

Consultation response – 15/01/2024

Ofgem RII0-ED3 Framework Consultation

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Summary and recommendations

Regen welcomes the opportunity to input on the future price control framework for Electricity Distribution.

We strongly support the shift in approach towards ‘proactive investment’ outlined in the framework document. We believe that with the right regulatory framework the distribution network will be the enabler of the transition to electrified heat and transport, allowing the country to reduce its reliance on imported fossil fuels - lowering emissions and energy bills.

For many years we have advocated for a reformed approach to regulation of the network companies to ensure that distribution networks are an effective enabler, rather than a barrier, to the energy transition in Great Britain. This has involved research, insight and thought leadership papers such as:

- [Electrification: the Local Grid Challenge](#)
- [Building an electricity network for net zero](#)
- [Networks Unlocked](#)

Key points from our response are:

1. **Delivering a long-term programme of upgrades:** Regen has long argued that one of the drawbacks of the current regulatory framework is that investment fluctuates cyclically, impeding delivery. The introduction of Regional Energy Strategic Planners provides an opportunity for a longer-term approach to network investment.
2. **Handling high volumes of LCT connections:** Increasing volumes of EV charger and heat pump connections will put customer services under pressure before network capacity runs out. Customers and installers are currently receiving mixed levels of service – this will need to improve.

3. **Optimal use of distribution network flexibility:** Ofgem has captured the nuanced trade-offs of applying flexibility at the distribution network level. Regen would welcome the regulator taking an active role in supporting the development of whole-system cost-benefit analyses so that solutions are deployed to deliver optimal outcomes over the long term.
4. **Improving transparency and accountability:** Accountability will be critical to delivering consumer outcomes in ED3. Ofgem should resume publishing comprehensive comparative DNO reporting via annual reports and ensure that roles, responsibilities and the governance framework are clearly defined when the RESPs are introduced.



About Regen

Regen provides independent, evidence-led insight and advice in support of our mission to transform the UK's energy system for a net zero future. We focus on analysing the systemic challenges of decarbonising power, heat and transport. We know that a transformation of this scale will require engaging the whole of society in a just transition.

Regen is a membership organisation with over 200 members who share our mission, including clean energy developers, businesses, local authorities, community energy groups and research organisations across the energy sector. We manage the Electricity Storage Network (ESN) – the industry group and voice of the grid-scale electricity storage industry in GB.

Regen works with National Grid Electricity Distribution (NGED) and Scottish and Southern Electricity Networks (SSEN) on the development of Distribution Future Energy Scenarios (DFES).



Responses to questions

Networks for Net Zero

Q12. Do you agree that the risk and downside for consumers of network underinvestment in network reinforcement would be greater than the downside of overinvestment?

We agree strongly with Ofgem’s updated assessment of the balance of risks – that a more proactive stance to network investment is justified. We agree the downsides of investing earlier are far lower than the risk of delayed investment, leading to capacity problems which could affect customers, stall the net zero transition and limit economic growth.

We also think that delayed investment based on assumptions of slower LCT growth could become self-fulfilling – if consumers and installers experience installation hassle barriers and connection delays, confidence in electrification may falter and LCT deployment may slow, thereby justifying delayed investment.

Q14. What do you see as the role of distribution-based flexibility, both in the short and longer term, to manage distribution network constraints?

Regen is very supportive of the demand side flexibility and its crucial role in minimising whole energy system costs in the transition to clean energy.

We are pleased to see Ofgem considering the nuances of the application of network flexibility in the ED3 framework document. We agree with Ofgem’s characterisation that there is a risk of two sub-optimal outcomes:

1. In some cases, procurement of network flexibility over network reinforcement may delay reinforcement into a later period when reinforcement volumes are higher and supply chain constraints are greater (paragraph 6.26).
2. Deployment of system-wide flexibility (mainly through implicit signals) may require higher levels of network capacity at the distribution level, for example, to facilitate large power transfers during high demand and high generation periods (paragraph 6.27).

Acknowledging these risks, Regen believes that network flexibility should remain a critical tool in the network planner’s toolkit to cost-effectively manage the network. Some stakeholders have started using the term “Flex-And” in place of “Flex-first”. In our view, even under a framework that encourages proactive investment in capacity, it is likely that ultimately a substantial proportion of distribution network assets will be under flexibility contracts.



