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ESO Response to the consultation on frameworks for future systems and network regulation

Thank you for the opportunity to respond to your consultation on frameworks for future systems and network regulation: enabling an energy system for the future.

Who we are

As the Electricity System Operator (ESO) for Great Britain, we are in a privileged position at the heart of the energy system, balancing electricity supply and demand second by second.

As the UK moves towards its 2050 net zero target, our mission is to drive the transformation to a fully decarbonised electricity system by 2035, which is reliable, affordable, and fair for all. We play a central role in driving Great Britain's path to net zero and use our unique perspective and independent position to facilitate market-based solutions to the challenges posed by the energy trilemma.

Our transformation to a Future System Operator (FSO) is set to build on the ESO's position at the heart of the energy industry, acting as an enabler for greater industry collaboration and alignment. This will commence with greater coordination across gas and electric strategic planning, with the ability to expand our remit to include additional vectors as and when needed. This will unlock value for current and future consumers through more effective strategic planning, management, and coordination across the whole energy system.

The scale of change needed to deliver a decarbonised energy system, in the face of climate change impacts which are already being seen at global and local levels, demands urgent and collaborative action. We very much welcome, therefore, Ofgem sharing its proposals for the overarching framework design that will follow RII0-2 and form the foundation for the whole energy system investment plans that are required to deliver the net-zero transition.

Key messages

1. Future energy network regulation needs to evolve to ensure we deliver our net zero future

We agree with the changed needs case for future energy network regulation defined by Ofgem, where consumers should not just benefit from efficiently run networks, but from a low-cost energy system as a whole. Maintaining the status quo has the potential to risk the transition to net zero, due to a lack of focus on enabling whole energy system planning and investment through smarter and more agile regulatory tools. A whole energy system¹ approach should be the foundation of future price controls across gas and electricity. Given the scale of activity required across the sector to deliver net zero, any reform to the regulatory frameworks should proceed at pace to avoid any potential hiatus that could be caused by regulatory uncertainty.

¹ In the context of this consultation we are referring to whole energy system as in particular spanning electricity and gas, transmission and distribution. However we are aware that this will evolve over future years.

Like Ofgem, we see whole energy system being delivered through strategic planning. As the FSO, it is proposed that we will have a significant and unique role in enabling this through our proposed roles in centralised strategic network planning, regional system planning, market facilitation and competitive delivery of new investment. We are very excited about the potential of these new roles and responsibilities to deliver better overall outcomes for GB plc and for consumers.

2. Roles and responsibilities across networks, FSO, Government and Ofgem should be reviewed and clarified. This is a prerequisite to designing and implementing future energy network regulation.

It is essential that a clear framework for energy sector investment is developed in the context of whole-system planning (high-level and detailed) and for delivering new investment. Clear mandates will need to be underpinned by a coherent set of policy and regulatory processes incentivising the FSO and other network companies to play their part at the right time (e.g., with regard to data, systems, processes, associated timescales for completing the work and clarity of inputs). It is also important to have rules in place to deal with non-compliance/delivery and to ensure liabilities are well understood. This will also reduce regulatory uncertainty relating to the significant amount of new investment required to deliver a net zero energy system.

3. We see potential benefits of Ofgem’s proposed building blocks model. The allocation of investment within the framework between archetypes should be based on a clear set of principles.

Clear principles should be developed to allocate investments across archetypes and building blocks

- Archetype 1 could be used for significant, separable strategic investments which are outputs of central planning processes. This archetype would ensure alignment and reduce the regulatory burden compared to the current RIIO model, due to the central planner setting out required system needs on a whole energy system basis. Through reducing regulatory asymmetry for investment needs cases, the need for detailed regulatory submissions is lessened.
- Archetype 2 could be used when there are activities where costs and outputs that can be well defined and benchmarked such as BAU costs, and where uncertainty can be addressed through simple mechanisms such as volume drivers. An adapted RIIO model, or other ex-ante incentives-based model, could continue to provide an effective and proportionate regulatory framework.
- Archetype 3 could be used where costs are unknown, timescales uncertain, or where flexibility is required to move quickly and innovate. Examples of activities that might align to this model include cyber and non-forecastable digitalisation investment, due to the pace of change in this space. In these instances, technology is developing quicker than current regulatory models allow. However, the regulatory framework should not create a barrier to delivery at pace.

4. Overall, any future regulatory framework needs to provide sufficient certainty to deliver net zero, regardless of the model selected.

