inform SSMD.
  - **Streamlined approval processes are needed for large or complex projects which are developed by the TOs and are not included in the tCSNP2/CSNP.** There are likely to be large numbers of these projects. We are supportive of processes to streamline regulatory assessments, for example via batched assessments or by checking compliance with an investment methodology which has been endorsed by Ofgem or NESO. Appointing an ITA for these projects to provide ongoing scrutiny would also be welcome if it enables streamlined approval processes.
  - **Whether projects fall into the major projects regime should not be determined solely on a materiality threshold.** We do not think a financial threshold is the most appropriate factor to determine whether a project should fall into or out of the proposed major projects regime. Instead, we suggest this is determined using wider criteria such as project complexity, technology types, forecast consumer value, interaction with other projects. We are supportive of the ITA role which is at the core of the major projects regime, and this should be targeted at those projects where independent assurance is most valuable (e.g. projects involving complex technologies, which have significant consumer value attached or where there many interdependencies with other investments). As above, this could include the ITA engaging on significant projects not within scope of the major projects regime.
  - **An appropriate re-opener should be included to provide flexibility to support the development of new tooling, processes and capabilities if required for the TOs to support the NESO in its whole-system planning role.** The CSNP will help confirm need for many investments, but the process through which the CSNP will be developed and the input required from TOs is yet to be confirmed. The requirements on the TOs in terms of capabilities and resources may not be known with sufficient time to reflect in the ET3 business plan, and an appropriate re-opener will be required to ensure the critical inputs from the TOs can be properly funded.
  - **Volume drivers and UIOLI allowances are also needed in the framework to manage smaller and more predictable projects.** These will streamline the regulatory framework providing automatic changes in allowances to manage uncertainty in the overall volume of investments needed and for low materiality investments.
  - **Cost-effective anticipatory investment will be a feature of many investments and needs to be supported in the framework.** Our planned investments need to take account of the



demands on the system today as well as those anticipated in the future, in line with our desire to *'do it once, do it right'*. The route to confirming the needs case should support this approach.

- **Regulatory outputs (e.g., PCDs) are set at a level which enables TOs to manage known and unknown changes.** Outputs need to be less prescriptive to allow TOs the flexibility required to manage work around system access and supply chain availability, and take the portfolio approach required for network investment.

2. **Cost assessment methodology that is fit for purpose and reflects the realities of the supply chain environment and the period of growth we are entering** – the ET2 cost assessment process for load and non-load capex cost assessment was not, and is not now, fit for purpose. We have serious concerns should Ofgem retain the ET2 assessment process. Substantial improvements and simplifications are necessary and can be achieved through alternative approaches. Historical costs are in many areas not reflective of the high and volatile prices which TOs will experience during the ET3 period, and this needs to be reflected in the assessment framework (for example, models should not simply permit the lower of historical values and ET3 submitted costs, as the former may no longer be applicable in the current market environment).

Please note that we intend to submit a short supplementary paper in the coming days gives a holistic view of the interlinked cost assessment issues that are emerging from Ofgem Working Groups and bilateral discussions, and which (due to the timing of these processes) are not fully captured in Ofgem's SSMC. We are concerned that Ofgem's SSMC process may result in individual questions being considered and decided upon without proper consideration of how they interact with evolving proposals coming through other channels; specifically, the interlinkages between the necessity of TOs making assumptions and allocations (e.g. for splitting out Indirects in a way that is not yet defined, or restating RIIO-ET1 data when definitions have changed and we will not have the input data required) and how this could impact Direct capex cost assessment and regression of Indirect costs. This information should be considered as part of our SSMC response.

Our key views are set out below:

- **The Ofgem Project Assessment Model (PAM) is flawed and should not be used for RIIO-ET3.** The PAM was unable to be applied to NGET in ET2 and this remains the case for ET3. There is a lack of comparable and statistically valid data available to undertake such an assessment. Any requirement on TOs to reconstruct existing data on a different basis would introduce a range of unrecorded approximations and assumptions which may be inconsistent between TOs, rendering the data unsuitable for benchmarking.