Regen strongly welcomes Ofgem’s consideration of an enhanced and expanded Cost Benefit Analysis (CBA) to support the inclusion of a wider range of opportunities, risks and costs in decision-making. In Regen’s experience applying the ENA’s Whole System CBA tool during the NGED EPIC project, we found quantifying wider costs and benefits to be challenging. If deployed widely more data, guidelines, heuristics etc would be required and Ofgem could play a central role in enabling effective whole-system CBA development. We would welcome the opportunity to share detailed lessons learned from our experience implementing whole systems CBAs.

Related to the inclusion of a wider range of factors in DNO decision-making is the consideration of incentives on DNOs (Sub-section: Implications for ED3 LRE regulatory framework, questions 21 to 24). A particular challenge will be the Totex Incentive Mechanism (TIM), designed to reward DNOs for efficiency and lower expenditure (by sharing savings with consumers). However, as Totex excludes non-network costs, the TIM in its current form would financially penalise a DNO for a decision to choose a solution that has higher network costs in return for some other benefits (such as lower delivery risks, lower whole energy system costs, lower societal disruption etc).

Finally, there is a debate ongoing whether distribution network flexibility should continue to take the form of targeted contracted procurement (an opt-in “explicit” signal) or whether a new model of network capacity congestion pricing (an “implicit” signal received by all consumers within the relevant congestion zone). Regen’s view is that a mix of both implicit and explicit flexibility signals will be required. Changes in this framework could have a significant impact on the design of the price control and so Ofgem, and Elexon in their new role as market facilitator, should be clear on whether changes to the distribution network flexibility framework are to be considered so that this can be factored into the price control design.

Q18. Can anticipatory network reinforcement be used to smooth the long-term build profile to avoid creating pinch points for the supply chain and workforce? What are the risks and trade-offs?

It is positive to see Ofgem considering the potential supply chain and workforce-related risks to the delivery of network upgrades. Regen has previously highlighted the risk that, unmitigated, supply chain and workforce constraints could lead to DNOs being unable to deliver the network capacity required. We agree with Ofgem’s characterisations in paragraphs 6.40 and 6.41 of the opportunities and risks that enabling DNOs to take an anticipatory approach brings.

Our analysis of DNO headroom data suggests that the rate of intervention on primary networks will be greatest in the first half of the 2030s if we adopt a net zero pathway aligned with the government’s CP2030 plans¹.

¹ Page 27, Electrification: the Local Grid Challenge. Note: analysis carried out in spring 2024 with data available at that time.



Annual intervention rates at primary substations could more than triple by the 2030s

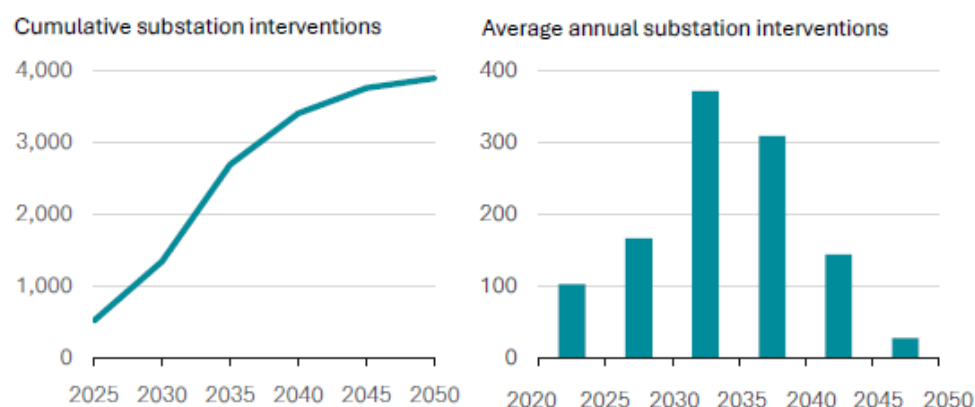


Figure 1: Regen analysis of DNO headroom data. Interventions include physical network changes as well as non-network solutions such as network flexibility.

We think it might be helpful for Ofgem to be more specific on what it means by anticipatory investment. When making anticipatory investments two key parameters can be varied; investment lead time and the investment horizon. We define these as:

1. **Investment lead time:** how far ahead of a forecasted constraint an intervention is made. For example, for a constraint forecasted to occur in winter 2033/34, the solution could be implemented several months in advance (autumn 2033), a year in advance (2032), several years in advance (e.g. 2030).
2. **Investment horizon:** how far into the future a network intervention is designed for. For example, for a constraint forecasted to occur in 2034, is the solution sized to demand in 2044 or in 2050 (or further ahead).