To ensure there is certainty for timely and efficient investments to deliver net zero, consideration should be given to:

The outcomes that frameworks are seeking to address, in order to maximise value

Frameworks need to be sufficiently complementary and flexible to allow for decisions to be taken across vectors in a coordinated way. This includes how to account for trade-offs between network and non-network solutions, to minimise costs on a whole energy system basis. Whilst the building blocks approach begins to tackle the issue of *what* types of investments may be apportioned to each regulatory model, more consideration now needs to be given to *how* these blocks work together across the sector to deliver the outcomes.

Financeability and allocation of risk

We agree with Ofgem that it is important to maintain a stable financial framework. A stable and financeable framework will be required to deliver the significant amount of new infrastructure required across the sector in the coming years, as well as supporting the skilled workforce to deliver this. A key consideration to achieve this outcome will be the transparent and fair allocation of risk.

The way the building blocks model is constructed also has the potential to impact financeability on an individual company and sector-wide level. Currently, organisations base their assessments on deliverability and financeability looking across price controls as a whole. Ofgem should make clear how these archetypes can align as a package to ensure networks remain investable.

Avoiding unintended regulatory consequences

Implementation of Ofgem's proposals would need to ensure that building blocks work in a coherent manner. Challenges often arise at the boundaries between approaches, where an activity could feasibly sit in more than one archetype. There may be unintended consequences of such, driving parties to aim for one side of the boundary as it is more advantageous. To avoid this, where there is a choice, the archetypes need to deliver comparable outcomes, with similar regulatory burdens.

Enabling innovation

We agree that it is important for network companies to be able to innovate, not just within the confines of specific innovation projects, but also within business as usual (BAU) activity. A regulatory framework that allows flexible solutions is key, so that the framework is not a blocker to reflecting constantly changing consumer and system needs, in a timely manner. Ofgem should ensure that, even where delivery solutions are clearly set out, such as in Archetype 1, there is no disincentive for organisations to implement innovations which would deliver consumer benefits. Similarly, consideration should be given to how to encourage innovation within an Archetype 3-type approach. Specifically, the risk of disallowance within any ex-post review process should not be set so high that organisations are unwilling to take on the risk of innovation.

We look forward to engaging with you further. Should you require further information on any of the points raised in our response please contact us at box.consultationresponses@nationalgrideso.com.

Our response is not confidential.

Appendix 1 – Consultation Question Responses

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

Consumers are fundamental to the energy transition. As we move from a centralised to a more decentralised system, consumers will play an increasingly important role in the energy system. This adapted role will change the way in which consumers engage and interface with energy organisations, from passive to more active participants. As the sector evolves, how we engage with consumers will change. For example, Ofgem in their recent consultation on the future of local energy institutions and governance are proposing a Regional System Planner role for the FSO. This has the potential to give a voice to local communities, promoting democratic mandates and buy-in from local and regional stakeholders.

In terms of regulatory models, we believe that the role of the consumer voice is important, to test the principles used to assess frameworks as well as the intended high-level outcomes. Given that the role of the consumer is evolving, how we capture the consumer voice must be flexible, innovative and done in a coordinated manner. As the ESO, we have implemented a new consumer strategy to meet our ambition to be a trusted partner to all our customers, stakeholders and consumers. In terms of channelling the ‘consumer voice’ into business plans, one way to do this is to have consumer representation on companies’ stakeholder user groups. For the ESO, our ESO RIIO-2 Stakeholder Group (ERSG) provides feedback on our proposals and scrutinises our stakeholder engagement and delivery capabilities and allows us to understand how we can best deliver value. This user group approach ensures that stakeholders have a strong and credible voice in the development of business plans, including organisations representing the consumer voice. Using ERSG helps us to ensure our deliverables meet consumer expectations by driving the right outputs.

User groups should continue to review and challenge the ambition and credibility of businesses plans. In terms of outputs, we believe that these groups should continue to act in an advisory capacity, sharing experience and expertise with companies. Stakeholders and companies should be the main beneficiaries of this process, with the groups championing and reflecting stakeholder views and the companies adjusting their proposals and priorities accordingly.

Ofgem may wish to consider whether there is benefit in setting up additional consumer groups to channel feedback on priorities and plans, and ensure they have a voice at the appropriate level. These could either be organisation specific, centralised under different archetypes, or delivered via another means. If such groups were established, it would be important that duplication with other groups (such as stakeholder user groups) is considered to reduce the burdens to participating consumer organisations.

