

National Grid SSMC Q&A Response Documents

Our response to each of the specific questions raised in the SSMC is set out in a series of documents listed below. We have drafted our 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.

Our Q&A Response Document is broken down into the following parts, tracking the different sets of questions:

- Part A: Overview Document Questions
- Part B: ET Annex Questions
- Part C: Finance Annex Questions
- Part D: GD Annex Questions

Note, we have not answered any of the questions in the GT Annex.

Part A: Overview Document Questions

Future of Gas

We have not responded to questions OVQ1 to OVQ6 (inclusive).

Role of Scenarios and Planning Pathways

Key messages:

- We agree with the proposed approach to use the FES framework and the Leading the Way scenario for ET. Use of this scenario should be complemented with commercial insights on connections-driven demand.
- We do not support the proposal to update plans for the FES 2024 release. We do not expect significant change between FES 2023 and 2024, therefore consider the FES 2023 will in effect be representative of the FES 2024 scenarios for the RIIO-ET3 period and therefore the opportunity cost of updating the underlying assumptions for the plan would outweigh any benefits.

OVQ7. Do you agree with the proposal to use the FES framework for selecting the RIIO-3 scenarios?

We agree with the proposal to use the FES framework for selecting the RIIO-3 scenarios.

This will drive consistency across network companies in some core inputs required in our planning approach. They are industry recognised and used for a number of existing industry processes related to RIIO-ET3 plans e.g. the Network Options Assessment (NOA) and transitional Centralised Strategic Network Plan (tCSNP2). The FES scenarios also have sufficient granularity to support development of our investment plan.

Using scenarios from the FES framework is preferred to developing a new or alternative scenario. Doing so would risk inconsistency in core inputs to detailed planning approaches across network companies and be more time-consuming to develop and apply with no conceivable benefit and therefore would not be in consumers' interests.

Although we support using the FES framework, we highlight that no scenario will accurately predict the future with complete certainty, and there will be more uncertainty in the RIIO-ET3 period than has previously been the case (e.g. the impact of connections reform is not clear and the tCSNP2 to be published during the ET2 period is likely to have an impact on our investment plans). Therefore, uncertainty mechanisms need to remain an essential part of the regulatory framework to manage the uncertainties inherent in basing investment plans on a forecast.

OVQ8. Do you agree with the proposal to use FES Leading the Way as the planning scenario for ET in RIIO-3?

We agree with using the FES Leading the Way scenario as the basis for the planning scenario for ET in RIIO-ET3. We have already selected the Leading the Way scenario as the basis for our plan since it is consistent with the scale and pace of investment we will need to deliver to support the government's targets, including delivering a net zero economy by 2050.

The Leading the Way scenario represents a balanced pathway to net zero using a range of supply- and demand-side technologies. Choosing a less ambitious scenario than Leading the Way could make the net zero target, and the ambition needed to reach this point by 2050, harder or more costly to meet.

In planning our investment to manage the RIIO-ET3 demand connections we will use a combination of FES information and commercial insight, based on the contracted background for connections to the transmission system. There has been a significant increase in commercial demand, e.g. from data centres and rail electrification, that is not captured in the FES scenario. Where we use additional information, informed by contracted information and government requirements, we will evidence this in our plan.

OVQ9. Do you agree with the proposal to use two FES planning pathways for the gas networks, ie Leading the Way and Falling Short as the additional common conservative scenario?

We do not have a view on whether the gas networks should be asked to plan to two FES scenarios for RIIO-3, but we understand the rationale as to why gas networks might use an additional planning scenario.

A decision on the gas planning scenario approach should have no impact on Ofgem's proposal to use the FES Leading the Way scenario for RIIO-ET3 planning purposes.

OVQ10. Is Falling Short the most appropriate common conservative planning scenario to be used for the gas networks? Or is a common gas network developed scenario more appropriate?

We have no comments to make on the most appropriate planning scenario for the gas networks. Electricity Transmission Owners should use the FES Leading the Way scenario regardless of the decision for gas network planning.

OVQ11. Is it feasible for all network companies to initially plan against FES 2023 before updating business plans in line with FES 2024, as proposed?

Our engagement with the National Energy System Operator (NESO) indicates that the changes it is making to its FES modelling approach would have little or no impact on the outputs of the Leading the Way scenario for the years to 2030, the last full year of the RIIO-ET3 price control period. Updating to FES 2024 is therefore likely to have limited impact on the RIIO-ET3 investment plan.

Therefore, we consider that the benefits of updating business plans for FES 2024 would be limited but that there are opportunity costs, in terms of managing the additional time required and the sequencing of activity to develop the business plan for December. This could prevent network companies refining their plans (for example in relation to deliverability) and subsequently engaging with consumers, network customers and stakeholders on any revised plan. We therefore do not support the proposal.

We consider that a set of flexible uncertainty mechanisms, as proposed as part of the regulatory framework, can appropriately manage the inherent uncertainty in what will need to be delivered over the price control period. Future energy pathways are inherently uncertain and we consider that updating the plans for FES 2024 would have limited impact on reducing this uncertainty but would create costs as set out above.

Our view is informed by our assessment of: 1) the balance of advantages and disadvantages given the anticipated similarity between FES 2023 and 2024 in the near term; and 2) the feasibility of updating our plan. More generally, we recommend that in developing the new approach to strategic planning (through the Strategic Spatial Energy Plan (SSEP) and Centralised Strategic Network Plan (CSNP) consideration is given to when critical inputs to business planning processes are needed to feed into the price review process.

In any case, no scenario will accurately predict the future with complete certainty. In our view, the limited improvements the FES 2024 update may make to the scenario for the years to 2030 would not outweigh the costs or complexity of assessing the impact of any changes on our plans and updating them accordingly. We are already consulting with stakeholders on our plan and consider this additional layer of change and developing the processes needed to manage it will not deliver benefits to our stakeholders. We are focussed on ensuring that our plan is complete, high quality and meets our stakeholders' and our consumers' interests. Diverting attention from this would be not be in consumers' or wider stakeholders' interests.

Outputs and Incentives

Key messages:

- The PCD framework remains a valuable part of the regulatory framework but it needs to evolve to reduce the level of prescription and allow network companies to operate portfolios of investment and manage the uncertainty which will be prevalent in the environment going forward.
- ODIs should continue to be targeted at maintaining and improving services that consumers value the most, offering opportunities for network companies to earn a reward where they provide additional benefit.
- Development and dissemination of our proposed plan with stakeholders may drive the development of further incentives in consumers' interests. Therefore, at this stage, Ofgem should not preclude further proposals being raised in the business plan submissions.

OVQ12. Do you agree with our proposed approach on the role, scope and format of PCDs?

We support Ofgem's proposal to retain both evaluative and mechanistic price control deliverables (PCDs) provided their application and the parameters in which they are used are proportionate and appropriate to the circumstances. They need to be set with less prescription than in the RIIO-ET2 framework, reflecting the different operating environment and the level of uncertainty which networks will need to manage during the RIIO-ET3 period. Setting detailed and prescriptive PCDs in 2025 out to 2031 would prevent networks from responding to events which cannot be known now and result in higher costs and less value being delivered for consumers.

For example, given the scale of investments needed, we will need to manage system access carefully, working with the NESO. It will be a scarce resource that is subject to change in response to external events not within our control. Our investment plan will be based on the principle of '*do it once, do it right*', optimising the use of the outages we have whilst maintaining reliability as we expand the network. System access will change so we need to be able to respond by flexing our plans to make the most of opportunities which may arrive and not be constrained by prescriptive outputs set back in 2025.

Changes to the approach to outputs is also needed so we can respond to the constrained supply chain environment. We are seeing changing appetite from the supply chain to participate in tenders and to make commitments to smaller projects. Instead, suppliers are asking for earlier and larger commitments to secure capacity. Ofgem has recognised the need for us to operate on a portfolio basis through the design of the ASTI framework. The approach to outputs and PCDs needs to allow us to adopt such a portfolio approach across other activities where required. This will help support us to secure the supply chain capacity we need in the timeframes required.

We agree that PCDs are an area where there is significant opportunity to reduce regulatory reporting burdens and we agree with the description of what PCDs should be used for in paragraph 6.39 of the SSMC Overview Document, namely that PCDs should capture outputs that:

- directly contribute to RIIO-3 outcomes or need to be delivered in line with government legislation, standards or guidance;
- are material;
- can be defined by clear deliverables, and delivery dates; and/or
- will be delivered over multiple price controls.

The remainder of our response to this question considers points specific to each of mechanistic and evaluative PCDs, before concluding with comments on the general approach to PCDs.

Mechanistic PCDs

As described above, given the scale and volume of work required and the levels of uncertainty during the RIIO-ET3 period it will be important that TOs can adapt and flex work plans to respond to changing and emerging priorities, to manage constraints (such as system access and resource availability) and to focus efforts on the interventions of most value to consumers. It is not possible to set out in advance at a level of detail the specific investments that need to happen and the order in which they happen which will maximise benefits for consumers. The framework will add most value for consumers if it provides flexibility in response to stakeholder requirements.

As such, the design of PCDs must allow for this flexibility and where appropriate this should happen in a mechanistic way to reduce regulatory burden. PCDs must be able to flex to allow for the optimal approach to be funded. This includes adjusting allowances upwards because a more optimal approach has been identified (for

example, one which reduces outages or provides additional connections capacity), as opposed to only adjusting allowances downward where fewer units are delivered. This could avoid the need to add a re-opener into the regulatory framework.

This approach would ensure that consumers are not disadvantaged where it is in their interests for network companies to deliver more than was originally expected. For example, an extended outage at a site could provide an opportunity to bring forward replacement of bay assets during RIIO-ET3 that were due for replacement in the RIIO-ET4 period. Bringing this work forward in RIIO-ET3 would provide efficiencies that would be passed on to consumers and increase outage availability in the ET4 period when we will still be working hard on the path to net zero.

Our proposal can be implemented with appropriate checks and balances, for example by allowing PCDs and associated revenues to change up to a certain level, or apply to assets that meet certain criteria beyond which the network company would need to go back to Ofgem to seek approval of additional outputs and allowances.

As explained above, mechanistic PCD outputs should not be based on a list of named assets because there is consumer value in network companies being able to flex their plans to deliver outcomes more efficiently, so they can respond to changes in the external environment (e.g. unexpected outages from generators which necessitate changing of the plan). As an example of the changes required, in ET2 the mechanistic PCD in Special Condition 3.22 for instrument transformer replacement or decommissioning is partly linked to specific lists of individually named assets which means we are incentivised to deliver those rather than prioritising other works that would be of greater benefit to consumers.

We agree that mechanistic PCDs are more appropriate for work that is defined by:

- volume or numbers of units of deliverables;
- activities that are typically repeatable; and
- where allowances can be set by reference to unit costs.

These qualities lend themselves to a more automated/mechanistic approach which will help streamline the price control and reduce ongoing regulatory burden, to ensure time and resource is spent on delivery.

Evaluative PCDs

Evaluative PCDs are appropriate where the exact work delivered has the potential to vary from the initial company submission either in cost or in output, beyond just volume changes, and also allow adjustments for late delivery.

We welcome the proposal that companies should not be penalised for a delay in delivery or non-delivery of PCDs where the reasons for this are outside of the company's control. There will also be circumstances where we want to change the delivery date for work associated with a PCD to achieve a better outcome, e.g. by prioritising delivery of other work which results in a net benefit to consumers. For example, we may need to prioritise work which, due to a change of circumstances, would cause significant constraint costs if not delivered, or adjust our plan based on unexpected system access meaning work could be delivered at a lower overall cost for consumers. If this can be justified as being in consumers' interests, companies should not be penalised for taking the right decision. It is important that the framework enables this kind of flexibility, with appropriate ex-post assessment where the criteria for such an assessment are proportionate, clearly understood and objective. Without change, the framework would result in less value for consumers and higher costs.

During RIIO-ET2, we have so far submitted 24 PCD reports but have not yet received feedback from Ofgem and so it is hard to assess the efficacy of the process. Managing the situations in which PCDs are applied (see comments below on the materiality threshold) and the risks of untimely feedback will be important to ensure this element of the regulatory framework is most effective. We consider that the framework can be improved by putting in place a reasonable timeframe in which Ofgem's reviews of PCD reports must happen to ensure that any useful feedback can be applied to other similar projects and avoid the prolonged uncertainty associated with an open-ended process.

We agree that evaluative PCDs should only be applied to large projects and/or those that have the potential to cause material consumer detriment in the event of failure to deliver, late delivery or delivery to a lower-than-expected standard. This will ensure regulatory focus is on the areas of most value to consumers. We agree with the introduction of a materiality threshold. We agree that a minimum threshold should be set, but we do not have a strong view on whether a common materiality threshold should be set for all TOs.

As an example, we currently have more than 100 evaluative PCDs. Applying a £10m threshold to NGET's current ET2 portfolio would mean c.90% by value of project allowances covered by PCDs would still be covered but would reduce the number of evaluative PCDs by around two-thirds. This could therefore be an appropriate materiality

threshold for NGET that would significantly reduce the administrative burden whilst protecting consumers, but it would need to be tested with the other TOs. Alternatively, a threshold could be linked to the Licence Materiality Threshold so that it is tailored to each licensee (e.g. 50% of NGET's Licence Materiality Threshold would mean a threshold of £12.5m).

General comments on PCDs

We agree that it is not necessary to apply PCDs to projects that are rolling-out or commercialising innovation projects on a larger scale. We would expect that in the majority of cases such projects would fall below the materiality threshold that is intended to be set.

We agree that companies should not benefit from a delay in delivery or non-delivery of PCDs where there is not demonstrable benefit to consumers, and we therefore agree that the licence should set out the consequences of this (allowance reduction, reprofiling, etc). However, we do not agree with Ofgem's proposal in paragraph 6.45 of the SSMC Overview Document "to continue linking PCDs to LOs that set out the consequences of this". This statement wrongly conflates the concepts of a licence obligation (LO) (a minimum standard) and a PCD. The consequences of failing to fully deliver a PCD will be set out in the licence (and in the PCD Reporting Requirements and Methodology Document) but such consequences are not the breach of an LO (for which enforcement action can be taken) as is implied by paragraph 6.45 of the SSMC Overview Document.

As is noted in paragraph 6.6 of the SSMC Overview Document, LOs are used to set minimum standards whereas, as noted in paragraph 6.8, PCDs are introduced to ensure that allowances allocated for the delivery of specific activities or projects can be automatically returned to consumers if those projects were no longer required or were delivered to a materially different specification. We agree that such consequences should continue to be set out on the face of the licence but this is distinct from "linking PCDs to LOs that set out the consequences of [non-delivery]" as this implies that failure to deliver the PCD is the failure to meet a minimum standard set by an LO which is not the case.

LOs, PCDs and output delivery incentives (ODIs) each have different purposes and, accordingly, different consequences if the associated outputs are not delivered.

We agree PCDs should not be overly granular or specific and that Ofgem's proposal in paragraph 6.51 of the SSMC Overview Document to make PCDs "outcome focussed" (which we assume will be linked to consumer outcome), rather than linked to prescriptive lists of outputs, will help with this, provided the outcome is clearly but proportionately defined and can be objectively measured. As noted above, naming specific assets within a PCD is too prescriptive and would hinder the flexibility in approach and the use of potentially new innovative solutions that will support TOs to do the right thing for consumers.

In cases where network companies overspend their allowance and this is attributable to a change in scope (as referenced in paragraph 6.53), we would expect the PCD output and allowances to be changed to manage the change in scope and associated change in allowance. If actual spend then varies from this revised allowance, then the totex incentive mechanism would apply.

OVQ13. Do you agree with our proposed framework for setting financial incentives? Are there any additional considerations that we should take into account?

Incentives should focus on the outcomes and behaviours that maximise overall value for consumers. Financial incentives can be a highly effective way of achieving that if they are designed and applied in the right way. A well-designed incentive will: align the TO's interests with those of consumers; be clear and predictable in its application and outcome; should not be an outcome incentivised through another obligation; and link to factors that are within our control to drive the desired outcome.

We agree that financial incentives should primarily be used to support delivery of service quality improvements which go beyond minimum standards, where this is in the interests of consumers, by rewarding companies that deliver such value, but penalising them if they fall short on meeting expectations. They must be distinct from licence obligations (which set minimum standards) where, if the requirement is not met, penalties commensurate with the consumer detriment felt may be incurred.

Scope

We agree with the proposal to continue incentivising service improvements through financial incentives.

We agree that financial incentives could be applied to encourage network companies to coordinate with each other more effectively to provide better outcomes for consumers, as set out in paragraph 6.90 of the SSMC Overview Document. This is in line with our proposal to add an incentive to the Coordinated Adjustment Mechanism (CAM) to

incentivise network companies to unlock additional consumer value by transferring allowances to another network company if they could deliver the outcome at better value. See further our response to OVQ39.

We consider financial incentives should be applied to incentivise timely delivery of outcomes but use of such incentives should be targeted. They should be used where incentivising early delivery would deliver consumer benefit, e.g. by reducing constraint costs, and delivery timescales are materially within a TO's control, and mechanisms are included to allow for external events outside of the control of the TO. This approach has been used on the ASTI projects. It is important (among other things) that a delivery incentive provides a symmetrical opportunity for upside / downside performance so that the incentive presents a 'fair bet' for network companies and consumers – we note that for ASTI this was calibrated across the portfolio of a TO's projects rather than on a project-by-project basis. We have provided further thoughts on the scope for ODI-Fs on delivery and the core principles that should be applied when implementing such incentives in our response to ETQ4.

Target setting

Incentive targets should align the licensee's interests with consumers' and, where appropriate, network customers', and be proportionate to the value for money, or beneficial outcome, that is being targeted. We support stretching targets, provided there is evidence it would create value for consumers and be in their interests to pay and that they are realistically achievable. We agree that bespoke targets may be required in certain circumstances, for example because there are distinct factors in play in a certain region, but these should be subject to the same principles as above. This could be the case when designing new customer connection incentives, given the difference in contracted customer background NGET is facing in comparison to the other TOs.

If service is already of high quality, financial incentives should be available for maintaining that high service level and that setting an 'improvement' target would not be necessary or appropriate in all circumstances.

We agree deadbands can be an appropriate way to avoid undue penalties or rewards which are not commensurate with the consumer cost or benefit arising from the variance in outturn performance. There should be appropriate exemptions from penalties for factors outside of the reasonable control of network companies.

The approach to setting targets must be reflective of the realities of the current and expected macro-environment. The list of target-setting approaches proposed (historical network company performance, frontier company performance and performance data from other sectors) are all in principle reasonable, but the right approach will depend on the scope of the relevant output. In choosing the final approach for each target, Ofgem should evidence how the approach ensures that targets are realistically achievable. For example, there may be valid and justified reasons why historical network company performance may not be reflective of the level of performance that should be expected from the company going forward, or where maintaining that level of performance now requires more effort from the network company. This is true in the customer connections space, where we have seen a significant increase in the volume of connection requests. This increased volume means the timely connections target becomes harder to reach, all things equal. So although the target may remain 'static', an improvement in performance is necessary to continue to meet that static target.

Strength of incentives

The range of issues Ofgem has listed in paragraph 6.66 of the SSMC Overview Document are reasonable to account for when considering incentive strength.

We support Ofgem assessing incentives as part of an overall review of the package and the risks and rewards available to companies as a result of the price control settlement.