This is illustrated in the figure below:



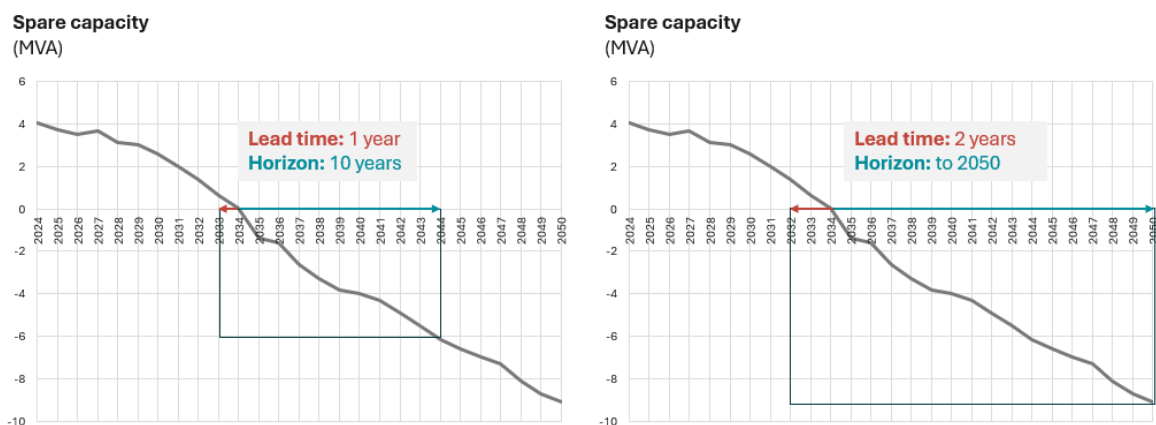


Figure 2: Illustration of investment lead times and investment horizons for a primary network asset upgrade.

Q20 Is a 5-year price control (2028–33) the right duration to achieve the objective of securing timely network capacity for the net zero transition at least cost to consumers over the long run?

Fluctuations in network investment have coincided with price controls

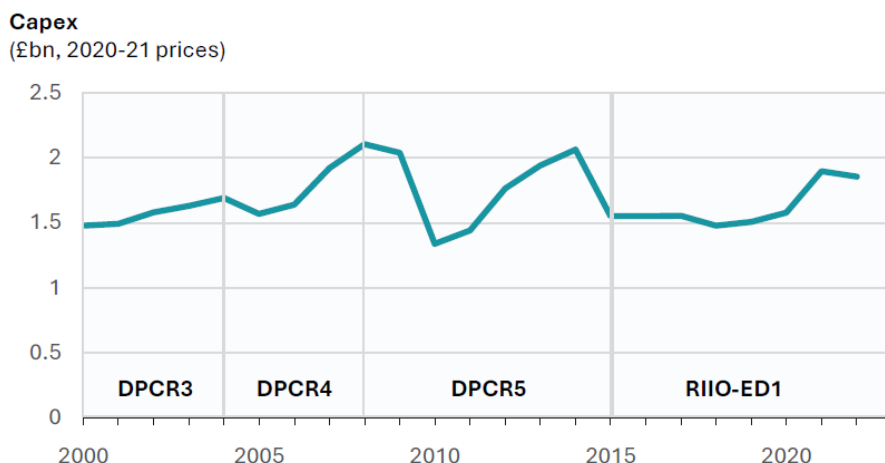


Figure 3: Distribution network reinforcement, replacement and network fault CAPEX (£m, 2020-21 prices). Source: Nera Consulting, Ofgem annual reports.

Regen has previously argued that the current model, with 5-year price controls, does not support long-term planning – as network investment fluctuates, supply chains have to adjust to boom and bust years. Expenditure data exhibits a ‘saw-tooth’ profile, with DNOs ramping up



work through each price control and then slowing the pace until budgets have been confirmed for the next period (see Figure 3). This impacts the supply chain, with lower levels of investment in capacity due to the lower levels of certainty.

Ofgem is right to consider how it can change the framework so that investment levels do not fluctuate so much from year to year. In Regen's view, the introduction of Regional Energy Strategic Planners provides an opportunity for a longer-term approach to network investment. Setting a long-term upgrade plan for local networks as the basis for price controls would smooth out the current boom-and-bust investment profile.

This will need to be well-designed, to manage risks around gaming and ensure that network companies can take a whole-system view across load and asset health. In paragraph 9.16, Ofgem proposes that DNOs could be required to consider asset condition-related and load-related investments together. Regen would support this – as data from DNOs shows that a large proportion of assets will need to be replaced due to age/condition in the coming years and decades, providing an opportunity for load-related upgrades at the same time.