Where decisions are particularly contentious, there is potential to explore how democratic accountability and buy-in can be supported through different means such as participatory budgeting (as has been used in Scotland drawing on wider best practice in Rio de Janeiro) and Citizens Assemblies which have been used to great effect in infrastructure decision making in New York City, for example.

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

We agree that there is a case to introduce a ‘Plan and Deliver’ model for large scale network investments and see this as a necessary approach to achieve successful outcomes from a centralised plan.

The central planner will set out the required short- and long-term investment needs on a whole energy system basis. This will significantly reduce the regulatory information asymmetry for new (or significant upgrade) investment needs cases, particularly for anticipatory investments. This could reduce the requirement for substantial, detailed regulatory submissions to cover these activities. Archetype 1 therefore has the potential to provide a more proportional regulatory burden than the current RIIO-2 model.

It is possible that simplified ex ante incentive regulation, under Archetype 2, or ex post regulation, under Archetype 3, could still deliver the required outcomes for new, anticipatory investment driven by central plans. However, both of these archetypes have a risk of misalignment with the central plans. Under Archetype 2, there would need to be a clear process to ensure that the individual business plans of each network can

deliver the holistic outcomes set out in the central plans, and this is likely to drive a significant regulatory burden. Similarly, whilst Archetype 3 could set broad objectives for an “*economically efficient path to an agreed range of system roadmaps to net zero*”, its very nature gives freedom to networks to choose what they deliver under these roadmaps. As such, the same risk of lack of coherency across the networks would apply, leading to a requirement for further regulatory scrutiny to ensure the right investments are delivered.

It is worth noting, that even under the current regulatory framework, most new investments (at the electricity transmission level), are already moving towards an Archetype 1 approach by following either the Large Onshore Transmission Investment (LOTI) re-opener process or the more recent Accelerated Strategic Transmission Investment (ASTI) framework. Archetype 1 would appear to be the next logical step in developing these processes and frameworks further and to extending the approach cross-vector to deliver whole-systems outcomes.

Archetype 1 allows for the effective introduction of competition in the delivery model, an important requirement to ensure innovative and efficient outcomes for consumers for new, anticipatory investments. Once the system needs have been identified by the central planner, this Archetype allows for a clear process to determine the most efficient delivery model for each investment. Under Archetype 2, network companies would have significant uncertainty when constructing their business plans for these types of investment, given they would be subject to potential competition. This would require the continuation, and likely expansion, of the existing re-opener mechanisms (as described above), but with risks of this being done without full coordination across the networks on a whole energy system basis. This could result in a “pseudo” ‘Plan and Deliver’ model, but without the appropriate certainties and mandates across the various entities involved. It would therefore seem sensible to formally introduce a robust ‘Plan and Deliver’ model to avoid this risk for these investments.

A central planner will need clear mandates for identifying, planning and delivering the whole-system asset infrastructure required for the transition to net zero. Underpinning this mandate, there is a need for a coherent set of policy and regulatory processes, incentivising all participants to play their part at the right time and provide clarity of inputs. This is with regard to data, systems, processes, and associated timescales for delivery, as well as mechanisms dealing with non-compliance or non-delivery. The central planner will need mechanisms to deal with data and information requirements, so that other licensees are obligated to provide the information this body will need to create the independent, cross-vector views which will form the basis of future plans for periods beyond RIIO-2. There is also a need for clarity on the dynamics of the roles and responsibilities between the central planner and Ofgem to provide investment certainty for stakeholders/asset owners. There is a risk that without this clarity, uncertainty is introduced into the planning process and outcomes.

An independent, cross vector view requires that all plans are aligned at some level. This involves closer involvement from key parties at both local and national levels, and we would welcome further discussion with Ofgem on how to ensure the proper political representation into the strategic decision-making process.

[It will be important to consider the timeframes required to establish alignment across vectors and consideration needs to be given as to how activities might transition from one archetype to a more appropriate one. The initial focus of central plans is at the national level and across transmission networks. There is already a plan at the electricity transmission level for short-term investments out to 2030, and the transitional central strategic network plan (tCSNP) will develop this further across both electricity and gas transmission. A long-term CSNP covering transmission investment required beyond 2030 will follow.

At the distribution level, it is expected that strategic regional plans will be developed through the Regional System Planner as set out in Ofgem’s recent consultation on the “future of local energy institutions and governance”². We will work closely with Ofgem, local and regional stakeholders to understand how the RSP can be established to inform decision making ahead of the next electricity distribution price controls.