Calibrating incentive rates, caps and collars across networks

We are comfortable with the proposal to present all ODI-F values as a percentage of RoRE rather than a percentage of base revenue. We understand the rationale for this in terms of RoRE being a measure more directly relevant to investors and agree that RAV will generally be more stable than revenue. However, we did not understand the final bullet point in paragraph 6.98 of the SSMC Overview Document that "*potential rewards or penalties will be 'sized' according to the notional gearing of the company and will not be affected by the amount of notional equity the company holds*". This would benefit from clarification so we can consider the proposal and respond fully.

We agree that financial rewards should not exceed the value of the improvements or benefits that are delivered by the behaviours or outcomes being incentivised. We believe that penalties are an appropriate tool where the desired service quality improvements which go beyond the minimum standard and which are in consumers' interests are not met. Penalties should be proportionate to the level of consumer benefit that would not be delivered as a consequence of the failure. There may also be circumstances where it is in consumers' interest to cap a potential penalty if it could go beyond what a company could afford and/or should be expected to bear to ensure an

appropriate risk/reward balance, or prevent financial distress. This is necessary to avoid exposing networks to excessive financial risk which would need to be reflected in their cost of capital. A specific example is the Energy Not Supplied incentive which has a downside collar of £31.3m for NGET. Without such a collar, in the unlikely event of a single, widespread unreliability issue affecting a large centre of demand, networks would be exposed to an extremely high penalty for something that may be due to a random event coinciding with bad weather.

It is also important that incentives are symmetrical where possible (this helps deal with statistical variations that are random and which are not directly controllable by network companies), and the overall calibration of incentives should provide a 'fair bet' for network companies. This will ensure the framework provides a balanced opportunity for a network company to either earn rewards for meeting targets and benefiting consumers, or incur a penalty for failing to meet targets.

OVQ14. Do you agree with our approach to setting reputational incentives? Are there any additional considerations that we should take into account?

We agree that reputational incentives remain an appropriate part of the framework and that the framework set out in paragraph 6.72 of the SSMC Overview Document for the circumstances in which ODI-Rs will be used is sensible. We agree that reputational incentives can and do motivate network companies to behave in certain ways when they are designed and used effectively.

OVQ15. Do you agree with our proposals for bespoke outputs? Are there any additional considerations that we should take into account?

We agree with Ofgem's stated desire as a general principle to minimise the number of bespoke outputs, which will help to streamline the overall framework and ensure:

- consumers can expect a similar level of service regardless of geographic location;
- company performance remains comparable across the majority of the price control;
- company focus remains on key areas of high importance to consumers; and
- the price control is efficient and manageable.

However, we also agree that network companies may have unique requirements and circumstances, that need to be reflected in the price control. This is likely to be especially true in ET3. For example, the TOs are facing very different customer connection dynamics. NGET currently has 156GW of hybrid battery-solar storage projects contracted (40% of NGET's contracted queue), while the other TOs have 8.6GW (7.5% of their queue). These differences may create a need for a bespoke approach or at least an approach that recognises differences in scale in developing outputs and incentives. We will work with Ofgem, stakeholders and other TOs in developing connection incentives from those used in RIIO-ET2 that reflects on the reform programme underway.

We welcome Ofgem's proposal to work with network companies and stakeholders when developing business plan guidance to define the evidence required to accept bespoke outputs: clear guidance on the type of evidence which will be acceptable is important to ensure network companies can submit effective proposals which can be efficiently reviewed by the regulator.

Incentive strength should be considered alongside an assessment of other parts of the regulatory settlement that impact on the overall value of risk and reward in the settlement. We therefore consider that at this stage no limit should be set. If we were to propose bespoke or new incentives through the business plan process we would include evidence to support the strength of the incentive.

Environment outputs and incentives

Key messages:

- A push for consistent and transparent reporting on environmental performance is welcomed to support stakeholders review performance across the sector.
- We support the direction of travel on reporting requirement changes and welcome the opportunity to work with Ofgem, stakeholders and the other networks to deliver this.
- We consider that there is merit in the introduction of a financial incentive to support delivery of additional environmental benefits, directed at tackling both global warming and biodiversity loss.

OVQ16. Do you agree with our proposal to retain the EAPs and AERs in RIIO-3? Please provide reasonings for your position.

We agree with Ofgem's proposal to retain the EAPs and AER in RIIO-3. Both requirements allow us to report our performance transparently for consumers and other stakeholders. They allow us to demonstrate our commitment to

operate in an environmentally sustainable way and how teams across the business are held accountable for delivering in this way. We are also committed to engaging with our stakeholders through our publications and to take on board feedback and identify opportunities for improvements. The EAP and AER have allowed us to identify our direct and indirect environmental and sustainability impacts, whilst focusing, and stretching our ambition on commitments.

Department for Energy Security and Net Zero (DESNZ) Community Benefit Framework

We would also like to draw Ofgem's attention to community benefit and broader social impact. These were not referenced in the SSMC, however, they are important to National Grid as a responsible business.

We consider there is value in aligning on expectations for community benefit across network companies, and that we should report transparently on the societal benefits delivered alongside our operations.

In early 2023, the DESNZ launched a consultation seeking views on how communities should benefit from hosting new transmission infrastructure. In late 2023, it published a 'minded to' position, setting out an intention to publish voluntary guidance for industry and communities when developing individual community benefit packages. We expect the government guidance to set the parameters for how community benefit should be delivered, and specifically, a recommended level of investment per project which is flexible enough to allow us to develop community benefit strategies that are tailored to local need.

Whilst we await the publication of government guidance we are working to understand local context and aspirations around our major project activities. Operating within the parameters of government guidance, we want to be able to build a strategy that supports local communities in close proximity to our proposals, whilst also delivering broader, regional legacy benefits. We also believe we have a role in supporting wider national ambitions, such as addressing the workforce and skills challenges through employment and skills development opportunities, and in ensuring the most vulnerable consumers and under-served groups do not get left behind in the transition to net zero.

Once published, we will work to reflect the impact of the government's guidance in our ET3 business plan submission. If the guidance is delayed beyond our submission, we propose a reopener is incorporated within the price control mechanism to allow us to recover funding for these projects and that this can be approached on a portfolio basis.

We also recognise a need for consistency and transparency between the network companies, including activity that falls outside of scope of government guidance and reporting requirements; we therefore suggest working with Ofgem and network companies to develop a common approach to the application of community benefit.

OVQ17. What are your views on the new proposed AER format with Commentary and KPIs?

Based on the examples of the key performance indicators (KPI) report presented by Ofgem in the environmental working group in January 2024, we support the proposals. The proposal is a positive build from RIIO-2 and will ensure a more focussed, transparent, and consistent approach in measuring the environmental and sustainability performance across all the network companies, which will benefit consumers and wider stakeholders.

A consistent approach and format across the network companies will help reduce regulatory burden by clarifying expectations and allowing for easier comparison. It will also allow regular feedback to be provided by Ofgem, to ensure we are delivering against the required expectations of this commitment.

OVQ18. Do you agree with our minded-to position of retaining the reputational incentive on TOs and GDNs for reducing their BCF?

We agree with Ofgem's minded-to-position to retain the reputational incentive for reducing NGET's business carbon footprint (BCF). We acknowledge that our BCF has a major impact on the environment, and therefore we have a role to play in ensuring that there is a reduction in our footprint. As we seek to reduce our BCF, our investment decisions will need to take into account the cost to consumers and the technology available to deliver a whole life solution that is consistent with the 2030 target. There are challenges regarding the ability to control certain aspects of the BCF, for example Scope 3 emissions, and therefore we consider that it is appropriate for this to remain a reputational incentive. This still provides a clear incentive on us to continue to with the ambition to reduce our BCF.

OVQ19. Are there any other suggestions you would like to make regarding reporting standards?

The current BCF RRP tables have been adopted well within National Grid for RIIO-2 reporting purposes and based on this we recommend retaining the current reporting standards.

In the interests of transparency, consistency and creating a common approach, and in-line with the government's streamlined energy and carbon reporting (SECR), we would also recommend Ofgem considers normalising the data rather than reporting absolute figures, for example using tCO₂e per km of network, tCO₂e per £1m spend or eTCO₂e per employee.

OVQ20. Do you agree with our minded-to position to withdraw the Environmental Scorecard and incentivise improvements in environmental impacts through the Annual Environmental Report (AER)? Please explain your reasoning.

We agree with Ofgem's proposal to withdraw the Environmental Scorecard and instead incentivise improvement in environmental impacts through the AER. We consider this is the right action because:

- The scorecard has not been consistently adopted across all network companies and therefore does not create a transparent and common approach to reporting environmental improvements.
- The financial incentives in the environmental scorecard have not been proportionated to delivering the actions required and the additional administrative burden associated with reporting the outputs. For example, the financial incentive on reducing office water reduction is approx. £38 per year to National Grid, which is not equivalent to the actions to deliver this or the reporting administration.

OVQ21. Do you consider that there are other areas which require financial incentives which cannot be captured by the AER? Please explain your reasoning.

We consider that there is merit in the introduction of a financial incentive to support delivery of additional environmental benefits, directed at tackling both global warming and biodiversity loss. We know from our recent stakeholder engagement that stakeholders rate the protection of our natural environment as a key priority for us. Delivering additional environmental benefits is important for consumers, as well as wider society and communities.

Improving Biodiversity Net Gain (BNG) is now a legal obligation. While meeting the legal requirement will drive actions that support nature's recovery, we recognise that meeting this requirement alone may not deliver the level of improvement that consumers may value, including reducing the potential for environmental crisis and taking opportunities to deliver further improvements. At National Grid we want to develop and deliver win-win solutions: those which both reduce emissions and enhance ecosystems, such as nature-based solutions.

There are a range of tools to measure progress against delivering these additional environmental activities which can support any audit or reporting requirements associated with a financial incentive. We have been working with the other TOs and the consulting firm AECOM to develop a common approach and platform to measure and value a range of benefits provided by nature (the EcoUplift platform). This platform estimates biodiversity values, alongside a broad range of nine other ecosystem services, including climate, specifically the value of carbon captured, stored and emitted resulting from development, and land use change. In addition, we are exploring the use of other external carbon calculation methodologies to quantify carbon benefits resulting from specific habitats, e.g. The Woodland Carbon Code¹. There are also a range of other tools that could support the delivery of this incentive which we are exploring.

Based on this, we propose the introduction of an upside only financial incentive for delivering environmental improvements that go above and beyond minimum BNG legislative and regulatory requirements.

We also propose that the value of the incentive is based on the social value of carbon achieved through the delivery of the benefits, aligned to the treasury green book carbon values, which the EcoUplift platform is aligned with.

We are currently seeking stakeholder feedback on this proposal via a nature positive consultation that we are running. The consultation is still in progress and therefore we are unable to provide the outcomes to form part of this response, however our intention is to include this as part of our RIIO-ET3 business plan submission. We are keen to develop the proposed incentive with Ofgem and other TOs ahead of this.

¹ <https://woodlandcarboncode.org.uk/>

Network Asset Risk Metric (NARM)

Key messages:

- For ET, the NARM framework developed for RIIO-ET2 is overly complex.
- Our principal challenge with the current design is the link between the funding mechanism and network risk which does not support appropriate asset management decision making in the interests of long-term consumer benefit. This is because the funding adjustment mechanism is not robust, with a wide range of random variations between the cost of an asset intervention and the funding adjustment resulting from that intervention not going ahead. Consequently, TOs are strongly incentivised to deliver certain interventions over others – even if other, more effective interventions arise.
- A number of improvements could be made to the design of NARM for ET, including:
 - providing baseline funding accompanied by appropriate mechanisms (e.g. flexible, volume-based mechanistic PCDs) which incentivise effective asset management decision making for long-term consumer value;
 - discontinue use of 'long-term risk benefit' (LTRB) in its current form and adopt network risk measures which reflect how we prioritise our plan and are aligned to the measures used for ED;
 - establish appropriate framework and funding mechanisms to ensure substantially completed projects attract appropriate funding within the relevant price control period.
- We do not agree that the scope of NARM should be extended as we do not believe there is sufficient time for development of other asset groups.

OVQ22. Do you have any views on our proposals for the NARM framework?

There are differences in how the NARM framework has evolved and been applied across the ED and ET sectors. Partly this is driven by the nature of the networks being different, but mainly this is due to differences in the way the NARM framework has been developed and implemented. This response primarily outlines ET specific challenges and recommendations, but we have outlined where there are differences between ET and ED which should be taken into account when the equivalent review is carried out for RIIO-ED3.

The detailed objectives of the NARM framework are different for the ET and ED sectors, but the overarching objective – to hold network owners accountable for effective management of network asset risk – is the same between the two sectors.

For ET, the NARM objectives seek to enable:

- Data transparency
- Effective justification of asset management decision making
- Establishment and assessment of Baseline and outturn Network Risk Outputs
- Estimation of monetised risk and comparison of monetised risk over time
- Identification of benefits to be delivered through investment decisions.

Effective management of network risk continues to be relevant to meeting Ofgem's four consumer outcomes for RIIO-3, specifically the need to maintain secure and resilient supplies, system efficiency and long-term value for money.

It is important that in operating our network we meet the objectives of NARM and that NARM therefore sets a framework which enables us to do so. However, for ET, the NARM framework developed for RIIO-ET2 is overly complex. Our principal challenge with the current design is the link between the funding mechanism and network risk. This is not one of the objectives of NARM and it is not necessary to meet the objectives (the table below provides further detail of the funding link challenge and other challenges). We believe the NARM objectives can and should still be met, but we need to make some changes before the NARM framework can effectively enable this.

In RIIO-ET3, we will see significant development of the network to enable net zero. Plans for whole site replacements and upgrades form part of the expected transformation. We are at the early stages of development and there is uncertainty around which specific interventions will and will not be required. Alignment of funding to specific asset interventions does not allow the flexibility required to enable network growth. Ultimately, it will add complexity to wider decisions being made in the interests of long-term consumer benefit. For example, if NARM was assessed independently, the proposal may differ to a proposal resulting from assessment of wider drivers.

One scenario could be that NARM assessment suggests replacement is not necessary but this may be superseded by a combination of drivers which point to a need for whole site replacement.

Network asset risk is just one tool which can be used to inform the most optimal solution for asset replacement. It is also important to consider wider drivers for investment. In the context of the large-scale network upgrades required, where there are multiple drivers impacting multiple assets, the usefulness of this tool is further diminished. With this in mind, we welcome a discussion on the use of NARM in Cost Benefit Analysis (CBA). We are concerned about comparing monetised risk values with actual investment values and the possibility of double counting with other costs and benefits captured within the CBA.

A specific ED issue arose from the results of RIIO-ED2 cost assessment, where there is a disconnect between cost allowances and NARM targets, where the former was changed without a consequential impact on the latter. In ED, half of the derivation of cost allowances is based upon totex assessment, where higher than benchmark costs can be driven by either higher costs or higher volumes. Reductions to allowances driven by totex cost assessment need to drive commensurate reductions to volumes of activity and consequently reduction to NARM targets.

We have welcomed engagement with Ofgem and the other TOs over the past year, where we have shared challenges with the NARM framework through a series of meetings and presentations. We are concerned about the proposal for continuity from RIIO-ET2 into RIIO-ET3 as it suggests the current challenges are not fully understood and are not being addressed. The table below provides an overview of the key areas of concern we have communicated through the 2022 and 2023 NARM RRP narratives, meetings and presentations shared with Ofgem on this topic. We have included a proposal for how each might be resolved for RIIO-ET3 and we have flagged where we believe there is alignment in the position with ED and the other TOs. Differences between ET and ED are also highlighted. These are either due to how the NARM methodology has evolved or due to differences in network assets and volumes of assets. In some cases, it may not be desirable for alignment across sectors, especially if it is detrimental to the effectiveness of the NARM framework in any of the sectors.

NGET concern	Related NARM objective	Issue	Proposal	Level of alignment with ED
Impact of linking funding to risk outputs	N/A	<p>Monetised risk scores do not generally align to appropriate levels of funding. This is because risk is associated with the importance of an asset on the network. This can mean that identical interventions with identical costs can produce risk score outputs which differ significantly depending on where they occur on the network. This is relevant for:</p> <ul style="list-style-type: none"> - Low risk scores due to system configuration, where intervention is necessary on poor condition assets (can result in funding being less than intervention cost). - High risk scores relating to system configuration, where the asset condition is less severe (can result in funding being greater than intervention cost). <p>This results in the potential for windfall gains or losses, rather than driving networks to make asset-appropriate decisions.</p>	Baseline funding provision accompanied by appropriate mechanisms (e.g. symmetric, volume-based mechanistic PCDs) which incentivise effective asset management decision making for long-term consumer value.	While for ED there are differences in the consequences of failure for assets on different parts of the network, the range of differences is limited by the methodology where four categories of criticality index are used for each asset category. Furthermore, the volume of activity is much higher, allowing easier substitution of assets. This results in less complexity within the framework and a more consistent link between funding and network risk.
Calculation of long-term risk benefit (LTRB)	Estimation of monetised risk and comparison of monetised risk over time	<p>The LTRB is a measure of the difference between the monetised risk of the original asset with the expected risk following a replacement for a fixed time period. LTRB calculations are inconsistent between TOs and with other sectors. Output is not useful to business decisions or stakeholders because it is not considered in assessment of delivery options and cannot be benchmarked due to inconsistency of approach. Differences in the LTRB methodologies applied cross-sector mean that R£1 of LTRB for NGET does not equate to R£1 for another owner. Test cases have demonstrated that the differing methodologies, if populated with the same inputs, can give significant differences. In one example tested, the same input risk values resulted in SPT calculating R£46.7m of LTRB and NGET's analytical model indicating R£105.4m. An additional objective of the implementation of NARM is to be able to compare cross-sector, which is not possible with the current differing implementation of LTRB.</p>	Discontinue use of LTRB in its current form and change approach to use network risk measures which are consistent with how we prioritise our plan and are aligned to ED's measure.	<p>ED agree that the methodology for ET is flawed, especially where it generates negative benefits. It is not possible for the ED methodology to have negative benefit for an intervention that improves asset health.</p> <p>For ED, there is no issue with comparison of risk values across DNOs, because all DNOs are using the same Common Network Asset Indices Methodology for derivation of long-term risk values.</p>
NARM Reporting	Data transparency	Reporting is overly complex and existing reports have known errors in embedded formulae. The complexity is largely driven by the high level of granularity required for the RRP submission which involves a complicated reconciliation exercise. In particular, the use of Total Risk increases the	NARM reporting should be simplified and focussed on submission of data which demonstrates effective asset management decision	ED agree that NARM reporting in transmission is overly complex. ED's reporting for ED2 has been developed to be as simple as possible (but it still remains

NGET concern	Related NARM objective	Issue	Proposal	Level of alignment with ED
		<p>complexity, with many millions of data points now being used and generated. Our view is that Total Risk does not provide a reliable assessment of network risk. It is subject to volatility in reporting risk scores when taken at a single point in time and this does not reflect the 'real' risk of the asset.</p> <p>This is contradictory to the related NARM objective and, during an engagement on 19 December 2023, Ofgem recognised the impact this has on transparency and need for demystification and simplification.</p>	making. Further, it will need to be updated to reflect any changes in the framework.	extensive). ED would not want to adopt transmission scale reporting, especially project-specific reporting. This would become unwieldy for the thousands of asset changes each year.
Clearly identifiable over/under delivery for asset interventions which were not originally proposed in the RIIO-2 submission	Establishment of Baseline Network Risk Outputs	There has been considerable change in the RIIO-ET2 plans for both NGET and the Scottish TOs since RIIO-ET2 started. In RIIO-ET3, increased uncertainty and the scale of network growth means there is potential for the plan to change to a greater extent which, in turn, will exacerbate this issue further. The interventions included in the original submission were used as part of the calculation for LTRB and, due to relatively low volumes and large investments, one change can have a big impact on the baseline network risk output. A lack of defined rules for how these interventions should be funded has resulted in funding uncertainty for decisions already taken since the start of RIIO-ET2. There is no agreed methodology for the ET2 period for investment decisions which are being made with spend at risk. This has led to more cautious decision making which is not aligned to the objectives of NARM because we are more focussed on decisions at a project level.	Support the development of rules and enduring position by the time of Final Determination for RIIO-ET3. This should include a consistent ruleset for treatment of changing asset replacement priorities within period, to prevent decisions being made on a project-by-project basis.	This is not an issue for ED where another asset can relatively easily be selected for replacement. This is because ED have high volumes of activity and there are usually other candidates that can be substituted quickly. The closest comparator to the situation in ET is 132kV transformers where long lead times from manufacturers impact the ability to identify substitute assets.
Funding extending across regulatory periods	N/A – links to funding mechanism	There is no flexibility in timescales for when network risk reduction is funded. A scheme that is started in one regulatory period may be commissioned in the following one. This would result in RIIO-ET2 funding being clawed back. This will result in uncertainty of funding mechanism (which may change between price control periods) and misalignment between reduction in network risk and expenditure.	Establish appropriate framework and funding mechanisms to ensure substantially completed projects attract appropriate funding within the relevant price control period. This could be similar to that provided for load related projects, e.g. T2+2.	In ED, project durations are significantly shorter and there are higher volumes of activity, so while some projects will span across price controls, there is limited distorting effect, with projects over-running into the current price control broadly balancing with the projects that overrun in the next.