Moreover, the methodology of PAM is flawed to such an extent that even an efficient company could not recover efficient cost levels. For example:

- Always choosing the lower of ET1 costs or ET2 submitted costs when setting allowances,
  - Applying a mechanistic adjustment of allowances in any project where submitted costs were higher than the benchmark, but allowing only submitted costs where such costs were below the benchmark.
- **A “stratified random sampling approach” provides a more robust way than the PAM to set costs for investments in TO baseline plans.** This involves splitting the load and non-load projects into categories (the “stratification”) based on the main asset category driver for each project, for example overhead line projects, cables projects, transformer replacements. Within each category, Ofgem could then undertake a sampling exercise with the number of samples from each category reflecting the proportion of that category to the total cost. Ofgem should then undertake an engineering assessment of the projects sampled to understand the scope of the project and determine whether the costs submitted by the TO are appropriate, and if not, to determine what an efficient allowance to deliver the scope of works being assessed would be. The efficient allowance can then be compared with the submitted costs from the TO. An average percentage allowance can then be calculated from all the sampled

projects in that asset category, and the average deduction or premium then applied to all remaining non-sampled projects within the asset category.

- **Project-specific assessments should be undertaken at a gross capex basis and processes aligned across all reopeners.** The ASTI project assessment processes are working well and the lessons should be applied to all reopeners. In particular, gross capex assessments should be undertaken in all reopeners, to focus on the overall cost to consumers and avoid distortions and unintended consequences in setting allowances. The assessment of efficient costs should be in line with Ofgem's proposed approach to the ASTI assessment, where Ofgem can only re-open or challenge costs that it can show are 'demonstrably inefficient or wasteful expenditure' (DIWE).
- **Ofgem should explore ways to reduce the burdens of cost assessment processes given reopener submissions are likely to be a prominent feature of the RIIO-ET3 price control.** In some cases, where Ofgem are reviewing multiple projects of a similar nature, it could consider a stratified random sampling approach to reduce the resource burdens. We are supportive of an approach where methodologies are endorsed (by Ofgem or the NESO) and then cost assessment carried out by way of checking adherence to the agreed methodology. An ITA could be part of this process.
- **"Very closely associated"/ "Capitalised" Closely Associated Indirects (CAI), including both National Grid and Contractor indirect costs, should be assessed alongside the direct costs of a project as part of a gross Capex assessment.** This enables benchmarking of capex projects as a whole and delivers the most efficient price for the consumer, allowing TOs to contract, sub-contract and deliver projects with different direct/indirect structures that are best suited to each project. This approach incentivises companies to deliver projects at the lowest cost to consumer rather than be influenced by the allowance setting process to have larger / smaller indirect structures.

The alternative is not appropriate for a number of reasons. First, there is no simple correlation between annual capex and headcount or a single 'efficient' percentage of indirect spend that can be applied to projects. The mix and development stage of the numerous projects and the operating models of different organisations will influence the split. Second, benchmarking at a disaggregated level will not deliver best value for consumers. The appropriate level to benchmark is the overall delivered unit cost – being agnostic to definitional interpretation differences and approach to supply chain. Third, the data to support the process is not available. The definitions being considered by Ofgem are still being developed. In addition, historical data for these categories of cost is not available and the suggestion that companies could retrospectively apply allocation percentages to historical data which does not reflect the contracts and associated risks does not provide sufficiently robust data on which to perform regression modelling.
- **If capitalised indirects (CAI) are assessed as capex, this leaves TOs' "Opex" CAI and Business Support Costs as remaining indirect costs which can be subjected to econometric model.** Depending on how RIIO-ET3 re-openers and UMs are to be funded, there may be a need for a reduced opex escalator in RIIO-ET3 focussed on scaling up these categories of indirect opex alongside the growth of the network. Our proposed approach is the combination of the gross capex approach explained above and then a formulaic automatic volume driver based on the additional work required in addition to baseline allowances for the remainder of CAI ("Opex" CAI) and BSC. This would simplify the process as TOs' Opex CAI and Business Support Costs are categories where costs are more stable and a representative percentage could be calculated, based off historical run rates.