² [Consultation: Future of local energy institutions and governance | Ofgem](#)

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

We believe competition can unlock consumer benefits and facilitate the achievement of net zero ambitions through enabling new, economic and innovative approaches to network development. Significant investment is required to achieve net zero, and having a range of options and methods available provides flexibility to ensure that network capability is delivered in the most economically efficient manner, and to provide value for consumers.

There should be a clear process for assessing the most appropriate delivery approach for investments, to ensure consumers are protected and efficient outcomes achieved. Additional clarity on the interaction between the central planner and Ofgem in this process is needed to understand where the decision points and responsibilities sit throughout the process of planning, recommendation, competing, procurement and delivery.

We recognise that it may not be possible to introduce fully competitive processes immediately, and again, there may be a need for transitional arrangements to ensure that the right activities are brought under the optimum models once these are established.

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

Simple and transparent regulation is important. However, we believe that the focus should first be on the proportionality of regulation, in terms of establishing what regulatory rules and incentives are required, at a minimum, to achieve whole system outcomes that are in consumers' interests. Subsequently, decisions can be made on how this can be delivered in the most simple and straightforward way. Clarity on the roles of all participants in the process, including the responsibilities and mandate of the FSO, will be a key element in striking the right balance between simplicity, proportionality and efficient and effective performance.

We recognise that there may be some network activities where costs and outputs can be well defined, and where uncertainty can be addressed through simple mechanisms, such as volume drivers. We would assume that, for such activities, there would be BAU costs and output data, allowing increased ability to set appropriate benchmarks. Therefore, the information asymmetry for these activities can be significantly reduced. For these activities we believe that an adapted RIIO model, RPI-X style arrangement or other ex-ante incentives-based model could continue to provide an effective regulatory framework. Such activities are not the focus of the central planning role, and hence Archetype 1 is unlikely to be suitable. Whilst Archetype 3 could be used for these activities, this would likely place an increased regulatory burden on the network companies and Ofgem compared to Archetype 2, as there would be the need for multiple ex-post submissions to ensure efficient outcomes.

Identifying which activities would fall into which categories will be important to ensure that appropriate and proportionate regulation is applied. This is particularly important for activities where there may be a case to deliver under either Archetype 1 or 2 (e.g., based on cost, consumer value, etc.). We recognise that this clarity is intended to be determined under workstream 2 of Ofgem's FSNR activities.

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

We consider that the use of an ex-post monitoring regime for network businesses may be appropriate in limited circumstances. For example, in areas where the landscape is changing rapidly, or to ensure consumer value is delivered at pace.

Across networks, the types of circumstances where Ofgem may wish to consider the use of Archetype 3 may be in areas of work where costs are unknown or timescales are uncertain, where 'learning by doing is required', where urgent delivery is the primary consideration, or where technology is developing quicker than regulatory models may allow. Examples of the types of activity that might align most to an Archetype 3 model include cyber and non-forecastable digitalisation investment, due to the pace of change in this space. It is important that digitalisation is delivered at pace across the sector, to avoid creating data barriers. If networks are not able to move quickly on digitalisation, this may affect how quickly consumer value can be delivered.

Another circumstance where Archetype 3 could be applied is where there are risks outside of network businesses control, for example unpredictable costs due to planning and supply chain uncertainties. Using Archetype 3 could help in these circumstances to reduce exposure to these risks. Arguably, these are areas of increasing risk for all types of infrastructure investment (e.g. the planning and consenting risks associated with new transmission lines).

Innovation must continue to be at the heart of the sector in order to realise our net zero ambitions. There is a risk that where there is a potential for disallowance through an ex-post review process, innovation may be stifled. We propose that Ofgem should consider how to encourage investment in innovation under Archetype 3 and ensure that there are appropriate incentives in place to counter this risk and ensure innovation is at the heart of the way in which networks develop.

Digitalised systems could play a role in supporting ex-post monitoring, for example through use of digital twins. However, Ofgem should employ caution to ensure that efficiency of investment isn't judged with the benefit of hindsight. Decisions should be judged against the information that was available at the time. Digital Twin methodologies could be used for a faster turn around and more effective continuous monitoring of resource and asset deployment, potentially increasing productivity and reducing the regulatory burden.

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

In principle, the building blocks approach, using different archetypes for different activities with clearly defined roles and mandates, has potential to deliver effective and efficient outcomes for consumers. However, there is a risk that by proposing different regulatory models for different activities, the overall regulatory framework becomes increasingly complex.