NGET concern	Related NARM objective	Issue	Proposal	Level of alignment with ED
Expansion of NARM Scope	All – depending on nature of expansion	We need a sufficient population of an asset group which is of sufficient value to justify development of NARM modelling. This is because of the cost implications and feasibility for smaller populations or lower value assets. Additionally, we do not believe there is time for development of other asset groups in advance of RIIO-ET3 Final Determinations.	<p>We do not support the proposal to expand scope for RIIO-ET3 but would be happy to work with Ofgem to assess possibilities for future price control periods.</p> <p>If NARM interventions are funded in ET3 via a symmetrical mechanistic PCD (based on a Unit Cost Allowance adjustment for volume variance around an ex ante baseline), then a simple way to increase the proportion of expenditure linked to NARM outputs would be to move OHL Conductor back under NARM.</p>	<p>ED agree that expansion has to be carefully considered and developed. Expansion of NARM may not be the best solution when considering other mechanisms which could be used.</p> <p>ED NARM scope has already expanded in ED2, to 61 asset categories. The need for further expansion should be carefully considered, especially if data is limited to support a robust mechanism.</p>

Resilience

Key messages:

- We support the proposal for a long term approach to network resilience and the development of common standard and metrics to embed climate resilience.
- There needs to be a centralised climate change projection data set and a consensus on the extreme event scenario that network companies and other industry parties are planning to so investments are proportionate and comparable. This needs to be of sufficient detail to reflect regional variations.
- Resilience metrics will need to be proportionate and the insights meaningful enough to drive actionable steps and network investments that strengthen network resilience.
- When setting standards and metrics, recognition needs to be given to the differences in topology, asset type and general resilience maturity of the different network companies' networks.
- Because work on appropriate resilience metrics is in its infancy, we do not expect that any performance level targets will be derived until a holistic understanding of the required future resilience level and associated investments is attained.
- We welcome the proposal for industry working groups to collaborate in the development of common standards and metrics.

OVQ23. Do you have any views on our proposed long-term approach to embedding climate resilience, including the principles for embedding climate resilience?

We support the proposed principles for embedding climate adaption and resilience into network investments. The creation of strategic objectives based on an agreed future climate scenario will support network companies to plan and design the future network to agreed resilience standards. The developed standards should be broad enough to allow network companies to develop climate resilience strategies and metrics specific to their asset type, locality and broader operational resilience landscape.

Our specific views on the principles set out in 6.157 of the SSMC Overview Document are set out below:

1. Climate resilience decisions need to be based on a common climate model & forward-looking climate data.

We agree that good data and climate forecasts will be crucial in informing the right decisions for future climate resilience. As climate change is expected to bring unprecedented extreme and variable weather, historical information is not a reliable indicator of future risks. It is therefore critically important for networks to invest in forward-looking risk assessment and risk management tools that provide intelligence to feed into climate adaptation strategies. NGET, working with industry partners, has made progress in this area through a range of innovation projects including the SIF funded Wellness project². We have developed an internal Climate Change Risk assessment tool (CCRT) which enables us to model climate hazard levels and produce qualitative assessments of potential impacts on our asset types for both baseline and projections for future time periods. We are keen to develop this work and share learnings with the wider industry to support the development of industry agreed climate resilience standards.

2. High impact, low likelihood extreme events need to be considered in light of the more frequent and severe extreme weather expected.

As society and our economy is becoming ever more reliant on electricity, climate change and unpredictable weather is presenting new challenges for network companies in maintaining a resilient and reliable network. The UK Climate Projections 2018 (UKCP18) data³ predicts an increase in the frequency and intensity of extreme weather events with increased rainfall and periods of extreme heat. There is therefore an increased likelihood of high impact events. For example, Storm Arwen, a powerful extratropical cyclone caused widespread disruption across the UK in November 2021 and in the summer of 2022, the Met office issued several extreme heat warnings. During the extreme heat periods our systems were put under significant stress with high temperatures affecting the performance of our supporting systems such as battery and asset cooling systems. Although the NGET network remained resilient during these severe weather periods, we recognise that the outlook necessitates a review of our weather resilience strategies and recalculation of the probability of severe high impact incidents. We therefore agree with Ofgem's view

² [Whole Energy System Resilience Vulnerability Assessment \(WELLNESS\) | ENA Innovation Portal \(energynetworks.org\)](#)

³ <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp>

that high impact, low probability events need to be considered and strategies put in place – and funded through the price control framework - to mitigate against their impacts.

We also think that:

- It is important to note that high impact events may not always be due to a low probability event. They could be due to the compound impact of multiple probable events. For example, a storm that causes disruption, if sustained for a few days means that staff cannot go out to repair the damage therefore leading to prolonged faults, increased network vulnerability and high impact to consumers. Such events will also have an impact on plan delivery as maintenance or connections work cannot continue. It is therefore necessary for there to be clarity on how we articulate and justify investments to mitigate against this high impact of low probability or compound events.
- The consequences of high impact, low probability event may not directly affect the performance of our assets but impact our ability to access and maintain assets (for instance a wildfire in close proximity) resulting in unsafe working conditions. As part of future resilience planning, we will need to consider the surroundings of our assets and their risk profile from weather events.
- There needs to be a centralised climate change projection data set and a consensus on the extreme event scenario that network companies are planning to so as to ensure that investment plans are proportionate and in consumers' interests. The severity of the impacts of climate change will largely rely on global response to reducing emissions which is still unknown. Overcautious estimation of the risks can result in unnecessary expenditure which is not in consumers' interest.

3. The costs and benefits of adaptation actions and their impact on resilience (i.e., avoided costs) need to be correctly valued.

We agree with this principle and our view is that high-quality long-term forward-looking data and information systems will be a key enabler to correctly valuing the adaptation actions required for future network resilience. As we develop our network resilience strategy, we acknowledge that there is a need to manage current and near-term climate impacts as well as the need to make long-term adaptation decisions. It is important to note that the two require different considerations and data sets. The cost and the benefit of adaptation strategies to the built network will differ from that of strategies designed for future builds. These will need to be correctly valued in a wholistic view of network resilience. We think that network companies will need capability and resource to ensure full consideration is being given to both short term climate mitigation actions as well as long term climate adaptation strategies.

4. Investment decisions need to be fit for purpose for the decarbonised energy system and consider whole system resilience strategies.

We agree, in light of increased system vulnerability due to climate risks and increased system access requirements, investment decisions need to consider long term whole system risks. For example, to mitigate a substation flooding risk, in some situations rather than building reactive flood defence mechanisms, it would be preferable for network companies to work with local partners to invest in an upstream ecological solution that proactively prevents flooding and may also deliver wider community and ecological benefits. Furthermore, network companies need to collaborate on research efforts where deeper resilience maturity is needed, for example in the field of coastal erosion. With an increase in offshore connections, many more assets will be coastal in the future. We are currently exploring options for planning and insight tools to support optioneering coastal network investment sites, and this will come forward as part of the RIIO-ET3 investment plan.

OVQ24. Are there any early learnings we should be aware of/incorporate to make progress on this in RIIO-3 or beyond?

Achieving climate resilience will forever be a moving target for network asset managers like National Grid as we understand the impacts on our network of a changing climate. Through experience and innovation studies that NGET is carrying out in conjunction with network and academic partners we are learning that

- The intensity of an event is not always the most critical factors (e.g., the direction of a windstorm can be as important as its intensity).
- It may take time to embed system resilience in the current processes, but better understanding the contributions of existing network interventions to network resilience (low-regret options), and supporting such interventions, may expedite the process at relatively low costs.
- High impact events may not always be due to a low probability event. It could be the compound impact of multiple probable events for example a storm that causes disruption, if sustained for a few days means that

staff cannot go out to repair the damage therefore leading to prolonged faults, increased network vulnerability and high impact to consumers.

- Often threats to resilience result from the environment our assets operate in rather than the vulnerability of the assets. During periods of extreme heat, although our assets may withstand the heat, wildfires in the vicinity of OHL pose a threat to network resilience. During the extreme heat period in July 2022, multiple circuits were switched out of service to protect the safety of firefighters as they managed significant fires, particularly in London – reducing the overall resilience of the network. It is therefore important for resilience strategy to consider how to deal with the wider environmental impacts.
- Geographical factors have a high bearing on the required climate resilience strategies. Coastal areas will require different strategies from inland areas. Regional variations will also need to be considered when developing resilience strategies. All these factors need to be taken into account when considering network metrics and the analysis of network resilience. It is important that a common scenario and a set of standards and metrics is put in place for comparability and collaboration, however flexibility is required to allow network companies to build resilience strategies that are appropriate for their network, geographic location, and asset population. NGET's Forward Metric Framework⁴ assesses 43 indicators to give an indication of the system's resilience. We believe this would be a good starting point in the development of an industry wide climate resilience standard.

One important observation we are making is that while resilience standards and metrics are being developed, we are continuing to deliver network reinforcements (e.g., ASTI) to current standards in line with our licence obligations. Should the output of this work require significant adaptations to the network and upgrades to substation systems, there needs to be a regulatory funding route to deliver the upgrades. We support the proposed introduction of a resilience reopener set out in section 8.42 of the SSMC Overview Document. The scope of the reopener must be broad enough to accommodate investments in required adaptations. For example, we are progressing investments in flooding resilience measures following guidance from the Engineering Technical Report 138 (ETR 138) report. These mitigations will need to be reviewed regularly to monitor for any changes and updates to EA flood data or climate projections. Further investment will be required if risk levels change. Broadening the scope of the reopener to include investments that result from the study might be appropriate. We have provided further views on the reopener in our response to OVQ41.

OVQ25. Do you agree with our suggested approach for embedding climate resilience into RIIO3, namely: introducing resilience strategies; developing forward-looking resilience metrics; and introducing climate resilience working groups?

We agree with the proposal for companies to develop long term resilience strategies. We are also interested in being part of the climate resilience working group Ofgem proposes is set up in paragraph 6.160 of the SSMC Overview Document to develop coordinated sector specific resilience strategies. As part of this workstream we think it will be important to:

- (a) prioritise a common definition of resilience that should be used by network companies and NESO noting the differences between climate resilience and climate change resilience;
- (b) provide early agreement / clarification on which climate scenario network companies should use when developing their investment plans and by the NESO when developing the SSEP and CSNP. Climate models are consistently being updated to incorporate new data and processes. The highest emissions scenario modelled in UKCP18 is 8.5 with a predicted rise in temperature of 4.3°C. This is increased compared to 8.2 in UKCP09, demonstrating the evolving picture of climate change and that emissions scenarios are not fixed and may continue to increase in future reports. We therefore need an agreement on the scenario to work to and specifications on key resilience points being considered. NGET currently modelled against the 4°C worst case scenario represented by RCP8.5 and we are developing a more granular level forecast for a more detailed assessment. We think that any agreed scenario should be developed to be sufficiently granular to take account of regional and asset variations in potential impacts; and
- (c) consider future network resilience beyond the RIIO-3 period. Using our modelling tools, we are considering resilience reporting points at 2030, 2050 and 2070. It is necessary for reporting points to be agreed for scenario comparison and understanding of the appropriate network investments at a given future period.

⁴ [Forward Resilience Measures \(Stage 1\) | ENA Innovation Portal \(energynetworks.org\)](https://www.ena.org.uk/innovation-portal/forward-resilience-measures-stage-1)

OVQ26. Do you agree with the proposals that we have set out around the resilience metric?

We agree that Ofgem should be able to monitor network company progress and, where possible, performance in this area and hence there is a need for a quantitative measure by which to assess performance. Given the complexities of resilience, and the broad nature of risks that networks need to mitigate against for resilience, it is likely that multiple resilience metrics will be required.

Resilience metrics will need to be proportionate and the insights meaningful enough to drive actionable steps and network investments that strengthen network resilience. The metrics should differentiate between resilience to existing challenges and resilience to future challenges brought about by climate change.

A first step in developing metrics should be to align on what the set of resilience metrics is seeking to deliver. Metrics should be used for learning purposes and to capture what needs to be delivered in order to measure progress towards long term resilience. Resilience maturity will vary across network companies and assets classes for example resilience maturity of telecoms networks will differ from that of core network assets. The metrics developed will need to take these differences into account. Moreover, because work on appropriate resilience metrics is in its infancy, we do not expect that any performance level targets will be derived until a holistic understanding of the required future resilience level and associated investments is attained.

In line with the commitment to create a streamlined and proportionate regulatory framework, any metrics should be simple, easily understood and Ofgem should consider any intended consequences to their introduction on the ability of network companies to deliver their investment plans. We expect any metrics would avoid the complexity and problems of the NARM which we have explained in QVQ22.

OVQ27. Do you agree with our proposals on workforce resilience?

We welcome Ofgem's recognition that workforce resilience is a significant area of focus over the coming years as we scale our business to meet the challenge to deliver net zero.

We support, in principle, the additional transparency created by the proposed reporting approach as networks expand their workforce and adapt new ways of working. However, we need further clarity from Ofgem on what its intention is for the use of this data to ensure that it is in consumers' interest for TOs to provide information on a set of metrics. Metrics would need to be broad enough to account for the different workforce resilience challenges including type of skills required between the TOs, for example NGET would have a much larger onshore workforce skills requirement than SSE. We welcome the opportunity to work with Ofgem, stakeholders and other TOs to develop metrics that are appropriate for all.

An increase in supply chain and skills capacity is needed across the entire industry. Ofgem's approach to developing metrics should focus network companies on improving overall sector workforce resilience and not just an individual company's, to avoid the unintended consequence of network companies competing for a scarce resource, rather than focussing on growing overall resilience in the sector.

To deliver our ambitious plans, we are embarking on a significant transformation in terms of the size of our work, our capabilities and how we work. We will make unprecedented levels of investment, recruit and train a new workforce, adopt new ways of working, test and roll-out new technologies and continually seek to innovate further. These transformation plans will need to be funded through the regulatory framework if we are to be able to maximise the value we deliver to consumers in terms of lower bills, more secure supplies and decarbonisation; by connecting more renewables and reducing constraint costs.

Our approach includes developing, training and upskilling strategies, as well as strategies focussed on developing the requisite pipeline of diverse talent and ensuring we create an equitable and inclusive work environment and organisation where people can thrive. These include:

- 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 resourcing plan – that enables us to recruit at pace for roles and capabilities that are critical to delivery of network upgrade and expansion.
- a supply chain strategy – which allows for flexibility in contracting approaches, for example through the enterprise model we are using for certain ASTI projects, focusing on efficiency in procurement.

- a future of work strategy – that reflects changing working patterns and diversified locations for recruitment and work;
- 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.

We have identified specific, specialised roles where skills gaps are posing a challenge to our ability to recruit and are approaching this in a number of ways, including investing in our training facilities and creating an expectation to develop these skills in our people rather than relying entirely on an existing market. We are also considering our total reward package and are actively exploring ways to manage our levels of attrition.

This scaling of workforce and training is likely to lead to additional costs, both through our reward packages as market prices are driven upwards due to the greater competition and through the additional training needs and time to competency for our workforce.

Before considering metrics, Ofgem should ensure an appropriate regulatory mechanism is available so that the TOs have confidence that the ramp up in recruitment, training, associated project delivery and workplace requirements will be properly funded, including ahead of need. This should be done through the creation of a specific workforce resilience re-opener within the RIIO-ET3 framework. We think changes may also be required to the RIIO-ET2 framework, as many of the projects we will deliver during RIIO-ET3 will require a ramp up in recruitment and training in the coming years before the end of the RIIO-ET2 period. This re-opener would not be used for costs that would be funded in ET3 through an appropriately-designed RIIO-ET3 opex escalator.

In terms of metrics, as a first step it is important to track the metrics most relevant to the factors that help make a workforce resilient. These include:

- **Retention** – tracking how many new joiners remain with the company beyond certain milestones, e.g. 12 months, 2 years, 5 years. We are planning to ensure that our onboarding and support for new joiners remains high quality and that we manage the growth of the workforce appropriately. Our ability to retain talent will also be linked to the 'reward package'.
- **Reward package** – tracking how pay scales and overall reward packages compare to other companies, sectors and industries. We regularly benchmark our labour costs for both capitalised roles and functional support/other indirect roles to ensure we are market median, and see this as an important factor in an uncertain skills market going forward.
- **Attrition** – tracking the attrition rate and making sure it's in line with wider UK workforce/sector attrition, will be key in determining risks in some areas such as critical roles to deliver projects.
- **Skills gaps in the market** – tracking the forecast demand for certain roles/skills against the available skills in the market: There are many roles emerging that require unique and new skillsets (i.e. such as HVDC engineers) which means an appropriate metric to assess this, accounting for the changing environment and the level of expected competition for such roles from other network companies, sectors or industries will help determine risks and likely resilience. There are also roles that are critical to delivery such as substation engineers and design assurance specialists that need to be accounted for, due to a limited skills supply market, a long lead time to competency and demand outpacing supply.
- **Time to competency** – tracking how long different roles take, on average, to get to competency. Importantly, aspects such as time to competency, getting resource ready for development and planning phases, as well as the delivery phase need to be reflected in resource plans so that fully trained/competent resource is available when it is needed.
- **Retirement** – tracking the rate at which experienced senior staff are due to retire. As many senior staff retire, it is important to consider how TOs are retaining this knowledge and experience and passing it on to the current workforce, which should be part of a training strategy and programme.