The opex escalator (OE) must be revised for electricity transmission. It is currently not fit for purpose and a change in approach is needed for RIIO-ET3. The root cause of this issue is that the OE established in RIIO-ET2 is being interpreted by Ofgem as providing funding for contractor 'indirects'. This is a mathematical error: the TO data on which Ofgem carried out regression analysis for the opex escalator did not include contractor indirect costs. Ofgem's application of the opex escalator in recent re-opener decisions has led to systematic

underfunding (a 15-20% funding gap). We welcome the positive steps by Ofgem to introduce a true-up for affected ET2 reopeners and are working to agree a mutually acceptable approach. This fundamentally important issue must be corrected for RIIO-ET3.

- **There are a number of areas where the ET2 approach is an appropriate starting place for evolving the arrangements so they work in the ET3 environment.** This includes amendments to the Modern Equivalent Asset Valuation (MEAV) to become a Network Scaler Measure, undertaking individual cost assessments for physical and cyber investments and large projects, econometric benchmarking for “not so closely associated” CAI and Business Support Costs, updating the methodologies for Real Price Effects (RPEs) to take account of market volatility in supply chain costs, updating cost assessment processes in reopeners to allow for costs to be reset if supplier costs change above a certain amount after the Project Assessment stage, and other possible changes to allow innovative supply chain strategies such as the enterprise model.

**3. Incentives will remain an important tool to unlock value for consumers and should be focussed on the outcomes, behaviours and investments that will drive maximum value for consumers.** Incentive-based regulation is a key principle which we support and believe should continue at the core of ET3. In particular, there is a role for non-totex incentives to focus TOs on actions which may incur costs but delivers value for customers and consumers. We consider the current package of incentives in the RIIO-ET2 framework is largely focussed on the right areas, however as identified in the SSMC, there are a number of important changes or additions to the current package that should be reflected in the final framework for RIIO-ET3:

- **The Business Plan Incentive (BPI) needs to focus more on incentivising complete and deliverable plans that reflect the ambitious nature of what needs to be delivered during ET3 and less on cost ambition.** Given the challenging supply chain environment, a BPI which focuses on cost ambition will not encourage the right outcome for consumers. Instead, the BPI should focus on incentivising networks to submit complete and deliverable plans which will be of more value to consumers by providing confidence in the network's ability to meet the desired outcomes rather than seeking to set the lowest possible costs.

We have proposed a two-stage approach to the BPI. First, an assessment of ‘completeness’, which would be a penalty-only element based on level of (non-) compliance with minimum criteria. It is important that clear and objective guidance is provided on the minimum requirements expected from the plan, as it is not in consumers’ interests for plans not meeting Ofgem’s minimum requirements to be submitted inadvertently and penalised. Second, a reward-only assessment of ‘ambition’. Ofgem’s assessment could include areas such as: environmental ambition and biodiversity net gain; workforce strategy; digitalisation; option value approach; delivery models and procurement strategy. Given the subjective nature of such an assessment, it should be a reward-only component of the BPI.

- **The approach to setting TIM will need to change:** the supply chain challenges outlined above means our ability to seek efficiencies through our supply chain is likely to be more limited than before, reducing the scope for us to make and share savings with consumers on a well justified and efficient investment plan. The separation of the assessment of costs into high and lower confidence in RIIO-ET2 was not well understood in advance of submitting plans. This weakened the strength of the incentive. However, even with additional guidance, we have concerns around the ability to differentiate between high and lower confidence costs when costs are significantly less predictable based on looking at past trends and will be more volatile than has been experienced in the past. Therefore, the option to set a sharing factor independent of the cost assessment process should be retained until an approach to cost assessment is finalised and understood by all parties.

Alongside this, there is an increasing sense of urgency with which the energy transition needs to be progressed, not only to support the government’s net zero targets and mitigate the worst impacts of climate change, but also to provide greater energy security and affordability for British consumers. It will often be in consumers’ interests for networks to spend more in order to accelerate or deliver on time, than to focus on minimising the cost of delivery. Therefore,

while TIM will remain an important incentive in RIIO-ET3 and will continue to provide an incentive on networks to find efficiencies, drive innovation, and minimise overspends, we consider a greater focus on non-totex incentives is needed than in previous transmission price controls to maximise consumer value.