It will be important to ensure that these different building blocks work in a coherent manner. Challenges may arise at the boundaries between approaches, where an activity could feasibly sit in more than one archetype. In the past, we have seen unintended consequences of such boundary regulatory approaches (e.g. under the LOTI process), driving parties to aim for one side of the boundary as it is more advantageous. To avoid this, where there is a choice, the archetypes need to deliver comparable outcomes, with similar, proportionate regulatory burdens and clarity provided on the roles and obligations for organisations under each archetype.

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

In their consultation on the Future of Local Energy Institutions and Governance, Ofgem are consulting on proposals to create a Regional System Planner (RSP). There are parallels between the concept of an RSP at a distribution level and a CSNP at a transmission level. Therefore, there is a potential for similar types of benefits to be realised from using for the outputs of the RSP within a wider "Plan and Deliver" archetype at a distribution level. For example, it may speed up regulatory approvals for investment if the needs case has been established by the RSP.

Discussion on the potential implementation timescales for the RSP role is still to take place. However, it might be expected that the RSP role may be more fully developed by the end of RIIO-2 for Electricity Distribution networks. We will work closely with Ofgem, local and regional stakeholders to understand how the RSP can be established to inform decision making ahead of the next electricity distribution price controls.

Question 8 What is your view on the most effective approach to regulation of Gas Distribution and Transmission beyond RIIO-2? What would be the benefits and costs of moving to a simpler approach to regulation of the ongoing costs of operating and maintaining the network?

We have no direct comment to make on the benefits and costs of this approach for Gas Distribution and Transmission licensees. As outlined in our earlier response to question six, we agree that in principle the building blocks approach could be an effective regulatory model.

Question 9 Should there be a shorter-term price control in gas distribution and/or gas transmission, and how could this work in practice?

We believe that a whole energy system approach, including effective whole energy system planning, should be the foundation of future price controls across both gas and electricity. Ofgem, within the consultation on

local energy institutions and governance, have set out an aspiration to deliver reforms, including a Regional System Planner function, in time for the setting of the next electricity distribution price control in 2028, or sooner if possible. It may be appropriate to consider the timings for the gas price controls in this context.

We expect that having alignment, in terms of timing, across the price controls for different fuels would be helpful from a whole energy system and regional perspective. Further guidance from government on the evolution of the gas/hydrogen/heat landscape is required and shorter-term price controls may be helpful as an interim step.

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

There needs to be transparent and fair allocation of risk to ensure the sector remains investable at the same time as delivering value for consumers.

The current RIIO model, through the Totex Incentive Mechanism, is set up to share both the risk of under-forecasting of costs but also the benefits of underspend between companies and consumers. When choosing which archetypes are most appropriate to achieve the desired outcome, Ofgem should consider how risk allocation is balanced. In particular, the frameworks should acknowledge and ensure there is the ability for organisations to factor in uncertainty relating to unpredictable costs driven by the external environment.

Archetype 1 will need clear mechanisms to allow for uncertainty and to mitigate risks, such as planning and supply chain events. This will avoid delivery bodies needing to include higher risk premiums in their bids, resulting in higher costs and eroding the benefits of competitive processes. Archetype 2 could continue to use similar mechanisms as under the current RIIO-2 framework. Archetype 3 would need strong incentives for efficient spend and clear processes for disallowance of inefficient spend. However, the latter would need to balance mechanisms to encourage innovation such that the risk of disallowance within any ex-post review process is not so high that organisations are unwilling to take on the risk of innovation.

In considering a building blocks model, archetypes will need to work together. Currently, organisations base their assessments on deliverability and financeability looking across price controls as a whole. Ofgem should make clear how these archetypes can align as a package to ensure networks remain investable. In addition to this, the sector will need to develop a skilled workforce to support delivery of net zero, and the framework should provide sufficient stability to enable it.

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

We agree that a thorough assessment of options against a counterfactual is an appropriate approach to analyse the impact of options on benefits and costs. We would like to see more detail on what will form the basis for the counterfactual as this will be key to understanding the baseline against which to assess the options.

In practice, it will be important to have clarity on how the different consumer interests interact with each other and whether different weighting will be applied for different network businesses and activities (e.g., new investment vs. maintenance vs. cyber). The assessment needs to determine which regulatory archetype achieves the best balance of whole-system outcomes and consumer benefits.

We also believe there should be a clear consideration of regulatory proportionality in the assessment. Whilst not necessarily a direct cost to consumers, regulatory models that are overly burdensome create unintended consequences, which can reduce the effectiveness and efficiency of the framework. A qualitative assessment of this aspect is essential, particularly recognising the differences between network companies.