Supply chain skilled resource: Any workforce resilience metrics need to take into account the supply chain skilled resource critical to underpinning workforce resilience. We are seeing a shift to a seller's market, with a lack of bidders for projects in part due to insufficient capacity of skilled resource, with conditions expected to worsen. As an example, the current supply chain market has impacted our deliverability of works related to Overhead Lines (OHLs), with lineworkers for HVDC cables particularly constrained. We are deploying a range of initiatives designed to build up capacity and overall capability both within National Grid and more broadly across the supply chain. One example

is the enterprise model for contracting with suppliers across a portfolio of ASTI projects to build up capability and overall capacity in the sector, and help deliver projects at pace. We consider that the development of key common metrics for reporting on workforce resilience should recognise these initiatives.

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.

We consider the above suggested metrics are a useful initial list but it will be important to gain buy-in from others on these including Ofgem, including what additionally is needed that is not already seen in the Workforce Planning and Strategy annex submitted as part of the Business Plan (as was done for RIIO-ET2). After getting clarity on how workforce resilience should be defined, we can then work with Ofgem, the supply chain and other TOs to develop a consistent format of reporting metrics on workforce resilience.

Truth Telling and Efficiency Incentives

Key messages:

- Ofgem must take a step back and design an appropriate incentive which reflects the environment we are facing for RIIO-ET3 and not roll-forward the approach used for RIIO-ET2– which would not be fit for purpose in the new context.
- The design of the truth-telling incentive and efficiency incentive for RIIO-ET3 must take account of the scale of investment the TOs will be required to deliver during the period and the changed macro-environment in which the TOs are operating, in particular the highly competitive and volatile supply chain environment and its impact on the level of cost confidence.
- The truth telling incentive should assess:
 - (i) the completeness of the information included in the TOs' business plans; and
 - (ii) the level of ambition in the TOs' plans, with a focus on whether the plans will deliver a network fit for the future.
- Business plans should be focussed on identifying costs that are realistic, fair and justified against independent data wherever possible, rather than seeking to include 'ambitious costs', which may be unrealistic in the RIIO-ET3 supply chain environment.
- It is in consumers' interests that any truth telling / business plan incentive, which sets minimum criteria must be based on a set of objective and evidencable requirements (which are set out sufficiently in advance) and not subject to subjective interpretation. This is in line with the principles of good incentive design. Incentives are most effective where companies are able to see how their actions will result in a favourable outcome from the incentive, and in doing so, deliver value for consumers. To ensure companies prepare plans that deliver value for consumers – this must be reflected in the truth telling / business plan incentive with a clear and objective set of requirements. If this is not the case, then the incentive will not have the desired properties or meet its objective.
- The totex incentive mechanism (TIM) remains appropriate as an efficiency incentive, but the approach to setting it, and ultimately the rate set, should take into account the lower cost confidence environment.
- The strength of both the truth telling and efficiency incentives should be considered as part of the strength of the overall incentive package, rather than in isolation.

OVQ28. Do you agree with our proposed key objectives for truth telling and efficiency incentives?

We agree with the majority of Ofgem's proposed key objectives for truth telling and efficiency incentives, which are an important element of the framework design.

It is in consumers' interests for network companies to put forward ambitious business plans that reflect the outcomes consumers want, need and expect to be delivered, but the plans must also be complete, of quality, well-justified, and deliverable. An appropriately defined incentive can help ensure this standard of business plan is achieved.

In addition, it is important that the incentive design reflects the macro-environment in which the network companies are operating. For the TOs, the identification and need for major strategic network investments is increasingly

happening in ‘real time’ outside of the periodic price review cycle, as was seen with the Accelerated Strategic Transmission Investment (ASTI) projects. We have also been working with Ofgem to accelerate regulatory assessment of some of the most urgent and strategically significant elements of our RIIO-ET3 plan to ensure we are ready to progress delivery in the early years of RIIO-ET3. These are likely to be progressed through an adapted form of the Large Onshore Transmission Investment (LOTI) mechanism, as waiting for the business plan and final determinations would not enable the progress on those projects we need to make in the coming months. Equally, there will be other strategic projects that are at too early a stage to be included in the business plan and will instead need to be progressed through an appropriate uncertainty mechanism during the RIIO-ET3 period.

Alongside this, the highly competitive and volatile supply chain environment is also impacting the level of cost confidence, meaning many investments may have a clear justification of ‘need’ that can be evidenced through the business plan, but final assessment of costs will need to be deferred to a later stage, when those costs can be determined with more certainty.

As a result, the TOs’ baseline plans will only cover a sub-set of the investments that need to be delivered during the RIIO-ET3 period and uncertainty mechanisms will remain a key feature of the framework.

Once the scope of work and allowances are determined, whether through the business plan and final determinations or through uncertainty mechanisms during the price control, we agree that a well-designed efficiency incentive will provide an ongoing incentive on companies to find better ways of delivering outcomes which reduce costs for consumers. However, it is important that overall value for consumers is maximised, and as we have seen with the ASTI projects, there will be circumstances where it is as important for projects to be accelerated as it is to drive cost efficiency.

Table OVQ28.1 below summarises our views on Ofgem’s proposed key objectives for truth-telling and efficiency incentives set out in the SSMC:

Table OVQ28.1: NG position on proposed key objectives for truth-telling and efficiency incentives

Ofgem objectives:	NG position:
Truth-telling	
Supports business plan information that enables Ofgem to set the price control effectively	We agree – a well-designed truth-telling incentive can ensure network companies provide robust and complete information to justify the work they plan to deliver. Evidence of deliverability should also be a key element of the information provided to ensure Ofgem and other stakeholders can be confident the networks can and will deliver what they include in their plan.
Supports ambitious cost forecasts	<p>Cost efficiency is important, but the focus should be on plans which maximise value for consumers. For example, in the ASTI framework, Ofgem has recognised that the value generated for consumers by accelerating delivery to minimise constraint costs is the most important driver for networks. Any RIIO-ET3 truth telling and efficiency incentive must not cut across other parts of the regime which is focussing networks on the value they create for consumers. Costs may be higher in the future, to meet rising consumer expectations in the environment (e.g. more expensive SF6 free equipment, low carbon concrete and steel) or to fund the transformative new ways of working (e.g. extended-hour contracts). These kind of initiatives are generating value for consumers and the efficiency and truth telling incentives must not disincentivise networks to build such actions into their plans.</p> <p>Ambitious cost forecasts need to reflect the volatile and rising prices coming from a supply chain environment It is critical that the costs included in the business plans are realistic, fair and justified against independent data wherever possible. Incentives should be used to target and reward savings against those forecast costs. Where there is cost uncertainty, Ofgem should focus on the steps network companies are taking in consumers’ interests to reduce / mitigate / manage such uncertainty, and when and how such costs should be set, if not included in baseline allowances.</p>
Supports ambitious output proposals that go beyond baseline expectations	We agree – the scale of what electricity network companies will need to deliver during the RIIO-ET3 period to meet Ofgem’s four key outcomes, including to keep on track the stretching government targets for 2030 (50GW of offshore wind), 2035 (decarbonised energy system) and 2050 (net zero economy), alongside increased

Ofgem objectives:	NG position:
	<p>external threats (cyber, climate, geo-political) means even the 'baseline expectations' will be highly ambitious.</p> <p>It is also important that in planning and delivering the investments to keep these major outcomes on track, we are also focussing on how we are delivering and creating additional value where it is within our control. This includes environmental benefits, whole-system solutions developed with relevant inputs from other TOs, DNOs and the NESO, creating high option value in what we deliver (i.e. it is the right thing for as many potential future scenarios as possible), digitalising our assets and systems, attracting the right talent, creating a diverse, equitable and inclusive workplace, and testing and using ambitious and innovative delivery approaches.</p>
Efficiency incentive	
Incentivises efficient delivery of outputs in period	<p>We agree – an efficiency incentive should be designed so that the network company is sufficiently focussed on and rewarded for finding more efficient ways to deliver outputs or outcomes in the interests of consumers (and correspondingly, has to take a sufficient share of any overspend in order to be incentivised to avoid exceeding forecast expenditure). However, it is important to ensure that overall consumer value is maximised and any efficiency incentive must not cut across other parts of the framework which are focussing networks on maximising value, e.g. delivery incentives.</p> <p>There will be instances where it is in consumers' interests for the company to spend more to ensure the outputs / outcomes are delivered on time because any delay could lead to constraint costs or other financial impacts for consumers which would far outweigh any benefit from the company delivering within, or below the forecast expenditure.</p>
Shares benefits/risks from out/underperformance in a way that contributes to addressing information asymmetry	<p>We agree but consider that the efficiency incentive is only part of the framework design needed to meet this objective. While an efficiency incentive can contribute to addressing information asymmetry, most notably where it is possible to compare costs across similar network companies, factors such as the design of any 'truth-telling' incentive and the approach to cost assessment and ongoing reporting are more likely to contribute to addressing information asymmetry. Comparisons between networks is more likely to be possible at the distribution level given the significant difference in the size and nature of the three TOs' networks.</p>
Other desired features of truth-telling and efficiency incentives:	
Well targeted, simple and transparent	<p>We agree – the incentives and assessment process should also be as objective and transparent as possible. Unambiguous guidance should be available to network companies on a timely basis, providing companies with confidence on how they will be assessed against the incentive criteria.</p> <p>It is in consumers' interests that any business plan incentive, which sets minimum criteria must be based on a set of objective and evidencable requirements (which are set out sufficiently in advance) and not subject to subjective interpretation. This is in line with the principles of good incentive design. Incentives are most effective where companies are able to see how their actions will result in a favourable outcome from the incentive, and in doing so, deliver value for consumers. To ensure companies prepare plans that deliver value for consumers – this must be reflected in the business plan mechanism with a clear and objective set of requirements. If this is not the case, then the incentive will not have the desired properties or meet its objective.</p>
Requires a proportionate level of resource intensity, including development of the guidance, preparation of submissions and assessment of submissions	<p>We agree – focus and time should be spent on the data, information and evidence that allows Ofgem to have confidence that the planned work and associated costs are justified and in consumers' interests. However, guidance to network companies on how truth-telling and efficiency incentives will be applied should set out clear, consistent and objective criteria, which do not give undue scope for subjective interpretation.</p>

For the 'truth telling incentive', we think it is important that an evolved BPI ultimately encourages a business plan that reflects the investments that will deliver the outcomes consumers want and expect, and that can be successfully executed. Table OVQ28.2 below summarises the key features we think the business plan needs to achieve and how each one is in consumers' interests:

Table OVQ28.2: Key features business plans should achieve

Need to incentivise a business plan that:	This is in consumers' interests because it ensures:
<p>1. Sets out the investments (including anticipatory investments), supported by appropriate evidence (including stakeholder insights) and Cost Benefit Analysis (CBA) to justify the investments, that are necessary to ensure:</p> <ul style="list-style-type: none"> • a safe, reliable, resilient, high quality service is, and can be delivered by the network company today and in the future • government targets for energy security and the energy transition are met or on track to be met within required timeframes 	<p>Networks submit ambitious plans with the investments (including anticipatory investments) needed to consistently achieve the high quality service levels expected by consumers, as well as those needed to keep government targets for energy security and the energy transition on track and unlock the associated consumer benefits</p>
<p>2. Includes investments in things that consumers want and value, for example, environmental upgrades, resilience, sustainable construction methods, biodiversity net gain</p>	<p>Our stakeholder engagement has identified that, though long-term sustainable affordability remains a key focus, stakeholders also want to ensure our plans protect the environment and support net zero.</p>
<p>3. Is credibly deliverable by the network company, i.e. demonstrates the ambition and organisational capabilities required to deliver the plan and the investment needed for any new or additional capabilities / requirements are reflected in the plan</p>	<p>Networks are taking the necessary steps to transform themselves before and during RIIO-3 in terms of their size and capabilities. We will make unprecedented levels of investment, recruit and train a new workforce, adopt new ways of working, test and roll-out new technologies and continually seek to innovate further. These investments are necessary to support the delivery of the plan and unlock the associated consumer benefits (lower bills, more secure supplies and decarbonisation; by connecting more renewables and reducing constraint costs)</p>
<p>4. Includes realistic and fair forecasts of the level of investment that is required, justified against independent data wherever possible, or – if such forecasts cannot be provided – the process by which realistic and fair costs will be ascertained and agreed with Ofgem during the price control period</p>	<p>Consumers do not pay more than is necessary to deliver the expected outcomes within the expected timeframes</p>
<p>5. Does not include highly speculative or uncertain investments that cannot be justified, and identifies appropriate uncertainty mechanisms to allow recovery of costs for option development and for investments to be progressed as and when they become more certain</p>	<p>Investments are only progressed when there is sufficient evidence to justify proceeding, but mechanisms exist to ensure anticipatory investment is not delayed</p>
<p>6. Provides Ofgem with the information it needs to fairly and efficiently assess the plans without undue burdens on regulator, licensees or stakeholders</p>	<p>The regulator can carry out its role in a focussed and efficient manner</p>

OVQ29. What are your thoughts on our proposals relating to minimum requirements under an evolved BPI approach?

We agree with Ofgem's proposal to retain a list of minimum requirements and support this being focussed on providing a list of requirements that need to be included to ensure 'completeness' of the plan.

It is in consumers' interests that any business plan incentive, which sets minimum criteria must be based on a set of objective and evidencable requirements (which are set out sufficiently in advance) and not subject to subjective interpretation. This is in line with the principles of good incentive design. Incentives are most effective where companies are able to see how their actions will result in a favourable outcome from the incentive, and in doing so,

deliver value for consumers. To ensure companies prepare plans that deliver value for consumers – this must be reflected in the business plan mechanism with a clear and objective set of requirements. If this is not the case, then the incentive will not have the desired properties or meet its objective.

We agree that minimum requirements can be streamlined. They need to be:

- Focussed on the information Ofgem needs to fairly and efficiently assess the plans, without creating undue burdens for the regulator, licensees or stakeholders. With this objective in mind and Ofgem's proposal for this stage to be an assessment of completeness we propose that the following minimum requirements listed in RIIO-ET2 could be removed or materially rationalised:
 - Track record and business plan commitment
 - Maintaining a safe and resilient network
 - Whole systems
 - Competition
 - View of the future
 - Net zero target
 - Some of the electricity transmission specific requirements in RIIO-ET2 were not clearly articulated as minimum requirements and instead referred to consideration of evidence in the plan rather than a defined element of the plan, e.g. a strategy or explanation of approach.
- Clear, consistent, unambiguous and objective, so that network companies, in completing their plans, have a clear understanding of whether or not they have met the requirements and reduce the potential for subjective interpretation. Accompanying guidance should be available alongside the business plan data templates.
- Explicit as to the specific information and types of evidence which Ofgem expects in order to carry out its assessment of 'completeness' to avoid inadvertently setting a high bar for passing the standard required through being untargeted and open to interpretation in how to deliver against it. For example, in RIIO-ET2, the minimum requirements around the net zero target were not targeted and clear. Providing evidence of "robust and high quality engagement with stakeholders by the company in designing the plan" is reasonably open to different interpretations on what is needed in order to be viewed as 'complete'.
- Finalised on a timely basis to allow sufficient time for production of the business plans, and accompanied by timely guidance with opportunities for network companies to clarify requirements and test any areas that are open to interpretation with Ofgem. This could be done on a sectoral basis rather than with each network company to minimise any burden on Ofgem.

As the July 2024 submission is not a full business plan (and the business plan guidance that will set the targets is not yet available), it will only be possible for Ofgem to make an assessment on the minimum requirements on the final business plan submission in December 2024. We assume this will be the case unless Ofgem explicitly indicates otherwise in the Business Plan Guidance.

We agree that failure to meet minimum requirements should carry a penalty, but note the following:

- Given the overarching intent of the truth-telling incentive, penalties should be reserved for companies that are negligent / careless / wilfully fail to meet the minimum requirements, not for inadvertent misinterpretation of the business plan guidance. It is not in the interest of any stakeholders for network companies to submit incomplete or inadequate plans. There should be an opportunity for Ofgem to clarify, and network companies to fix genuine errors through the supplementary questions (SQs) process ahead of any decision on penalty.
- Ofgem should not penalise network companies if information gaps are acknowledged and suitably justified, with clarity on when and how incomplete information will be provided. There may be fair and valid reasons why a network company cannot provide all information with the business plan submission and to expect them to do so would risk sub-standard or unrealistic data being used which would affect the overall quality of the plan and would not be in consumers' interests.
- As in RIIO-ET2, Ofgem should apply a materiality test prior to imposing any penalties, and only impose penalties where failure to meet the minimum requirements results in a material adverse impact on Ofgem's ability to assess the company's business plan, and also materially prejudices consumer interests.

OVQ30. What are your thoughts on an 'in the round' assessment of cost forecasts as opposed to a high/lower confidence breakdown and assessment?

Unless Ofgem can share in advance a clear methodology for how an "in the round" cost assessment would work in practice, we would suggest that an approach similar to RIIO-ET2, where costs are assessed based on high and lower cost confidence is retained.

Within the SSMC, and within the working groups hosted by Ofgem to date, there have been few details of how an “in the round” cost assessment would work in practice. National Grid is concerned that without a clear methodology set out in advance, such an assessment would give Ofgem disproportionate discretion to make a decision which it considers expedient, without companies having a reasonable opportunity to provide sufficient evidence to establish high costs confidence. This would not be consistent with Ofgem’s statutory duty to have regard to the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed (s. 3A(5A) Electricity Act 1989).

If the RIIO-ET2 approach to assessing high and lower confidence costs is retained, Ofgem should take steps to ensure that the mechanism does not discriminate against NGET, by accepting other evidence on costs confidence beyond econometric benchmarking, which is less appropriate for TOs given that they engage in larger, less frequent, less standardised and less repeatable projects than distribution companies, and based on important differences between the networks of the TOs themselves.

Regardless of whether an “in the round” assessment of costs, or a breakdown of costs into high and lower confidence is adopted, we would welcome clarity from Ofgem in advance of the methodology and cost assessment models that Ofgem intends to apply. This is necessary to be consistent with Ofgem’s principles of being “transparent, accountable, proportionate, consistent⁵”. Within PR24, Ofwat shared cost assessment data sets and methodologies at an early stage, and we would welcome similar practice from Ofgem.

The assessment of cost forecasts for the BPI calculation should be consistent with the approach used for cost assessment across the whole submission. Within RIIO-ET2, the assessment of costs into high and lower confidence was used to calculate the Totex Incentive Mechanism sharing factor (via the CDIR).

OVQ31. What are your thoughts on an ‘in the round’ assessment of business plan ambition as opposed to requiring and assessing CVPs?

We are supportive of rewarding business plan ambitions where such ambitions maximise overall value for consumers: through enhanced stakeholder engagement, ambition above and beyond business as usual, and delivery of demonstrable value for consumers. We consider this can be achieved either through an ‘in the round’ assessment, or via a refined CVP process, and that for ET3, an ‘in the round assessment’ is more appropriate.

The CVP process that was in place for ET2 was refined and improved substantially for ED2. In particular, the introduction of a common social value framework helped DNOs to design appropriate CVPs, and helped in Ofgem’s assessment of such propositions. This was demonstrated through the higher acceptance rate of 13% for ED2, compared to 3% for transmission and gas distribution (as noted in para 7.8 of the SSMC).