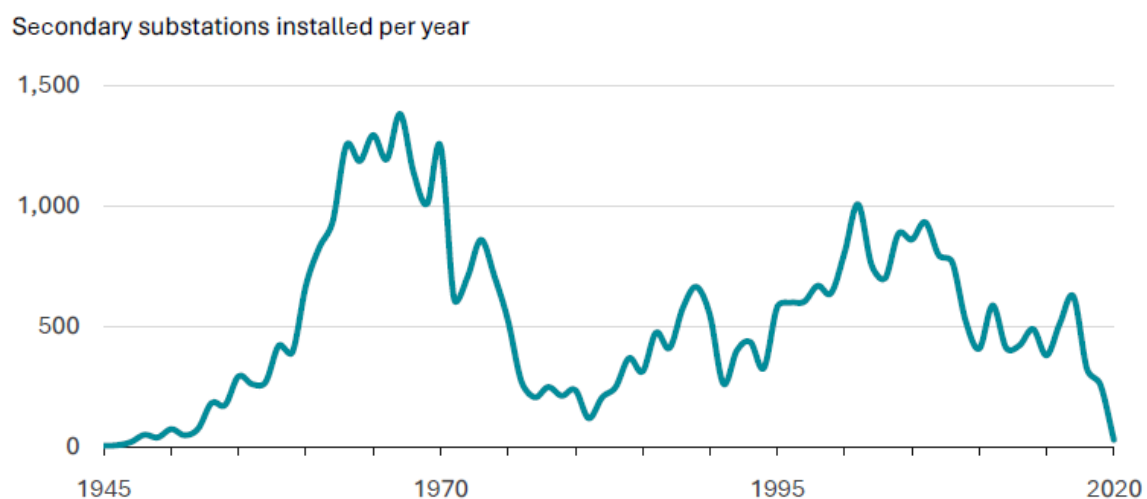


Figure 4: secondary (11 kV/LV) transformers in operation in 2022 by installation year across both SSEN licence areas. Source: SSEN ED2 Engineering Justification Papers.



Responsible business

Q25. How can we better strengthen accountability for consumer outcomes?

Ofgem is right to highlight that transparency is key to driving greater accountability.

During the RIIO-ED1 price control, a key source of information used by stakeholders to hold DNOs to account was the supplementary data file to the Annual Reports produced by Ofgem. However, Ofgem did not publish a report for the final year of ED1 (the last report was published in March 2023 for the 2021-22 period)². Ofgem has published a Regulatory Financial Performance Data File, but this does not contain the same level of comparative data across DNOs.

Without information on comparative performance, it is very difficult to hold DNOs to account (particularly for DNO activities where performance is managed via reputational incentives). As a priority, Ofgem should:

- 1) Publish the Annual Report data for the last year of ED1 and the first year of ED2
- 2) Continue publishing Annual Reports for the remainder of ED2 and into ED3

The introduction of RESPs is a new area where accountability will be important. Ensuring that there is effective governance in place across Ofgem, NESO/RESPs and DNOs will be crucial to ensure that the sector can be made accountable. This was highlighted across the insight and thought leadership papers published by Regen:

- [Planning the regional energy system to deliver net zero](#)
- [Roadmap to RESP: Unlocking regional ambition](#)
- [Regional Energy Strategic Planners: Recommendations from the Energy Networks Association Distribution Network Operator group](#)

Q35 Has the Broad Measure of Customer Satisfaction (BMCS) incentive served its purpose in driving performance improvements and how can we adapt the metrics to better incentivise performance across a wider range of interactions between DNOs and their customers, particularly relating to connections?

It is positive to see Ofgem highlighting that the rate of small-scale connections from LCTs such as EVs, heat pumps, roof-top solar and batteries will accelerate rapidly in the near future.

Regen regularly engages with companies and groups involved in the installation of low-carbon technologies to gather feedback on the network-related issues that they face. Figure 12 in the framework document shows evidence that DNOs are all achieving high levels of customer

² [RIIO-1 Electricity Distribution Annual Report 2021-22](#)
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satisfaction – however, engagement that Regen has carried out suggests that LCT installers (and customers having LCTs installed) are encountering a range of ‘hassle’ barriers. These include:

1. A semi-digitalised connections process
2. A lack of clear guidance for installers on supply adequacy
3. Challenges coordinating works between DNOs and suppliers (who own meters)
4. Different connection policies between DNOs (80A and 100A fuses)
5. Patchy communication of policy changes

These issues are detailed in more length in our report [Electrification: the Local Grid Challenge](#), in Section 5 (page 36 onwards). To incentivise better performance Ofgem could consider a more specific metric for LCT connections.