- **Incentives for customer connections needs a new approach:** the current incentives on customer connections, which focus on timeliness of providing the connection offer and customer satisfaction survey results, are not reflective of all of the challenging connection dynamics currently in play. They do not help enable the speed of connections and strategic approach to network build that is required to bring more renewables onto the system and meet the increasing demand for electrification in a timely manner. In turn, the time taken to physically connect customers to the network contributes to the high constraint costs reflected in consumer bills.

We welcome Ofgem's focus on developing new incentives in this area and are committed to working together to design appropriate incentive(s) that encourages the right behaviours in the interests of consumers by facilitating the more strategic approach required to manage connections and connect customers in a timely way, without inadvertently exacerbating the current pipeline and associated constraint costs or resulting in networks prioritising connections which do not drive overall value for consumers. This could include incentivising networks on the proportion of connection options (capacity) that are utilised within a specified timeframe or reducing the average difference between customers' requested connections date and the date delivered. The design of new incentives will also need to take account of the ongoing reforms to the process by which customers apply to connect to or use the electricity transmission system in Great Britain.

- **Whole-system incentives will play an important role in supporting the critical engagement needed between SO/TOs and TOs/DNOs:** the SO:TO incentive will become even more important during RIIO-ET3 given current and forecast constraint costs and the significant level of system access that will be required to deliver the unprecedented scale of investment. We therefore support the proposal to retain this incentive. We also agree with Ofgem's proposal to introduce an incentive to encourage use of the coordinated adjustment mechanism (CAM) which will help facilitate greater cooperation between network companies to reallocate works or find alternative solutions that drive better overall value for consumers.
- **There may be a case for additional incentives to those in the SSMC as we conclude the development and testing of the ET3 investment plan.** We are considering where it would be in consumers' interest to incentivise TOs to go further to optimise the network design options in strategic network plans like tCSNP2 to reduce costs and/or improve deliverability. Given the scale of potential investment required, the potential for TOs to identify savings through the detailed design of tCSNP2 projects proposed by the NESO could result in significant benefit for consumers and our collaborative work with NESO has already demonstrated this. Similarly, the development of the CSNP process may also create an opportunity for further collaboration between TOs and the NESO. Given that the mechanics of the CSNP process are yet to be determined, a potential incentive would encourage greater collaboration over and above relevant licence obligations, enabling a robust and effective CSNP output.

**4. Financial framework that ensures the investability of the TOs to deliver their ambitious plans** – Our separate Finance Executive Summary and our responses to the questions raised in the SSMC Finance Annex set out our detailed positions on the financial proposals for the RIIO-ET3 framework. Our key messages are:

- Macroeconomic conditions have changed significantly since the RIIO-ET2 Final Determination.
- There is a marked increase in the scale of investment and levels of risk now expected for electricity transmission owners in RIIO-ET3.
- It is critical that the financial package enables the NGET notional company to attract the significant volumes of new capital that will be required in order to deliver the consumer and societal benefits associated with the energy transition.

- We welcome the inclusion of an investability assessment, and propose in our response a key 'test' of investability that the RIIO-ET3 financial package must pass.
- Cross-checks based on market evidence (including the observed yields on hybrid bonds) demonstrate that a simple roll forward of the RIIO-ET2 cost of equity (CoE) methodologies will not result in an adequate range for the cost of equity or an investable proposition.
- We set out how Ofgem can make methodological choices to support investability using the UK Regulators Network (UKRN) guidance.
- At this early stage of the RIIO-ET3 process, the overall suite of available evidence points towards a range for the allowed cost of equity in the region of 5.8%-6.9%<sup>4</sup> (60% notional gearing). We are keen to engage with Ofgem to update this estimate as the evidence develops over the period to final determinations.
- For cost of debt, we support the use of a RAV weighted indexation approach and can support inflation options 1 and 2 that fully address the leverage effect.
- To alleviate financeability concerns inherent in periods of heightened capital outlay, cash measures will need to be reviewed in addition to ensuring returns are attractive

We welcome continued engagement with Ofgem as the ET3 framework is developed and ahead of the SSMC decision later this year.

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<sup>4</sup> Frontier Economics, Cost of equity for NGET at RIIO-3, March 2024, Table 2. Risk free rate as per the Oxera RIIO-3 Cost of Equity Report (dated 23 February 2024) prepared for the ENA. The cut off date for the analysis is 20 December 2023