If CVPs were retained, we think that they would be most effective with clear guidelines and a template that network companies should follow to ensure the information and type of proposals expected by Ofgem are being put forward. We agree that, if CVPs were retained, the refinements within 7.30 of the SSMC would be an improvement. However given the relatively short period before the ET3 submission in December 2024, substantive changes to the CVP process would pose challenges to network owners designing suitable propositions in the time available. Therefore for ET3, we support an “in the round assessment”, provided further information is provided by Ofgem on how this assessment will be undertaken in line with Ofgem’s statutory duty to have regard to the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed (s. 3A(5A) Electricity Act 1989).

As we have set out in our response to OVQ28, the scale of what TOs will need to deliver during the RIIO-ET3 period to meet Ofgem’s four key outcomes means even the baseline expectations will be highly ambitious. It includes keeping on track the stretching government targets for 2030 (50GW of offshore wind), 2035 (decarbonised energy system) and 2050 (net zero economy), alongside increased external threats (cyber, climate, geo-political).

It is also important that in planning and delivering the investments that will keep the major outcomes on track, we are also focussing on delivering additional value, including environmental benefits, whole-system solutions developed with relevant inputs from other TOs, DNOs and the NESO, creating high option value in what we deliver (i.e. it is the right thing for as many potential future scenarios as possible), digitalising our assets and systems, attracting the right talent, creating a diverse, equitable and inclusive workplace, and testing and using ambitious and innovative delivery approaches. Together, this will ensure the network is ‘fit for the future’.

Assessing whether TOs have demonstrated ‘business plan ambition’ will naturally be a more qualitative and subjective assessment, which we agree will be made ‘in the round’ based on the evidence presented by the TOs. It

⁵ <https://www.ofgem.gov.uk/publications/our-powers-and-duties>, 1.9

will therefore be important to develop some clear parameters against which Ofgem would make the assessment in order to provide as much transparency as possible, in line with Ofgem's objective for the incentive to be well-targeted, simple and transparent.

This could include Ofgem's assessment of ambition in areas such as:

- environmental ambition and biodiversity net gain
- workforce strategy
- digitalisation
- option value approach
- delivery models
- procurement strategy.

Given the subjective nature of such an assessment, we think it should be a reward-only component of the BPI. Introducing a penal element of such an unavoidably subjective assessment would not be consistent with the principles of good incentive design and therefore ineffective at creating consumer value.

NGET consider this 'in the round' approach to also be more reflective of Ofgem's desire to streamline the process. For RIIO-ET3 in particular, we think greater consumer value will be realised by the TOs focussing on developing complete, robust, well-evidenced and executable plans.

OVQ32. What are your thoughts on the size and strength of any truth telling incentive?

The strength of any truth telling incentive should be proportionate and linked to the value that a clear, well-defined and ambitious business plan brings for consumers. We think it is appropriate that the incentive remains structured as a percentage of the baseline totex included in the business plan rather than linked to the rate of return.

It is important that the strength of the truth telling incentive (i.e., the percentage of baseline totex for reward/penalty) is determined as part of the strength of the overall package of incentives. It is also important that the overall package provides appropriate opportunities for network companies to earn returns above the allowed return where they are delivering or unlocking additional value for consumers, which are equally balanced against a penalty system that will reduce returns for companies where they have failed to deliver the expected outcomes.

The overall risk/reward opportunity associated with the truth telling incentive and the overall package of incentives will need to be assessed as part of Ofgem's assessments of investability and financeability. If the incentive package is skewed too far in one direction, it is likely to impact on the outcome of these assessments.

We note that Ofwat has used a combination of reputational, financial and procedural incentives to support their quality and ambition assessment (QAA) incentive. Under the QAA, Ofwat has capped the financial element (at +/- 30 basis points (bps) of return on regulated equity). Ofwat recognised that this was slightly lower than the highest direct financial reward offered at PR19 but is only one component of what Ofwat viewed as a stronger overall package. This is based on the 'procedural incentives' Ofwat introduced, which provide protection for companies that achieve the top categorisation for the QAA from a reduction in the allowed return and for base cost allowances between draft and final determinations but allows them to benefit from increases in both allowances between draft and final determinations⁶. A similar combination of reputational, financial and procedural incentives could be used by Ofgem.

OVQ33. What are your thoughts on any alternative approaches that could be used instead of an evolved BPI?

We think the BPI structure used in RIIO-ET2 which applied a number of assessment stages could be evolved and updated to meet the points set out in our answer to OVQ28 and it is not necessary to adopt an entirely different incentive design. However, Ofgem must take a step back and design an evolved incentive which reflects the environment we are facing for RIIO-ET3 and not roll-forward an ET2 approach – which would not be fit for purpose in the new context.

For example, a two-stage incentive could be used. Stage 1 could continue to assess how 'complete' the business plan is, based on the company's completion of the 'minimum requirements'. Like the RIIO-ET2 mechanism, this stage could remain penalty only. The points we made in our responses to OVQ28 and OVQ29 on the minimum requirements would apply to this stage of the assessment.

A Stage 2 'ambition' assessment would then assess whether the plans were 'fit for the future'. As set out in our response to OVQ31, this could be assessed 'in the round', as Ofgem suggests, but we think it is important to determine some clear parameters against which this assessment would be made given it will be a subjective assessment. We think this should include an assessment of ambition in areas such as the following which link to the

⁶ https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24_final_methodology_Appendix_12_QAA.pdf

overall value networks create for consumers and on deliverability of plans (which reflect the confidence in the ability to deliver a plan which creates value for consumers):

- environmental ambition and biodiversity net gain
- workforce strategy
- digitalisation
- option value approach
- delivery models
- procurement strategy

A third stage could be considered which assesses whether the costs included in the plan represent fair, realistic and efficient costs. This assessment should reflect evidence from companies and not rely solely on econometric benchmarking as set out in a response to OVQ30. We do not think this should form part of the 'ambition' assessment, but to the extent costs are considered poorly justified, unfair, unrealistic or inefficient, this could lead to such costs and associated activities being excluded from the baseline and such costs being subject to a re-opener assessment under the RIIO-ET3 framework instead.

We are keen to have further engagement with Ofgem to develop the design of the truth telling incentive as Ofgem's proposed approach starts to take shape.

OVQ34. What are your thoughts on the options for calculating the sharing factors and do you see strong reasons for changing the overall strength of the sharing factors relative to RIIO-2?

The totex incentive mechanism (TIM) and setting of a sharing factor works well in incentivising efficient delivery of outcomes in period. It allows us to share the benefits of outperformance with consumers while protecting us from some risk of cost escalation, in turn reducing the impact this would otherwise have on increasing financing costs. A strong incentive must align our interests with those of consumers, offer a predictable outcome and we must be able to control the actions that drive the desired outcome.

Continuing to incentivise efficient delivery of investment is an important part of the regulatory toolkit. Over the RIIO-ET3 period we are forecasting a continuation and escalation of the current challenges to delivery brought about by tight global supply chains and increased deployment of infrastructure (see our separate Supply Chain Annex for further evidence). It is important that evidence of the environment under which we will be operating is accounted for in designing both the mechanism used to set the sharing factor and the resulting sharing factor itself. Increasingly, our ability to seek efficiencies through our supply chain is limited, reducing the scope for us to make savings on a well justified and efficient investment plan.

While there is scope for the efficiency incentive to address information asymmetry, the strength of this element of the incentive is subject to the degree to which an independent assessment of costs or comparative assessment of costs can be derived. We consider that for transmission this objective is of less importance than the objective to drive timely delivery, given the impact this has on lowering consumer bills is far greater than realising some minor operational efficiencies. Instead, we would expect Ofgem to focus on meeting this objective through its assessment of the evidence we present alongside our cost submission to demonstrate the factors we have considered in forecasting costs.

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. We support Ofgem's statement that if the RIIO-ET2 approach was used again it would require additional guidance to be issued.

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. For example, the price of HVAC cables has increased by 118% since 2020 and HVDC cable prices have gone up 400% over a similar period. The ability to use the confidence dependent incentive rate may be weakened by this. This links to our concerns about the approach to cost assessment as described elsewhere in this response. 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.

For the transmission price control we see risks in returning to using the Information Quality Incentive (IQI). For the objectives to be met it requires Ofgem to set allowances independent of companies' views which is more challenging for the transmission network and will be more challenging going forward due to the volatility we are seeing in contracted costs. The appropriateness of applying the IQI for distribution, where comparative cost assessment can be more widely applied in setting an independent cost forecast, should be considered as part of developing the methodology for RIIO-ED3.

In addition:

- We do not support using the Ofwat approach to set the sharing factor as it does not meet Ofgem's objectives for the TIM. The rate is set based on an overall assessment of the plan and is therefore not directly linked to an assessment of costs weakening the resulting sharing factor's ability to incentivise efficient delivery or address information asymmetry.
- Given the external supply chain environment and the volatility in prices, consideration should also be given to whether exposure to out- or underperformance should be subject to a cap and floor, as is being developed for projects in the ASTI process. A cap and floor should be applied where there is additional risk of costs falling above or below a forecast because the process has focussed on pace of delivery. It delivers benefits as it promotes a strong incentive to deliver efficiently but protects consumers against windfall gains and companies against the risk of losses.

Managing Uncertainty

Key messages:

- It is important to retain a suite of uncertainty mechanism so that changes can be adopted outside of the once-every-five-year price control review process.
- The opex escalator must be revised for electricity transmission. It is currently not fit for purpose and a change in approach is needed for RIIO-ET3. The systematic underfunding which it delivers – as a result of Ofgem's application of the opex escalator in recent re-opener decisions – presents a significant risk to investors and if unchanged could impact on the investability of the electricity transmission sector.
- We support the inclusion of an incentive as part of the coordinated adjustment mechanism and make suggestions on how this could be applied.
- We support most of Ofgem's high level proposals on changes to uncertainty mechanisms common across the network companies.
- We do not agree with consolidating the net zero related re-openers and the UIOLI allowance as having different triggers for the two mechanisms supports their different uses.

OVQ35. Do you agree with our proposal to retain the Net Zero Re-opener with its current scope and parameters for RIIO-3?

We agree with the proposal to retain the net zero re-opener as it is beneficial to have this backstop in place to address current unknowns in areas related to the delivery of net zero.

We recommend that the re-opener should be able to be triggered through direction from the Net Zero Advisory Group. Its role is to consider potential proposals for anticipatory funding and delivery of strategic innovation funding arrangements. We would also like the ability to put forward a recommendation to Ofgem to trigger the re-opener in the event that there is a material change from a global event that cannot be foreseen ahead of starting RIIO-3.

We also consider that, while the range of triggers are broad, there is an opportunity to incorporate scope from global guidance, for example commitments from the COP nature conferences that happen every two years to address the key drivers of nature loss, or the Science Based Targets Network.

OVQ36. What are your views on our proposal, in principle, to retain the Net Zero and Re-opener Development Fund UIOLI for RIIO-3? What are your views on the types of projects it could fund and how it would interact with other sector specific price control mechanisms?

We agree with the proposal to retain the Net Zero and Re-opener Development Fund UIOLI (NZARD Fund) for RIIO-3. However, learning the lessons from the RIIO-ET2 period, to enable network companies to make the best use of the NZARD Fund we consider that the scope and principles for how it can be used should be broadened.

The current scope allows for network companies to undertake early development work on a project prior to submitting a full funding request through a re-opener. We consider that this optionality should remain, however the current financial threshold should be removed to allow this to be accessed by all projects.

We consider that the NZARD Fund should be able to be used to fund early development of activities to address environmental and nature challenges ahead of identifying the final solution that would be funded through a reopener, such as identifying the appropriate interventions to deliver improvement and restoration of the marine habitat. We

also think this can be used to support the development of technology use in construction that will reduce carbon. The NZARD Fund would not be available for projects being progressed through any other mechanism or reopener that triggers pre-construction funding (PCF) or early-construction funding (ECF).

OVQ37. Do you think we should retain the NZASP for GD and GT? What should its scope be and what kind of projects would you expect to be funded through this re-opener in RIIO-3?

We have not responded to this question.

OVQ38. Do you have any views on consolidating the net zero related re-openers and the UIOLI allowance?

For NGET, we do not agree with the consolidation of the Net Zero re-opener referenced in OVQ35 and the UIOLI allowance referenced in OVQ36. The two mechanisms have different triggers, and as the first is currently only able to be triggered by Ofgem (note response in OVQ35 which requests an expansion of triggers), we think for clarity these two should remain separate.

OVQ39. Do you agree with our proposed position to retain the Coordinated Adjustment Mechanism for RIIO-3? If it were to be retained, what design and incentive considerations could we implement to enhance the utilisation and value of this mechanism?

We agree with Ofgem's position to retain the Coordinated Adjustment Mechanism (CAM) for RIIO-3 and support the proposal to introduce an incentive to encourage its utilisation. We think this will support effective use of the mechanism to realise value for consumers. We also propose some improvements that may aid the utilisation of the CAM.

Network companies are required to develop and maintain an economic, efficient, and coordinated network, compliant with applicable standards and licence requirements. DNOs and TOs are increasingly working together to optimise network design, and this feeds through to the development of the business plans submitted to Ofgem.

As the energy system transitions, effective collaboration and innovation across the whole energy system requires a step change in how investments are made and how the system is operated to ensure the most efficient solutions are developed and deployed, in the interests of maintaining a safe, secure, resilient, and affordable system for existing and future consumers.

We already take a whole-system approach to our business planning and this will be evidenced in our business plans, including demonstrating how we comply with the obligations outlined in the Whole Electricity System Licence condition. For example, we use several internal modelling software and techniques (such as our "Neptune" and "Triton" models) which allow us to optimise designs of high voltage lines at the transmission and distribution interface, supported by DNO engagement, data and insights, as well as local stakeholder insights, to ensure the overall design optimises investment cost(s) between networks for consumers and the local communities and environment affected by the investments.

The reopener is an appropriate mechanism for allowing timely reallocation of responsibilities when they are identified over the course of a price control period. It also helps address the fact that price control periods are different across electricity transmission and electricity distribution.

Ofgem notes that some licensees have signalled that there is a lack of incentive to use the CAM as it currently exists, given the work involved in reallocating allowances from one licensee to another (paragraph 8.30 of the SSMC Overview Document). Ofgem also notes that it thinks "there is scope for more incentives that encourage network companies to co-ordinate with each other more effectively to provide better outcomes for consumers" (paragraph 6.90 of the SSMC Overview Document). We agree with both of these points. There are additional costs involved in exploring whole-system solutions over and above our licence obligations and post business plan submission, for example additional resource, time, and risks, that are not accounted for in cost allowances. As well as cost(s) required to explore whole-system solutions post business plan approval there is also a disincentive on network companies to give up their allowances, rate of return and potential to outperform (acknowledging that they also transfer their delivery risk associated with these outputs).

We propose that as per the existing CAM, where consumer benefit is identified via an industry recognised Cost Benefit Analysis (CBA), there is a reallocation of responsibility for an activity from one network licensee to another. We propose that the efficient costs incurred from identifying a solution over and above respective licence obligations would be recovered by the TOs and these costs would be considered as part of the CBA process.

Alongside the operation of the CAM reopener, a financial incentive should be implemented where the associated benefit of the solution is shared on a proportional basis between the relevant network licensees and consumers via an agreed sharing factor. The network assigned responsibility for delivering the whole-system solution would continue to

be subject to their specific obligations under the Totex Incentive Mechanism (TIM) for any efficiencies gained during the construction, operations etc. A similar approach is used in the SO:TO incentive. Under the SO:TO incentive 10% of the average of the forecast and outturn benefit (measured as the constraint cost saving) is kept by the network company and 90% is passed to the consumer.

We have set out the following design features that we think should be incorporated into a new CAM design with a financial incentive but are keen to develop the proposals further with Ofgem and other TOs/DNOs.

- **Benefits assessment:** We propose that all network licensees use industry standard CBAs approved by Ofgem as part of a submission. Guidance on what Ofgem considers reasonable evidence will be important as benefits could be broad and ensuring we have established approaches for demonstrating these benefits will reduce the regulatory burden of the assessment process for all parties. The ex-ante forecast savings (benefit) that arises from the CBA should be adjusted for the ex-post costs of the licensee delivering the transferred outputs or project.
- **Sharing factor:** We propose that an appropriate sharing factor would be 80:20 in favour of consumers. This would mean consumers receive 80% of the benefit forecast with 20% retained by the licensees, split evenly between them (10% each). This applies the same sharing factor as the SO:TO incentive, save that for the SO:TO there is only one network licensee whereas the CAM mechanism will have two network licensees, meaning the network company share is 20% (10% for each licensee). We think the 10% share to the network company applied to the SO:TO incentive is of sufficient strength to influence behaviour. It is proportionate, fair and would encourage greater use of the CAM by providing certainty over the level of (and minimum) reward in order for the TOs to undertake the additional work involved in exploring solutions over and above respective licence obligations.
- **Caps and collars:** The proposed incentive should not have a cap or collar and should be asymmetric with upside only (no downside penalty). This reflects the successful design of the SO:TO incentive which has delivered significant value for consumers' since its introduction.
- **Application Window:** Currently the CAM can only be exercised in a limited annual window (23-29 May each year). This creates a disincentive as the timing of the narrow window is unlikely to align with the timeframes in which an opportunity suited to the CAM might arise or the resource is available to explore it. Increasing the frequency of the application windows (perhaps with a process open all year round, or specific windows in each quarter) would provide more flexibility and better support the often ad-hoc nature of the opportunities that might be suited to the CAM.

The CAM only works if relevant network licensees have the resources available to coordinate at the relevant time. In addition to the incentive, it will be important that licensees have the necessary resources, capabilities and systems to engage on whole system thinking. A CAM re-opener application should come from a single licensee but must contain a statement of agreement between the licensee who was originally assigned the responsibility and associated revenues for the output or project and the licensee who the responsibility is being transferred to.

OVQ40. Do you agree with our proposal to allow physical security costs to be submitted through a broader resilience re-opener?

We agree with the proposal to allow physical security costs to be submitted through a broader resilience re-opener. This simplifies the framework. Given that DESNZ is currently in the process of reviewing its physical security policy with a view to publishing updated guidance in spring 2024, we think it is important to have a reopener on physical security to allow network companies time to consider the impact, including associated investment proposals, of the updated guidelines. Also, when considering reinforcing physical security of Critical Network Infrastructure (CNI), there tends to be a requirement for other resilience investments such as increased cyber security and digital capability enhancements. It is therefore appropriate for these often associated network resilience investments to be included under one resilience reopener.

OVQ41. Do you agree with our proposed approach to introduce a resilience re-opener?

We welcome and agree with the proposal to introduce a resilience reopener to address the current uncertainty in what works may be carried out over a price control period that could not have been predicted when submitting our business plans. Some of the challenges experienced with Storm Arwen highlighted the need for an ability to change at pace that could not have been foreseen at the start of the price control. There is also significant uncertainty around the need, scope, and timing for network company investment to comply with future resilience standards. More generally, threats to resilience and resilience policy updates do not always align with regulatory periods, as noted in paragraph 8.53. There is therefore a need for an uncertainty mechanism to enable network companies to respond to standards updates, changing threats and new legislation that may happen within the price control.