Paragraph 3.12 suggests that Ofgem sees poor LCT connections performance as an issue that leads to delays to LCT installation. It is important to note that in many cases the ramifications are more significant than just a delay to installation – for example, a slow turnaround on a connection request for a heat pump may lead a householder to install a fossil-fuelled boiler instead, leading to decades more CO2 emissions or removal of the boiler before the end of its useful life.

Good work is being done in this space by DNOs – for example, SSEN’s [LCT readiness project](#) will produce Connection Readiness Indicators so customers can easily understand how ready a property is to connect an LCT and give them the ability to request DNO works in advance, reducing the potential for delays when they eventually install an LCT.



Figure 12: CSS industry average performance 2015/16 to 2023/24

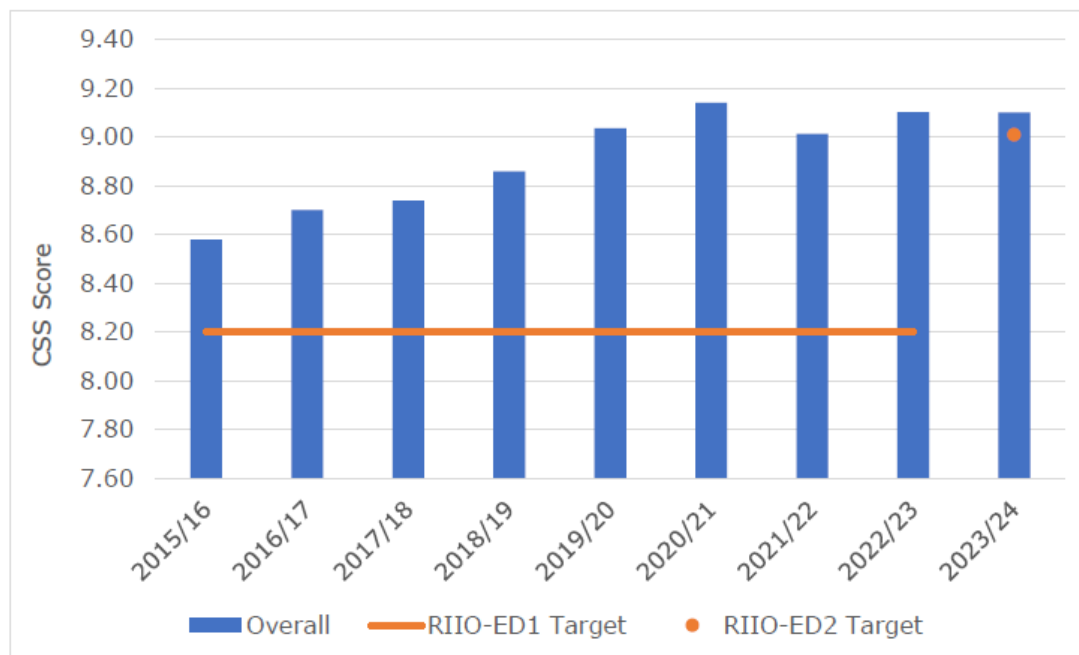


Figure 5: Customer Satisfaction Survey (CSS) scores, from Figure 12 in the framework consultation document.

Smarter networks

Q53. Our aim is for the ED3 framework to be structured to deliver high-impact, transformative innovation – do you think that further changes, alongside those proposed for the other sectors in our RIIO-3 SSMD, are required to deliver this?

It is positive to see an acknowledgement of the need for innovation to deliver a more transformative impact in the next price control. Many of the proposed reforms seek to address barriers identified in Regen’s recent study in partnership with the Green Finance Institute (GFI), [What’s next for financing network innovation?](#) These are summarised in Figure 6.

The desire for more innovation projects to be funded as BAU by companies can ensure that innovation delivers more transformative impact but it must be accompanied by key performance indicators set out by the framework that promote networks to seek efficiencies brought about by embedding innovative technologies and approaches. Network and innovation stakeholders engaged in Regen’s recent study with GFI highlighted unsuitable KPIs as a reason for network innovation delivering largely incremental changes during previous price controls.