We welcome the proposal for Ofgem to work with network companies and stakeholders through relevant working groups to determine the appropriate scope, trigger and re-opener windows for the proposed reopener. Our initial view is that the scope of the re-opener should be broad and not be limited to a single submission window per year. This reflects the fact that resilience is a broad subject encompassing physical security, cyber resilience, climate resilience as well as operational resilience so flexibility is warranted. The triggers for a re-opener should go beyond government and NESO requirements, as alluded to in paragraph 8.49 of the SSMC overview document. Taking learnings from our experience of reopeners during RIIO-ET2 we recommend the following:

1. Length and frequency of the reopener window. Reopener windows for RIIO-ET2 are set at five working days. Regulatory submissions are generally timed to avoid winter pressures but as a consequence have often fallen during times of high levels of annual leave / bank holidays. We recommend therefore that the submission window be open for a month to bring greater flexibility. Informally (as is the case today), TOs can confirm their intent to Ofgem around when the submission will be made within the window to support Ofgem's resource planning. Additionally, greater flexibility on when a re-opener claim can be submitted within a year would be welcome.

2. Guidance on the form and format of reopener submissions. Comparable RIIO-ET2 reopeners have been principally capex based. Construction of re-opener submissions follow an established internal methodology typical of capex investments with a high percentage of investment procured. During ET3 NGET's operational network resilience investment will optimise these ET2 capex investments and develop digital tooling, capabilities, and insights to maximise their efficiency. This will result in a changing allowance mix between capex and opex and therefore we recommend updated guidance to reflect this changing profile. The changing nature of resilience requirements means it can be difficult to predict the precise nature of what capabilities and digital technology solutions may be required. We'd welcome the opportunity to work with Ofgem to create revised guidance for making submissions related to technology and capability resilience investments. Our strong preference is to find a regulatory approach which balances confidence in the technological capability and agility to evolve with market changes to achieve best consumer value.

3. Securing needs case approval at pace to progress investments. RIIO-ET2 reopeners have taken on average 12 months to conclude between submission and licence drafting. They are resource intensive for both Ofgem and companies. This presents a risk to investments, where you have the compounded impact of Ofgem expecting complete cost certainty (which delays submissions being made) and then a 12-month determination period. To ensure companies can maintain resilience standards in an increasingly complex landscape we'd like to develop new guidance to support demonstration of need to strike a better balance between delivering at pace while ensuring transparency of consumer value and costs.

OVQ42. Do you have any views on whether the opex escalator should be retained and if so, how we could evolve the opex escalator for RIIO-3?

This is an NGET response solely focussed on the electricity transmission framework and therefore should not be precedent setting for electricity distribution. Development of the Indirect Scalar in ED will require further consideration in the ED SSMC.

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 systematic underfunding which it delivers – as a result of Ofgem's application of the opex escalator in recent re-opener decisions – presents a significant risk to investors and if unchanged could impact on the investability of the electricity transmission sector.

As stated in ETQ35, we are also concerned about Ofgem's recent assertion at the 7th February Indirect Cost Assessment Working Group (CAWG) that T1 data should be restated for contractor indirects, and if such data is unavailable then a justified "allocation methodology" should be given as a percentage for these contractor indirects. We believe this is not a robust precedent for cost assessment of indirect allowances through the current OE on uncertainty mechanisms, and that data gaps such as unavailable splits for projects from a decade ago, could lead Ofgem to inaccurate conclusions on what is the efficient percentage for contractor indirects.

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 OE established in RIIO-ET2 was based on regression analysis which was undertaken using historical data provided by TOs in their RIIO-ET2 BPDts. This data was submitted based on Ofgem's regulatory instructions and guidance (RIGs) at that time. This allowed for delivery contractors' costs to be mapped to Direct Capex unless costs which are now considered to be 'indirect' by Ofgem had been separately invoiced. Costs had not been separately invoiced and therefore none of the TOs mapped any of their delivery contractor costs to CAI. The regressed percentage therefore only reflected TOs' capitalised indirect (CAI) costs (plus a small percentage uplift for network operating costs).

Ofgem claim that TOs were fully aware of the intended operation of the OE, but at Final Determinations Ofgem stated that the OE would *“provide ETOs with opex allowances when capex allowances are funded through the relevant UM and ensures that those opex allowances are consistent with those set for baseline allowances”* – baseline allowances which included contractor indirects in the capex assessment. Had TOs known that Ofgem intended the OE to cover contractor ‘indirects’, we could not have accepted NGET’s RIIO-ET2 Final Determination because it has created a material funding gap on top of the applied capex efficiency challenge.

This issue is currently playing out across RIIO-ET2 Medium Sized Investment Project (MSIP) re-openers where, to date, we have seen a 15%-20% funding gap for indirect costs. Whilst we acknowledge positive steps taken in proposing the introduction of an ET2 true up for affected re-openers, the proposal made by Ofgem is not currently acceptable. We believe that it is in the interests of consumers that the issue is resolved and a reworked OE is delivered for the RIIO-ET3 framework. We therefore make the following proposal on how to reform the opex escalator:

- As a first step, the capex cost assessment model should assess capitalised indirects with direct capex because:
 - It is the gross capex cost to which customers are ultimately exposed.
 - The alternative approach could create perverse incentives which increase consumer costs. For example, it would be wrong for TOs to be incentivised to choose a contracting strategy with lower indirect costs if this is not the economic and efficient strategy in the round.
 - From a practical perspective, we do not hold a split of historical contractor indirect costs, so we do not have data upon which to estimate a percentage. The definition for contractor indirects is still evolving and has not yet been published, so we are highly unlikely to have a statistically robust data set for RIIO-ET3.
 - From the recent examples where we have data, we can see that the total percentage of indirects varies widely from ~12% to 62%, and we have some non-asset projects such as pre-construction activities where indirects are 100%. The basic premise of regression modelling (that there is an efficient percentage for indirects compared to direct capex) is therefore flawed for transmission projects.
- If capitalised indirects (CAI) are assessed as capex, this leaves TOs’ Opex CAI and Business Support Costs as remaining indirect costs. 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. We propose a formulaic automatic volume driver based on the additional work required in addition to baseline allowances. 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.

OVQ43. Do you have any views on how we should effectively monitor the delivery of UMs?

Any monitoring regime should seek to limit the regulatory burden on Ofgem, network companies and those stakeholders interested in the areas covered by uncertainty mechanisms. Continued clarity in the guidance provided by Ofgem on both uncertainty mechanism claims and in annual reporting requirements is key to ensuring scope for misinterpretation is limited.

We are of the view that our existing governance processes are appropriate and proportionate to ensure the information we provide is accurate and in line with guidance. Complexity would be introduced through the need to introduce further guidance and a methodology around how and when any proposed allowances would be introduced and how these reductions would be calibrated. This regulatory complexity can be avoided through clearer guidance related to the uncertainty and reporting requirements.

The proposed role of the Independent Technical Advisor (ITA) will also support giving Ofgem assurance on the submissions where it is used. Where the ITA is used, Ofgem must not duplicate efforts with internal resources which will risk delays to TOs progressing projects, create additional resource burdens for them, and create opportunity costs for Ofgem resources which could focus on other areas of work.

We do not support the proposal to reduce allowances for companies that provide inconsistent data. This would create additional complexity and be subjective in its application.

Cost of Service

Key messages:

- Real price effects and ongoing efficiency are important parts of the regulatory toolkit in managing cost pressures and therefore risk.
- The RIIO-2 approach to RPEs is appropriate to apply for RIIO-3. But the application of the RPE approach should incorporate indices that best represent the cost pressures the industry will face going forward.
- We would expect the application of the ongoing efficiency methodology to reflect evidence of productivity improvements in similar industries, not make seek to make adjustments that cannot be directly linked to the potential for an efficient company to move the efficiency frontier.
- Given the supply chain environment and the potential for reopeners to agree allowances for costs that will be faced some years into the future we support inclusion of RPEs in reopener submissions.

OVQ44. Do you have any views on whether to evolve the RIIO-2 methodologies for RPEs and ongoing efficiency for RIIO-3, and if so how?

The energy transition will require significant growth and transformation across the global energy sector placing significant demands on the supply chain. The increased demand comes alongside wider economic and geo-political events, creating an increasingly challenging supply chain and procurement environment (see our separate Supply Chain Annex for further evidence). The impacts of these disruptions are already affecting our operations and planning. We are taking proactive steps to mitigate the challenges which include long lead times, insufficient market capacity, a lack of tender participants, volatile and rising costs and less favourable contract terms.

While we are taking proactive steps, and will continue to seek innovative approaches to manage these challenges, it is important that the regulatory framework supports the management of these risks to deliver best value for consumers. Real price effects are one such tool, but by no means a silver bullet.

The methodologies and assumptions used to set real price effects (RPEs) and ongoing efficiency are important parts of the regulatory toolkit in managing risk. The RIIO-2 approach to RPEs is appropriate to apply for RIIO-3.

But the assumptions used and the application of the approach must be updated to reflect the latest evidence available:

- To better match the cost pressures that suppliers are passing through to us, the choice of indices can better reflect the contractual terms our supply chain are accepting. Criteria for selecting which indices to use should include ensuring that the indices are:
 - relevant to the sector, including evidence of their application in contracts
 - from sources that can evidence that they pass data quality tests, e.g. sample size, length of time series available.
- The weighting of indices should reflect the forecast mix of activity over the RIIO-3 period, which may vary from historical trends.
- All areas of cost where a representative index can be identified should be subject to the RPE mechanism. Some cost categories may be relatively minor in the basket of goods and services we purchase. But if they make up a different proportion of our purchases from that represented by the general inflation measure (CPIH) then applying an RPE offers protection to consumers from windfall gains as well as protection for network companies. A materiality test should therefore not be applied.
- RPEs should be set based on the proportion of our own costs in each category where an RPE is set. Representing the mix of activities NGET will be undertaking over the period, rather than forcing consistency in input categories across transmission (via a notional structure), helps reduce the risk of windfall gains or losses.

For electricity transmission we will submit evidence on the RPEs as part of our business plan submission. We expect to draw on evidence of the indices being used as part of contract settlements with our supply chain. Initial analysis suggests that the following indices may be relevant (including the indices that apply to the current price control):

- Labour
 - ONS: average weekly earnings (AWE) for the private sector, AWE for the construction sector
 - BCIS: price adjustment formulae indices (PAFI) for civil engineering labour, electrical engineering labour
 - BEAMA: electrical engineering labour

- **Materials**
 - BCIS: electrical engineering materials, infrastructure materials, Structural steelworks – materials: civil engineering work, PAFI copper pipeline
 - Consideration should also be given to using raw material indices for major cost categories, e.g. copper, steel, aluminium.
- **Plant and equipment**
 - BCIS: Purchased Plant
 - BEAMA: basic electrical equipment

We support the inclusion of a justified ongoing efficiency assumption in the process of setting efficient cost allowances. We will submit costs that demonstrate our commitment to continued efficiency even under circumstances which require material increases in the volume of activity expected from us and in a tight supply chain environment (see our separate Supply Chain Annex for further evidence).

We would expect, in assessing the validity of our cost movements capturing ongoing efficiency, for Ofgem to consider:

- evidence of past productivity improvements in similar industries
- look across representative timescales when assessing historical data
- consider the potential for productivity improvements in opex and capex separately
- not make adjustments that cannot be directly link to the potential for an efficient company to move the efficiency frontier.

As noted above, it is important that in setting an ongoing efficiency assumption Ofgem uses real world evidence, both from the energy sector and assesses the broader macro-economic environment. Productivity in the energy sector and comparable sectors has shown little to no improvement over the past ten years. The ability of some sectors of the economy, which are very different in nature from the energy sector, to achieve higher productivity improvements in the past is not evidence of what energy network companies can do going forward. The Office of Budget Responsibility, in its latest economic and fiscal outlook, points to a weaker near-term outlook for total factor productivity growth.⁷

Due attention should be paid to the creation of business plan submission reporting requirements to ensure that efficiencies and RPEs are not double counted, i.e. that time series costs are either submitted by companies with or without assumptions applied and that the approach taken is clear to all.

OVQ45. Do you have any views on the potential application of RPEs and ongoing efficiency to re-opener applications?

We consider that applying an RPE index in reopener assessments is well justified. Adjusting unit costs used in volume drivers for RPEs is also important. The challenging supply chain environment (see our separate Supply Chain Annex for further evidence), and the potential for reopeners to agree allowances for costs that will be faced some years into the future mean that increasingly costs are less predictable than they have been in the past. An RPE index offers a mechanism to help manage risk which benefits consumers by:

- reducing the potential for windfall gains to be made if forecast costs including expected price changes that are used to set allowances turn out to be higher than the costs faced
- reducing overall risk which in turn impacts on the cost of financing the company.

Learning from the current Accelerated Strategic Transmission Investment (ASTI) process, we would expect to be able to evidence the contractual arrangements with our supply chain as evidence for an appropriate RPE index as part of a reopener application. As any index is imperfect at tracking costs we also consider it important to retain a cost and output adjusting event mechanism for all projects progressed through any reopener application/mechanism.

The inclusion of RPEs as part of the reopener process should be accompanied by guidance on what evidence Ofgem would expect to see as part of reopener claims and to which types of reopeners they would apply. This guidance should differentiate between the evidence and applicability of RPEs for different types of reopener claims. For example, there is justification for the treatment varying between a reopener for multi-billion pound projects and a reopener for smaller value works. A proportionate approach will be important to minimise the resource pressures which Ofgem will face when processing reopener applications and support timely decision making.

⁷ Office of Budget Responsibility (2023), Economic and fiscal outlook – November 2023

It is not appropriate to separately set an adjustment for ongoing efficiency through the reopener process. Ofgem will be assessing the efficiency of costs submitted through reopeners and our forecast cost submissions will take into account, and evidence, the scope for efficiencies going forward. On the basis that many of the cost submissions through reopeners will be based on market tested rates. To seek to set a standard assumption for reopener applications would add unnecessary time and complexity to the process. The RIIO-ET3 period will require us, other electricity network companies and Ofgem to work efficiently and at pace to support the transition to a low carbon economy. There will therefore be an increasing need to use the reopener process and it must therefore be as streamlined as possible.

Cyber Security

OVQ46. Do you agree with our proposed approach to cyber resilience in RIIO-3?

Our response to OVQ46 is set out in a separate confidential annex.

Innovation

Key messages:

- We welcome Ofgem's proposal to include a financial innovation stimulus package for RIIO-ET3 and consider that both the NIA and SIF funding mechanisms should be retained.
- In addition to our extensive innovation work through both NIA, SIF and previous funding mechanisms, National Grid is already doing more in the innovation space than what is required by RIIO, including multi-million pound non-regulatory investment in innovation, support through National Grid Partners, showcasing through National Grid's Innovation Day, and delivering the National Grid Group Innovation Strategy.
- There are a number of clear opportunities to improve the operation of the NIA and SIF that would enhance their ability to support innovation in the interests of consumers.
- We are comfortable that the overall regulated innovation funding level remain similar to ET2 (adjusted for inflation) to continue to enable innovation towards the goal of net zero and for the benefit of consumers.
- We think the current mechanisms already allow for a high level of third-party involvement, which we support. To strengthen third party involvement, we think some of the regulatory boundaries need addressing that would affect our ability to unlock the full benefit of SME's inputs (e.g. funding the necessary resource).
- We think there are existing mechanisms that could be capitalised to accelerate innovation, for example, National Grid Partners, ENA Basecamp for enabling working with SMEs and other accelerators such as Energy System Catapult. We do not support the use of consumer funds for an accelerator which duplicates an existing mechanism. We would like to work constructively with Ofgem to better support startups.
- Funding between price controls should be improved to prevent stop/start innovation, to reflect the nature of innovation opportunities which can arise at any time during the price control period and to ensure that longer-term innovation projects are not excluded.
- We agree with Ofgem's aspirations for the FRS. We believe the purpose of the FRS is to trial regulatory mechanisms to drive outputs and that it should not be used to test specific innovation solutions.
- We welcome the inclusion of an innovation rollout mechanism to enable faster rollout of mature ideas that are ready for 'BAU' implementation.

OVQ47. Do you have any views on our proposal to retain a flexible allowance, providing evidence for why you think that it should, or should not be, retained?

We agree that a flexible innovation allowance such as NIA should be retained alongside a competitive allowance such as SIF.

NIA and SIF serve different purposes and deliver distinct innovation learnings and outcomes:

- NIA allows for fast and agile innovation across a range of technology readiness levels (TRLs) that enables long term innovation beyond price controls; and

- SIF provides funding for larger, multi stakeholder, multi-year system trials.

We don't agree that the NIA requires an application or monitoring process and would be concerned that addition of such a process would make the NIA burdensome. We are, however, open to and supportive of improving the reporting process and methods of measuring success and rollout for innovation within NIA.

Evidence to support retention of the NIA:

1. The NIA has been a successful funding mechanism for both NGET and NGED, unlocking significant benefit for consumers:

- NGET received £54m NIA funding for RIIO-ET2. Since the start of ET2, NGET has 52 active NIA projects. 92% of the funding is committed to be spent and sits with projects that are in delivery, initiation (contracting) or idea pipeline stages. NGET expects to spend the full RIIO-ET2 NIA budget. The projects span over 50 project partners from academia to technology providers and include a wide and well distributed range of TRL levels with a total projected return on investment across the NIA portfolio of 35x the value of investment put in – when these benefits are realised this will benefit consumers through a range of project outcomes i.e. cost savings, efficiencies, reduced outages etc. NGET also has examples of NIA projects implemented into BAU which are already adding value, such as SF6 leak sealing technology, SF6 retro filling, drone and AI inspection of OHL tower steelwork, and synthetic ester transformers, with more BAU implementation to follow as RIIO-ET2 progresses and more projects are delivered.
- NGED received £42M of NIA funding in RIIO-ED1 and delivered 72 NIA projects within that period. As part of RIIO-ED2, NGED submitted several engineering justifications that rolled-out NIA innovation projects/learning into business as usual (BAU), delivering benefits to consumers that would not have been possible if NIA not been available. For example:
 - Engineering Justification Paper (EJP) 152 was approved by Ofgem with a benefit to consumers of £94m, which would not have been possible without NIA project “Entire” which pioneered the use of DSO flexibility.
 - EJP032 demonstrated how we could save £38m for consumers by using a private LTE communication network. This EJP was approved by Ofgem, and we are now awaiting Ofcom agreement to proceed. This was enabled by the NIA project on LTE next generation communications and its predecessor which was also an NIA, “next generation telecoms analysis”.
 - EJP100 demonstrated how we could save £22m for consumers by using smart meters to estimate the loading on our LV network. This was enabled by the NIA project SMITN (Smart Meter Innovations and Test Network).

2. The ENA have identified benefits of the NIA and the value of retaining a flexible funding allowance:

The ENA's Annual Innovation Summary Report⁸ highlights some of the distinct benefits of NIA, such as the agility, flexibility, self-governance, de-risking innovation by enabling lower TRL projects, and complimenting SIF which can build off learnings from NIA research.

3. Our practical experience has highlighted several wider benefits of the current NIA flexible funding mechanism:

- Consumer benefit
 - NIA delivers research and low overhead innovation (in comparison to SIF) and high reward (greater than 2x leverage). Removing NIA would mean this benefit would diminish and the cost of innovation would increase for the consumer.
- Flexibility and agility
 - NIA funding allows networks to start projects quickly without having to wait for application windows, which can delay realising benefits for consumers.
 - Flexibility also ensures we can efficiently resource innovation because we can spread the load throughout the price control. Removal of NIA for a mechanism such as SIF alone means that we would not deliver as much innovation in a flexible manner.
- Network collaboration
 - With a common funding source across the industry, it has enabled greater opportunities for collaboration on common problems e.g. SF6 working group. This helps minimise duplication and can deliver outcomes more quickly for consumers. For example, NGET's SF6 leak sealing innovation is deployed as BAU within NGET, and is now being used by other networks as an example of sharing and collaboration.

⁸ <https://smarter.energy/networks.org/media/lmspbccq4/fy23-ena-annual-innovation-summary-report-final-version.pdf>

- The ENA coordinates the Innovation Managers' working group which also provides scrutiny over the NIA requirements and promotes network collaboration. This aims to mitigate duplications or overlapping innovation and promotes strong collaboration between networks.

Key characteristics and improvements that could be made to the NIA:

The following areas are essential to maintain within any future flexible regulated funding mechanisms to ensure continued effectiveness and success:

- Introduce self-governance which:
 - Enables networks to manage a rapidly evolving landscape and give consumers and network customers support at times when they need it the most. This level of flexibility is not achievable through other funding sources currently available.
 - Allows innovation to be delivered at pace in the form of many, relatively small projects. This promotes the rapid dissemination of ideas and enables quick development of solutions. Results are gleaned more quickly which can feed a continued, positive innovation cycle building on previous work in an incremental approach resulting in enhanced shared networks' understanding.
 - Allows for innovation teams to be practically and consistently resourced by networks and other parties we innovate with (e.g. SMEs, academics) – the NIA framework provides this currently. The NIA drives a baseline of innovation and enables networks to retain dedicated innovation teams. Removal of the NIA would make it harder for networks to consistently resource staff and prioritise them to focus on innovation that would accelerate GB's decarbonisation targets.
- Accommodate different TRL levels and deployment timescales including the ability to undertake early-stage research and drive positive action from the research.
- Drive an open innovation culture and process between networks and other parties to ensure consumer benefit.
- Employ a broad scope innovation criterion that builds on the supporting energy system transition and vulnerable consumers criteria. We would welcome a review of the NIA criteria as well as the opportunity to engage with Ofgem on the creation of updated criteria.
- Provide transparent and open reporting of innovation projects. National Grid are open to a review and improvements to the current reporting process and innovation measurement framework process.

We believe the NIA could be improved for RII-ET3 by:

- Broadening the scope of NIA to address all of aspects of moving to a net zero society. This could drive additional consumer value, for example to include innovation around reliability of network assets which brings consumer value in several possible ways, such as reduced outages, reduced costs by avoiding need for premature asset replacement etc. We also see value in broadening scope to include areas such as: impact of climate change on assets, avoidance of curtailment, mitigate the effect of power cuts on a society that is more dependent on electricity etc. We think these areas create benefit, but we would like assurance from Ofgem that they agree they are within scope of the NIA. We would be disinclined to fund these areas ourselves because:
 - The benefits from the ED interruptions incentive scheme (a scheme to reduce customer interruptions and customer minutes lost) are unlikely to drive long term innovation into reliability because the target is reset each price control.
 - The Totex incentive mechanism is reset every 5 years, hence we cannot innovate for asset related outcomes with a longer-term view than that.
- Improving reporting to track the benefits of innovation projects – we support Ofgem's proposal for an improved process for tracking of innovation benefits. It's important for Ofgem to define what good looks like to provide more focus on tangible benefits to customers. This improvement could be through a revision of the current IMF reporting process and improved guidance on aspects such as how long innovation project benefits should be tracked for. We believe some improvements could include measuring the success of innovation at a portfolio wide level rather than on an individual project basis. This accounts for the fact some innovation fails, and some innovation succeeds, and within any innovation portfolio, those that succeed should provide an overall portfolio net benefit to consumers. Another improvement to benefit tracking could include measuring success across a broader range of innovation benefits, such as including rollout, follow on project (iterative innovation), informs learning or strategic decision making, update to standards etc.
- Increasing flexibility in NIA contracting conditions, in particular more flexibility around Intellectual Property (IP) conditions would help broaden the range of innovation partners who would be willing to work with networks.

We welcome further discussion with Ofgem on NIA including how we drive and govern NIA projects, the benefits from delivered projects and how we ensure better connection between NIA projects and Ofgem policy teams.

OVQ48. Do you have any views on our proposal to retain a competitive network innovation funding pot, that continues to focus on key challenges facing the energy sector, with phases to de-risk the pot?

We agree that a competitive innovation allowance such as SIF should be retained (with improvements made) alongside a flexible allowance such as NIA. Since the start of RIIO-ET2 NGET have delivered 6 SIF projects across various stages. Having both competitive and flexible innovation funding mechanisms in place will support networks in achieving the scale and speed of innovation required for net zero.

The following areas should be maintained within future competitive regulated funding mechanisms:

- Utilise Ofgem's ability to set direction for innovation challenges and allow transparency and input from networks in setting those challenges.
- Enable large scale (more than £2-3m), multi stakeholder and multi-year innovation projects.
- Enable the governance protection appropriate for this scale and size of projects.
- Continue to demonstrate robust governance – this is essential given the size and scale of SIF projects, particularly as they approach Beta stages.

The following could further improve the design of a competitive innovation funding mechanism for RIIO-ET3:

- merging SIF Discovery and Alpha to deliver a funded business case investigation and then, on successful review of that, a detailed trial plan. These two outputs should then be reviewed to decide which projects obtain Beta funding.
- reviewing the SIF application timelines to ensure that applications for subsequent stages are opened once the previous stage is completed. Currently, application windows for the next phase open during the previous phase and this creates misalignment because until the previous phase is completed, we don't have full results and therefore whether the project merits proceeding into a successive stage.
- reviewing the annual SIF cycle to spread the workload more evenly through the year. The annual cycle in its current format becomes unmanageable during certain windows. For example, March – May includes Discovery, Alpha and Beta application windows which has proved challenging to accommodate. In contrast, July – September are much quieter months in the SIF process. .
- allowing partnerships between the same network licensee type. For example, currently a requirement of SIF projects is that an alternative network licensee must partner on the project i.e. transmission and distribution. For certain innovations, they may only be relevant to transmission for example, and therefore we would propose allowing more flexibility on partner requirements whilst still supporting the overall requirement for partnerships.
- better facilitating SIF to develop high risk innovation under uncertainty rather than at present where SIF feels like it facilitates low risk/high commitment innovation. A business cannot make the commitment to BAU and rollout early until we have the learnings from an innovation project to prove that the concept would be in the interests of consumers and inform plausible, efficient deployment strategies.
- engaging networks to consider pertinent net zero challenge areas, for example supply chain issues, dynamic network optimisation, extending the life of existing and ageing assets, climate resilience etc. Long term challenge statements should remain stable and consistent so that networks can plan their innovation roadmaps. Often, challenge areas seem to be those where policy and market changes are required to enact the changes needed (hydrogen, flexibility markets etc) rather than helping address challenges faced by networks.

OVQ49. Do you have any views on how the structure of the price control innovation funding could be adapted to better focus on whole systems problems, and ensure strategic alignment with other public sector initiatives?

The current regulatory innovation funding adequately incentivises and enables a focus on whole system problems and innovation. For example, NGET has an innovation portfolio entirely dedicated to whole systems projects, including:

- our Energy Water Nexus project (NIA2_NGET0026) which is developing a system mapping approach that will map water and energy system interdependencies and quantify risks and opportunities for both energy and water networks from these interactions; and
- our Vehicle to Grid project (NIA2_NGET0017) which is developing a model to demonstrate the impact of vehicle to grid on electricity peak demand across the entire GB system under different decarbonisation scenarios.

We are also continuing to build a pipeline of whole systems projects as well, for example we are looking at the growing impact and requirements of data centres on GB electricity.

If flexible innovation funding criteria remains broad, and SIF challenges continue to include whole systems focus, this will continue to enable more whole systems projects, and alignment with other public sector initiatives. National Grid would constructively engage with Ofgem on continuing to focus on whole systems projects and methods to improve this focus.

OVQ50. Do you agree with our proposal to continue with a similar level of innovation funding, and if not, could you provide evidence for why a different amount is required, including consumer research you are aware of into their willingness to pay for network innovation?

The current level of innovation funding should be increased in line with inflation to ensure that we can continue a similar level of innovation activity. Aside from this inflation adjustment, we agree with Ofgem that a similar level of innovation funding should continue in RIIO-ET3 to ensure we can continue to accommodate the scale of innovation work required to achieve energy system transition. As an example from RIIO-ET2, NGET are forecasting to utilise the full NIA budget allocated for RIIO-ET2 (£54m including Ofgem and NGET funding), with 92% of the budget currently committed to projects as of Feb 24.

Whilst we agree that funding levels should remain similar, we would welcome seeing the introduction of a separate innovation funding rollout mechanism which could then warrant additional funding to ensure innovation potential from flexible and competitive funds is not diminished. Please refer to our answer to OVQ 58 for further details.

OVQ51. Do you agree there is a need to expand the scope of innovation funding to be more inclusive of third parties?

We support innovation in the energy sector and welcome working with other innovators. We consider that the current funding mechanisms already allow a high amount of third-party involvement. 100% of NGET innovation projects involve one or more third parties per project. NGET's current innovation portfolio of projects across both NIA and SIF sees us working with over 50 third parties to deliver innovation. We acknowledge the crucial role and expertise that third parties bring to network innovation and are supportive of ensuring third party inclusion continues and grows. National Grid has a proven track record of working with third parties across both NIA and SIF projects.

We recognise that network companies are not the only stakeholder in this landscape. RIIO innovation mechanisms are designed to incentivise network companies including independent network operators. Due to the nature of the source of innovation funds (network charges), benefits must accrue to users of those gas/electricity networks, and the primary recipient of innovation funding can only be networks. Therefore, we believe that the best way to ensure that benefits accrue appropriately, while maintaining network safety, security, and reliability, is to retain the scope of funding as-is.

To deliver efficient innovation, however, we believe there can be improvements made to ensure more third parties can participate. This includes an innovation ecosystem which:

- Enables meaningful engagement between innovators and network staff who have first-hand experience of the innovation challenge being addressed and assuring that networks can maintain the headcount to service third party innovators. Currently, finite headcount affects our ability to:
 - Ensure that the third-party innovators with the best ideas / IP are fast tracked and that third-party innovators with underdeveloped ideas or uninformed suggestions are given feedback quickly and efficiently.
 - Ensure that the third-party innovators with the highest risk reward ideas obtain the right amount of support. For example, the barriers to innovating with hardware are higher than digital innovators.
 - Ensure that innovators capture and allow for the voices of stakeholders who could be impacted by a particular innovation.

We would welcome further discussion on the potential changes that may be needed to the framework to ensure expanding the scope of innovation funding to be more inclusive of third parties can be successful.

OVQ52. What are your views on us establishing an accelerator to support early-stage innovators?

We are supportive of the principle of accelerators for early-stage innovation and believe they add value by helping to advance ideas from concept. We would work with Ofgem on better enabling early-stage innovator support but do not think it is necessary to spend consumers' money on accelerator activities that duplicate those existing already.

There are a number of successful accelerator programmes in existence already suggesting that there is already a source of support for early-stage innovators. For example, within National Grid, National Grid Partners (NGP) has successfully deployed £350m toward venture investments in innovative small and medium enterprise (SMEs) and

currently has 35 live portfolio companies. NGP supports the National Grid businesses to bring new solutions to market and deploy them within the business units. We also actively participate in the ENA basecamp process where we provide detailed written and verbal briefs to innovators as to what our key challenges statements are. We then receive pitches alongside other networks who share the same challenge. Each innovator who participated in this process last year obtained dedicated time to pitch their idea to a pan-licence panel.

We recognise that the environment is not perfect, and that innovation start-ups have a need for IP support and advice as IP is still a barrier to involvement with regulatory funded projects. We welcome further discussion regarding how to support early stage innovators and to make IP conditions more attractive to innovators.

OVQ53. What are your views on our proposal for this to be a smaller part of a future challenge fund and to be sponsored by networks?

As discussed in OVQ 52, we believe that there are several existing accelerator activities and opportunities through regulated funding, private funding, and public/third sector. As such, funding another one through network consumer charges that is similar to those which already exist would be duplicative and contrary to the interests of consumers. We are supportive of working with Ofgem to develop methods and mechanisms that would further support early-stage innovators and that don't duplicate with existing mechanisms already in place.

Should an accelerator mechanism be introduced, then we would be concerned that accelerator funding could lower the quantity of funding available to networks, and therefore we believe the total amount of funding available within any fund should increase to accommodate an accelerator pot.

OVQ54. Do you have evidence of potential innovation projects that have not been implemented or sought funding due to the five-year structure of the price control? How could this issue be addressed?

In our experience, larger scale and more ambitious projects such as our DATAMInER project (see below) have been limited in size and/or scope because investment doesn't overlap price controls, because these types of projects need longer timelines to execute. The current framework also creates a stop / start nature to innovation which can limit future opportunities due to finite delivery time at the end of the price control. These restrictions limit our ability to create value for consumers as we are not able to address longer term strategic challenges. It also limits the scope of some projects that start mid/late during the price control. In theory it is possible to front or middle load projects within a price control period, but this is not always practical, particularly in the space of innovation where new challenges and opportunities can occur throughout the price control.

We believe the priority should be on identifying projects that maximise consumer value, not based on accessibility or rigid criteria of a funding mechanism. As such, we suggest these approaches:

- Extend the funding beyond the price control window to prevent the prioritisation of projects based on the project scale (delivery time) and support the delivery of projects that need longer timelines to deliver and implement. This funding extension could be in the form of an agreement-in-principal process to access a reopener beyond the price control window. It could utilise either innovation funding from the previous price control or a proportion of the next price controls innovation funding. This process should apply to all types of innovation i.e. iterative and transformational. As an example, it would aid higher risk transformational innovation currently impeded by the 5-year Totex incentive mechanism.
- Consider flexible funding in a similar way that SIF or capex projects would be – if the project has been sanctioned, then flexible funding projects should be funded across price controls to the timescales required for the project.
- Carryover the previous price controls procurement terms and conditions for innovation for an agreed window at the start of each regulatory period to avoid the stop/start nature of setting up procurement frameworks with partners to deliver innovation (i.e. academic frameworks).

There is benefit in an NIA / flexible funding rollover between price controls because it ensures the consumer benefit derived from projects is delivered, and ensures these projects include ambitious scope, and involve SMEs to deliver the benefit:

- An extension ensures SMEs can participate in projects. We have concerns that some projects won't happen / start if partners believe RIIO-ET2 will time out before they can complete their work.
- There is uncertainty over how NIA will look in RIIO-ET3, as such projects that commence in the ET2 period should have the chance to complete under the RIIO-ET2 NIA.

Some standalone examples of the negative impact of the five-year price control period include the following:

- University framework agreements: we do not set-up innovation framework agreements until we are clear on aspects such as budget for a price control therefore frameworks are set up at the start of a regulatory period. This process can take several months to reach the point where all suppliers have signed contracts. For our current university framework agreement, in theory we passed the point that we could do any work with new PhDs almost at the point we signed contracts. This kind of work can be done with university research assistants who often deliver quicker than PhDs however this approach comes at a greater cost to the project and therefore consumer.
- We started identification and quantification of C4F7N gas mixture (SF6 alternative) arcing by-products and their implication for Gas Insulated Substation operation (NIA2_NGET0028) in the second year of the price control, and our university partner was already concerned about meeting the RIIO-ET2 cut off. Consequently, they added more resources to deliver the project sooner, which increased costs for the university, NGET and therefore, the consumer.
- We accelerated approvals for recent projects in late 2023 such as DATAMInER (NIA2_NGET0052) but still had to descope some of the work Manchester University proposed to deliver, using 18 month rather than 24 month contracts to assure completion within the RIIO-ET2 timeframe.
- Finally, we are unlikely to consider innovation projects for the final year of RIIO-ET2 that require work on sites or outage windows because we will have decreased confidence we would be able to secure site access by the end of RIIO-ET2. This means there will be a blanket limitation on scope and/or projects in their entirety.

To help maintain high quality innovation throughout the RIIO-ET2 period, we would welcome early clarity from Ofgem on any potential NIA transition agreements between RIIO-ET2 and RIIO-ET3, such as early confirmation as to whether NIA funding can be carried over into year 1 of RIIO-ET3, like the approach we saw from RIIO-ET1 to RIIO-ET2.

OVQ55. Do you agree with our proposal to run FRS trials with an explicit focus on informing changes to the rules governing energy network activities – incentivised through SIF or other price control mechanisms?

We agree with Ofgem's aspirations for the FRS and its explicit aim to inform decisions regarding how energy regulation should change and the initiative for, and design of, any given FRS process to be established by Ofgem (informed by stakeholder appetite and input). We also agree with the problem Ofgem has identified in the potential for friction in the relationship between innovation and regulation.

The energy system has been shifting from top-down, passive generation and consumption to decentralised and bidirectional use of electricity between transmission and distribution systems. Technology has a significant impact and role to play, from low carbon technology to smart grids and the potential for artificial intelligence. The speed and scale of change will require innovation at an unprecedented pace. It is almost certain that existing rule books, both licence and technical, won't be fit for purpose as these were designed for a world in status quo rather than a world led by transformation. The speed required to achieve net zero will require unprecedented rates of capital infrastructure delivery.

We value not only the prospect of real-world insight from FRS data, information and experience as direct evidence for the relevant rulebook change process, but also the prospect of the FRS to facilitate smooth implementation of new rules through transitional arrangements. The FRS should facilitate faster and more efficient regulation development in contrast to the traditional approach which can be time consuming and approached by top-down policy reviews.

In our view:

- **Innovation Culture & Scope:** The FRS should encourage and support effective cultural change regarding innovative activities within both Ofgem and licensees or market actors. The scope of the FRS should primarily be regulatory rulesets, outputs and mechanisms, and the FRS should not lead on engineering or operational matters.
- **Co-Creation:** Co-creation is key to achieving the required outputs, and we include our suggestions to enhance Ofgem's initial proposal in our FRS consultation response.
- **Alignment:** Align FRS processes to regulatory incentives, such as the NIA and the SIF, to ensure optimal network participation.

We understand that the FRS, like the Energy Regulation Sandbox (ERS), does not provide funding. We see benefit in aligning FRS trials with the SIF or other price control mechanisms. We do not believe that there is a one size fits all approach to the innovation stimulus that would support participation in the FRS, and FRS projects may not always need innovation funding. We believe that the SIF competition has some merits for stimulating one-off, large innovation projects, but the competitive nature of it, combined with the requirements for continued efficiency under

RIIO, has the potential to reduce our ability to justify keeping internally funded experts available to respond to innovation questions or work on innovation broadly, both internally and externally. We also observe that the rigidity of the annual SIF stage gates and fixed stage durations compresses the value of the innovation that can be delivered at times. Therefore, we believe that continued access to a funding mechanism such as the NIA signals to networks that Ofgem would like us to retain the flexibility to offer our funded expertise into initiatives such as the FRS as well as support external partners to participate.