Among the potential solutions set out in our report with GFI include enabling innovators to access innovation funding without the need to partner with networks which can transform their role in the current landscape. Roles for other third parties including private capital, using blended finance models should also be considered and are set out in the solutions section of the report.

Q54. Are there any factors particular to DNOs that facilitate or challenge deployment of innovation on their own and across networks?

Regen welcomes the continuation of innovation funding in ED3. Incentivising innovation and embedding new technologies and approaches is challenging in regulated monopolies, where the regulator must find a balance between incentivising bold innovation with other key performance indicators such as resilience and customer service.

This was identified as a key barrier, alongside others, in Regen’s study with the Green Finance Institute, [What’s next for financing network innovation?](#), the report explored the limited role of private finance at present, identified the key barriers and presented potential solutions which could unlock greater levels of private capital to accelerate network innovation.

These are summarised in Figure 6, with timelines and approaches to risk in particular relating to some of the DNO-specific challenges.

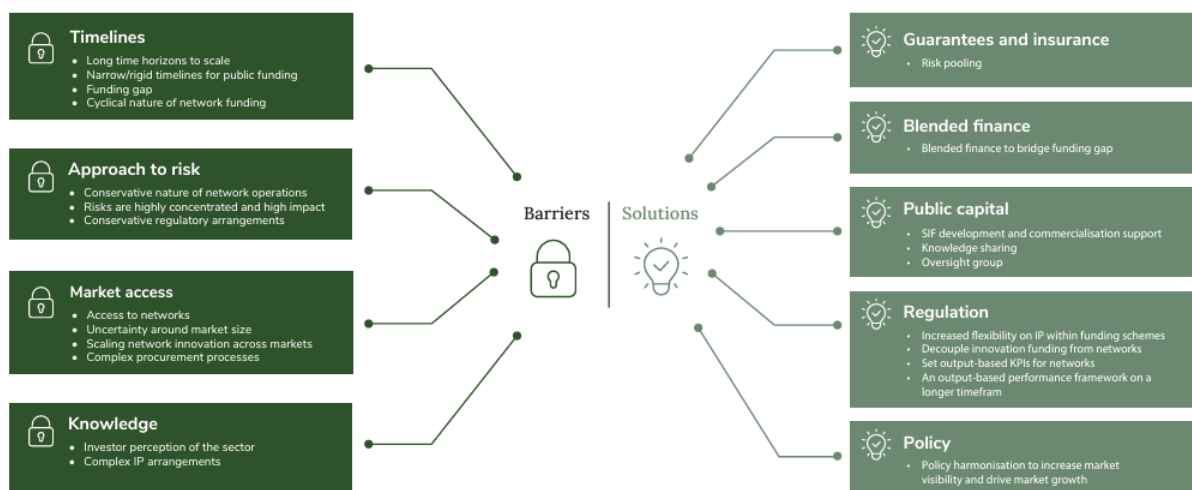


Figure 6: Barriers and solutions to private capital financing network innovation, as identified by Regen and the Green Finance Institute's joint report: *What’s next for financing network innovation?*³

³ Page 5, [What’s next for financing network innovation?](#), Regen and GFI.
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Resilient and sustainable networks

Q60. Do stakeholders agree with retaining and strengthening the main components of the environmental framework from RIIO-ED2?

We agree with Ofgem's characterisation of the issue of network losses – that losses will increase with higher asset utilisation, that they are generated mainly on the distribution network and that losses should be factored into network company cost-benefit analyses during the optioneering process.

Ofgem is right to highlight both the CO₂ emissions impact and the consumer cost impact of losses. Whilst the CO₂ emissions impact has and should continue to fall with falling generation emissions, the cost of losses has significantly increased with higher wholesale electricity prices.

It is not clear how Ofgem expects a change in performance from DNOs on losses without a financial incentive, so we welcome a review of whether the existing regulatory arrangements related to network losses are suitable.

Additional feedback

Bill impact

Paragraph 1.17 states that Ofgem expects “that a more proactive approach to network investment is likely to have an impact on bills, all else being equal”. This view is reiterated in paragraph 7.108.

However, all else is not equal and Ofgem mustn't focus on the consumer cost of network infrastructure in isolation. The electrification of heat, and transport in particular, promise to allow consumers to spend significantly less on energy than they do currently – for example, by charging their car overnight when demand and prices are lower. Whilst proactive investment may increase the network element of the bill, overall bill reductions are anticipated. Not proactively investing in network capacity could mean customers are prevented from accessing the total bill reductions that LCTs enable.