To help the FRS garner as much participation and support as possible:

- Participation in the FRS could be funded by SIF, NIA or private business funding. In instances where there are multiple stakeholders needed to deliver the FRS trial, then participation in the FRS might be dependent on different funding streams. For these reasons we recommend that the entry points for FRS applications be as flexible as possible to avoid blocking one of these funding streams.
- To ensure that FRS participants can deliver their roles efficiently, FRS governance will need to recognise that SIF, NIA or internal business funds come with separate funding governance. This is in addition to any project delivery governance that FRS participants would expect to work within. For this reason, we recommend that the FRS governance should be designed to be able to accommodate diverse funding streams and project governance by being able to utilise the project management and reporting features in any of these three governance options.

OVQ56. What topics could FRS trials usefully focus on and why?

We believe the purpose of the FRS is to trial regulatory mechanisms to drive outputs. We do not believe that the FRS should be used to test specific innovation solutions. As such, our view is that regulator led innovation should:

1. Be developed through consultation and co-creation. Failure to do this has the potential to block the benefits offered by the FRS.
2. Focus on improving industry-level outcomes bounded by testing potential modifications to codes, licences or process that are within Ofgem's remit.
3. Focus upon the mechanisms required to achieve the intended regulatory outcomes and remain agnostic to the means of how regulated companies respond to the signal. We recognise that there are some regulatory rules or mechanisms that cannot be updated without some form of collaboration from a licensee. In these instances, we would still propose that the regulator avoids leading on questions of technical or operational capability, and instead should expect licensees to deliver activity that provides insight back to the regulator. This activity could range from simple consultation responses through to a new innovation project.
4. Provide insights that would not be exposed within traditional process for regulatory development (e.g., working groups, desktop impact assessment, use of learning from innovation projects and industry consultations). To ensure that trials are of sufficient quality to inform policy or regulatory rulebook, we believe that it is essential that the regulator, licensees and partners be adequately resourced to contribute the right subject matter experts to the trial development and design. For the FRS to be truly innovative, Ofgem should be empowered to assist trials that are sufficient in scope and focus to fully support the risk and ambition of the innovator, rather than to meet a pre-determined policy or legacy standpoint.

Based on the above, we believe that the governance of the FRS needs to enable trials that can design and deliver within the following two areas:

- Establish temporary FRS regulatory mechanisms that allow licensees to temporarily adopt the FRS regulation that is being tested.
- Establish temporary information flows to and from licensees pursuant to testing the temporary FRS process. These new information flows may be bilateral between Ofgem and the licensee or there may need to be new information flows between licensees in addition flows to and from Ofgem.

For example, we have been in discussions with Eclipse Power Limited, a licensed Independent Distribution Network Operator, who is looking into last mile "independent transmission operator" connection opportunities through a sandbox trial. We support Eclipse in their ambition to test their proposition, which would require temporary relief from certain regulatory mechanisms via the FRS.

We recommend that all other types of trial (i.e., relating to the operations and capabilities of licensees) be led by licensees and therefore under governance that is separate to the FRS.

OVQ57. Do you have any feedback on the view that not enough network innovation funded projects have been rolled out, and can you share any evidence you have to support your position?

It should be acknowledged that the value of innovation is not only from rollout of a technology or process. Innovation is successful when it results in improving knowledge, informing business & asset management decisions, updating standards, disproving a process or technology to avoid further wasted spend, incremental innovation that combines to create a solution etc as well as rollout of new technologies and processes.

We have two main routes for regulatory innovation rollout:

- For small, quick, low risk and low complexity projects: we can deliver innovation rollout within price control. For example, our SF6 leak sealing solution, carbon tracing app, open network data, statistical ratings for overhead lines project and more.
- For larger, long term, complex projects with dependencies: we must wait for the next price control to justify the benefit of rollout and request funding. For example, rolling out innovation into major projects such as those covered by the ASTI framework.

Across NGET and NGED, we have rolled out several successful innovation projects into BAU which we list below. This is not an exhaustive list, but a sample of innovation success across NGET and NGED (including both rollout and improved knowledge).

NGET rollout examples:

- Novel methods for sealing SF6 leaks (NIA2_NGET0016): Has enabled us to move Rawwater's leak sealing technique into BAU – this novel approach is for fixing small leaks and forms part of a wider toolkit of leak sealing options. Across all BAU deployments to date, this technique has currently saved 167kg of SF6 leaking into the atmosphere. To put this saving into perspective, this is the equivalent of all Premier League fans switching from cars to trains to attend matches for a full season. SSE and SPEN will also use this if they have leaks where the application will be suitable. Rawwater have also now deployed this leak sealing solution on a DNO network in early 2024 and demonstrates a good example of innovation sharing and uptake across networks.
- Alternatives to SF6 for retro-filling existing equipment (NIA_NGET0199): The UK's first SF6 free substation using an alternative gas is now delivered at Bengeworth Road in London. R&D from our NGET NIA project team working in partnership with the project delivery teams enabled this UK first SF6 free substation. See link for more information.
- 400kV Synthetic Ester Filled Transformer Pilot Project (NIA_NGET0080): Along with other projects, has led to us adopting synthetic ester in large power transformers. These types of transformers (identified by their blue colour) are installed across multiple NGET substations and continue to be used where required. Lifetime savings for installing synthetic ester transformers as opposed to traditional mineral oil transformers are approx. £235k per transformer. NGET have 22 synthetic ester transformers either built or in active construction (9 deployed, 13 under construction) which equates to a £5.17m cost reduction and therefore consumer benefit. This benefit is in addition to wider benefits from synthetic ester transformers including: environmental benefit vs traditional mineral oil, reduced CO2, reduced onsite footprint, predicted longer life for transformer, option to provide community heating from waste heat. See link for more information.
- Retrofitting Oil Source Heat Recovery to Transformers (NIA2_NGET0003): Several organisations are awaiting the final results from this project which is due to complete in 2024 because they want to learn from our findings and rollout the technology. Beyond our project partners SSE, there is also SGN, Islington Borough Council, Synfo interested in rollout applications. It has also created interest from University of Belfast and Hydro Quebec.

NGED rollout examples:

- Alternative connection offers that were developed following the LCNF Tier2 funded project, Lincolnshire Low Carbon Hub.
- Our NIC funded OpenLV project has resulted in our roll out of LV monitoring.
- Project Entire (WPD_NIA_017) was key to the development of flexibility services that are currently procured via the DSO.
- Presumed Open Data (WPD_NIA_048) has resulted in the development of our Energy Data Hub.
- Overhead Line Power Pointer (WPD_NIA_038) has led to new devices being added to the network to reduce fault location times.
- Improved Statistical Ratings (WPD_NIA_008) is now embedded in our policy and has resulted in more realistic ratings for overhead lines being used in our network analysis.

- Carbon Tracing (WPD_NIA_022) and Carbon Portal (WPD_NIA_031) are currently providing data to help customers decide when to use energy and for other purposes.
- LTE Connecting Futures (WPD_NIA_050) results are incorporated in how our telecomms network is upgraded.
- Our Primary Networks Power Quality Analysis project PNPQA (WPD_NIA_028) has resulted in the roll out of power quality monitoring equipment in our primary substations.
- Other projects preparing for the roll out process include our ALPACA Project (WPD_NIA_062) which will extend our carbon accounting, ACCELERATED (WPD_NIA_064) which predicts climate change impacts on network resilience, and SMITN (WPD_NIA_066) which will provide planning profiles while improving LV network data quality.

NGET improved knowledge examples:

- SF6 Management and Alternative Gases (NIA_NGET0163): This project helped us reject CF3I as a suitable gas for replacing SF6 as a result of this work and avoids future spend on an unfeasible technology. See link for more information.
- Transformer Oil Passivation and Impact of Corrosive Sulphur (TOPICS) (NIA_NGET0044): Changed the way we do oil reclamation so we could avoid silver corrosion issues, it modified our mitigation strategy and helped us understand the corrosive sulphur in transformer issue so that we could take transformers out of our replacement plan during T1.
- 13kV Shunt Reactor Refurbishment (NIA_NGET0102): Showed that refurbishing was generally not economical compared with buying a new unit but showed us how to do it if we decided it was the best solution in each circumstance. A key finding was that refurbished assets may not meet more modern noise requirements.

NGED improved knowledge examples:

- Sunshine Tariff (WPD_NIA_006) highlighted the difficulties in persuading customers to change their consumption patterns to make the most of solar generation, while ECHO (WPD_NIA_003) highlighted technical limitations to control equipment for domestic demand side response.
- Airborne Inspection (WPD_NIA_007) evaluated sensors that could be helicopter mounted and highlighted a number of obstacles that were found in practice.
- Electric Nation (WPD_NIA_013) has provided information on EV charging profiles and ADMD that have been adopted in our planning processes.
- LCT Harmonic emissions (WPD_NIA_018) has quantified the harmonic impact of EV chargers to inform network planners.
- Flowers (WPD_NIA_063) has provided insights into the potential flexibility capacity of water networks on both the drinking water and wastewater sides of the business.

We also note that in addition to our extensive innovation work through both NIA, SIF and previous regulatory funding mechanisms, we are already doing more in the innovation space than what is required by RIIO. This includes:

- Business funded innovation – £12m was spent by NGET on non-regulatory funded innovation projects in 2022/23, in addition to the ~£1.7b invested by National Grid Ventures in innovation, and \$multi-million innovation investments made by our businesses in the US, who's lessons learnt are shared with NGET and NGED.
- National Grid Partners (NGP) – fund the development of the boldest ideas from start-ups and turn them into impactful, scalable technology solutions. NGP has made over 47 investments in disruptive innovative companies since it was established.
- National Grid Innovation Day – a one-day interactive event celebrating with Ofgem, decision makers, customers and other key stakeholders, the role of innovation at National Grid. Hosted for the first time in the UK on June 18th 2024, the event will showcase National Grid's innovation journey to date, highlighting our successes, challenges and key priorities for embedding innovation into our business to drive net zero forward.
- Group Innovation Strategy - helping to drive the right culture across National Grid, and being ambitious with how we break down barriers and scale our outcomes. We would like to engage Ofgem on our internal view on issues with commercialisation and alternative ways to maximise the benefit to customers through innovation delivery.

We accept the viewpoint that network wide reporting via the ENA does not demonstrate many projects having been rolled out to BAU, and there are improvements which should be made to reporting on the successes of innovation funding.

The nature of innovation often results in high failure rates for early TRL projects, and more success for higher TRL projects. Or earlier TRL projects by their nature don't involve rollout once completed, and instead may lead to new knowledge or incremental innovation and subsequent innovation projects to continue raising the TRL.

We propose two solutions to improve innovation reporting:

1. include a wider range of innovation success criteria such as those listed in the first paragraph of this questions response,
2. report on the overall value of an entire portfolio of innovation projects - the benefit is likely to be more clearly visible than taking each project on its own merit.

We also believe that Ofgem would benefit from improved engagement particularly on NIA project benefits so that networks can demonstrate the range of NIA successes and rollout achievements.

The UK Innovation Strategy⁹ also outlines a similar approach to measuring innovation at a portfolio level and to taking increased risk with innovation: *"We must be prepared to invest at risk, with a portfolio mindset. With the Vaccine Taskforce, we took a portfolio approach with the knowledge that value for money could not be assessed at the individual spending decision level. At present, value for money is too often assessed on a piece-by-piece basis, which prioritises low risk approaches and increases bureaucracy by requiring greater oversight. A portfolio mindset in innovation means creating major successes by accepting that some failure is inevitable. Such failure is not 'waste', but rather the overhead for success."* A revised portfolio wide reporting approach that is also inclusive of a wider range of innovation success criteria would therefore demonstrate the overall success of network innovation whilst accepting that some failure is inevitable and an 'overhead for success'.

OVQ58. What are your views on the design of potential new mechanisms to address this?

We would welcome the inclusion of an innovation rollout mechanism to enable faster rollout of mature ideas that are ready for BAU implementation and/or increase the scope of NIA funding to allow for implementation stages.

A rollout mechanism should:

- form part of stage gate process for innovation projects;
- provide upfront funding for rollout – this could be a 'use it or lose it' funding mechanism;
- apply to higher TRL and mature ideas.

We do not think there should be a clawback mechanism for unsuccessful rollout, given as we explain in OVQ57 that reflects too narrow a view of the success of innovation activity. The parameters that define what innovations can be rolled out under such a mechanism and what is considered successful rollout would need to be clearly set out in governance.

We would welcome the opportunity to work with Ofgem to shape an appropriate innovation rollout mechanism.

We have also identified an issue with deploying innovation on the key assets on major projects, such as those covered by the ASTI framework. To rollout innovations on such assets widely they must deploy at transmission scale for the first time. This first deployment carries additional risk even if the technology has been proven at sub-transmission scale or voltages. Often the size of even a 'small' deployment at transmission scale will exceed £100m and therefore is too large for either the NIA or SIF framework. Given that the ASTI framework (and the proposed Major Projects Regime) puts great emphasis on timely project delivery due to the consumer value of earlier delivery, there is a strong disincentive to take on additional risk at the project level, even though there may be very large long-term benefits for consumers across the future portfolio of such projects. This could result in the overall regulatory structure disincentivising innovation on technology that is key to large projects. The solution to this may not be in a new specific rollout mechanism but in protections and incentives within the rest of the RIIO framework that encourages and rewards the deployment of innovation on large projects.

⁹ UK Innovation Strategy: leading the future by creating it (accessible webpage) - GOV.UK (www.gov.uk)

Data and digitalisation

Key messages:

- Modernising regulatory reporting is already underway, so NGET is supportive of the direction Ofgem are consulting on albeit very keen to agree a shared roadmap to realise consumer efficiencies in the shortest possible timeframe.
- Improving efficiency of data handling, sharing and interpretation will succeed or fail based on a shared and consistent commitment to data quality. To achieve this data quality across all networks NGET is requesting that all relevant parties co-design the data solution.
- All users of a modern regulatory reporting model will have to develop new capabilities and manage data in new ways. This data readiness and capability build is needed for this is as critical as any future platform and therefore needs to be adequately resourced and funded.

OVQ59. Do you have any views on the timelines for modernising regulatory reporting?

During ET2, NGET has worked with Ofgem to begin to modernise regulatory reporting. RRP 2023 was the first year in which NGET generated the Load and Non-Load Scheme C&V RRP table contents through an automated pipeline, the output of which is then made available as a data product.

In parallel, we are carrying out work to establish a data fabric architecture which will, amongst other benefits, enable the full data sharing lifecycle. A RIIO-ET2 reopener has been submitted to Ofgem in September 2023 to request allowances to deliver this in the ET2 period. This will enable NGET to react more quickly to expanding need to provide data products to our stakeholders. This inherently includes the introduction of capability for data products to be shared securely with stakeholders. This should contribute significantly towards enabling the type of data exchange that Ofgem envisages in the SSMC. There have been many valuable lessons learnt, such as the importance of managing quality effectively throughout the data lifecycle (and the human factors involved, supported through implementation of the data mesh operating model to place accountability for quality and triage in the hands of those who create and manage data), and the time and collaboration required to develop an effective technology stack, all of which we believe will add considerable value to the process of achieving modern regulatory reporting in RIIO-ET3.

We believe there is value in the TOs, NGESO, DESNZ collaborating with Ofgem during the "initial phase" to ensure all parties can be ready to fully participate and full consumer value can be realised in the quickest possible time.

The success of any data sharing infrastructure (DSI) will depend on the quality and readiness of the data input and supporting policies around data use and sharing. Therefore we are also very keen to build on the information provided by NGESO at the working group on 22 February 2024 on the detailed programme of the DSI minimum viable product (MVP) so we can anticipate the scale and pace of investment needed to realise the consumer value of the DSI.

We are supportive of the use of RIIO-3 RRP as the basis for development of the DSI MVP, though note that if the proposed approach is to be ready for use on at least a subset of RIIO-ET3 tables, development and agreement of both the DSI and the content / scheme of the tables themselves will need to materially progress during RIIO-ET2. We also expect that any development work required during the RIIO-ET2 period which extends beyond allowances provided as part of the RIIO-ET2 baseline or as part of the data portal re-opener submitted this year (including, but not limited to, costs incurred as part of data preparation, data egress costs, any additional storage and compute costs, and additional security costs) would be claimed back through a further re-opener submission in 2025.

OVQ60. Do you have any initial views on opportunities for improving efficiency in providing the data that Ofgem receives as part of regulatory instructions and guidance?

Data readiness from both the TOs (to issue) and Ofgem (to receive from multiple sources meaningfully) is going to be critical to avoid inconsistent data sets being received, introducing inefficiencies and potential misinterpretation of data issued and received.

Our ambition is that in future direct access to shared data is possible with a continuous feed of data as opposed to "lumpy" data sets dependent on Microsoft Excel Spreadsheets.

To do this well, all parties need to align on standardisations of robust and stable definitions, data tools and products early in the programme to ensure they are accessible to all networks and can support Ofgem to achieve consolidated views across multiple data sets. Consideration needs to be given to whole-system modelling to support the consistency and interoperability that will be key to enable the benefits Ofgem is seeking. Additionally, the full

lifecycle from data creation, through packaging into data products, through to appropriately controlled provision of those products to the relevant data consumers' needs to be included in the thinking applied – focusing solely on the sharing aspects without understanding the upstream steps is unlikely to result in a beneficial solution for Ofgem, licensees, stakeholders or end consumers.

For example, in scenarios where the need for completely new data is identified, it is possible that we will be less able to respond as quickly to the requirement as is currently the case due to the need for (for example) new data transformation development, which may also incur additional cost. Stability in the standards and definitions adopted, or at the very least clear and timely signposting of any need for change (and a commitment to minimising such change to the greatest extent possible), will therefore be essential in ensuring that we are able to deliver effectively and in alignment with reasonable expectations.

The benefits of digitalising regulatory reporting need to be balanced against the risk of misinterpretation and misuse of the data. As such we believe a complementary governance framework would also be required to ensure the data is prepared and consumed appropriately (including, but not limited to, protection of commercial confidentiality through prevention of inappropriate sharing of data, and exclusion from scope of this data sharing mechanism of any data which might compromise the security of critical national infrastructure), as well as ensuring that holistic alignment of all contributors' inputs is retained. The data governance framework should ensure all the Data Best Practice Principles are applied and properly understood by all parties. This would include, but not limited to; Metadata, data dictionaries, data life cycle management, data quality, data usage/licencing, ownership.

OVQ61. Are there areas of regulatory reporting that would be most beneficial to start with in the modernising project?

We think the following areas within Cost & Volumes would be most beneficial to start with in the modernising project:

- Scheme C&V Load/Non-Load Actuals (and potentially Allowances)
- Project Meta Data
- *Potentially* E1.6 System Characteristics & D4.12 Site ID

This is because these areas are supported by automation and digitalisation work already done and there is overlap in the source datasets across these areas, enabling a quicker start on integration with the DSI.

Beyond this starting point, we do not have a particular preference on which RRP tables are progressed next (notwithstanding the points raised in OVQ60 with respect to any exclusions required to prevent risk to security of critical national infrastructure). However, any ad-hoc reporting (particularly where time- and/or safety-critical) should not fall within the scope of the modernising project at least until all routine / regular reporting has been successfully transitioned to the DSI and the mechanism is fully proven. Focus should also be towards tabular data (currently exchanged in Excel format) rather than narrative documentation, as this is where the greatest benefits lie in terms of automation, standardisation, and interoperability.