

Consultation Response: ED3 Framework Consultation

Dear RII0-3 Team,

We at [Electron](#) appreciate the opportunity to contribute to Ofgem's ED3 Framework Consultation. As a leading provider of digital platforms for energy flexibility markets, we are committed to supporting the evolution of the UK's electricity distribution networks to meet net zero targets efficiently and effectively.

We commend Ofgem's bold thinking on the critical role flexibility, particularly its role in supporting network expansion versus serving solely as an alternative to it. Flexibility has the potential to create whole-system value that goes far beyond network upgrade deferrals alone - we believe this represents a significant opportunity for our sector.

When viewed this way, flexibility is *not* used to simply defer network upgrades between price control periods. Instead, it enables system operators to expand grid capacity more rapidly, connect new clean MWs faster, and prioritize the deployment of new network infrastructure where it's needed most.

This approach will provide consumers with lower energy and system costs while underpinning the GDP growth that new connections bring to UK plc.

We also welcome the invitation this consultation provides to think more boldly about the whole-system value of flexibility and how access to this value might be facilitated. We look forward to being part of ongoing discussions as incentives are reimaged.

1. Flexibility is an important part of network expansion and not just an alternative to it

- Flexibility represents the fastest, most cost-effective route to expanding network capacity.
- Moreover, it is not merely an *"interim measure to alleviate capacity requirements if reinforcement has a long lead time."* Running flexibility markets—particularly across a mix of time periods—enables better investment decisions and prioritization. The option value of deferring decisions unlocks improved load and technology forecasts, along with several years of data on price-driven behavioural changes in the region (we expanded on this in our [blog](#) on the role of flexibility in an expanding network).
- In this way, "flexibility first" still holds and delivers value to consumers and the wider system by ensuring the best decisions are made. RESPs alone will not suffice without supporting data; they risk creating one-off snapshots of strategic needs instead of living, dynamic datasets that represent the relative value of networks by time and location.

2. Unlocking the whole-system value of distribution-connected flexibility

- Our work with network and system operators to date suggests that a major inhibitor to scaling network flexibility has been the narrow way in which its value has been

attributed. Specifically, decision-making frameworks have typically only considered the value flexibility brings to expanding the distribution network. However, as you note, distribution-connected flexibility can deliver much broader whole-system value.

- Since DNOs will continue to play a role in securing options on flexibility—such as headroom and grid insurance products in advance—we suggest that DNOs be enabled and incentivized to secure more flexibility based on whole-system value. This would ensure that local network needs are met while allowing this flexibility to be released into national balancing markets or local secondary network capacity optimization markets (e.g., BiTraDER).
- This approach would also facilitate local and national coordination while simplifying market access for DERs. It would enable DERs to stack network market value with revenues from balancing and capacity markets. We welcome the opportunity to discuss this potential operating model further.

3. Missing incentives for the option value of flexibility in resource allocation and faster connections

- The timely addition of network capacity must be incentivized. However, the rapid development of peak network capacity across all regions is not only undesirable but also unfeasible.
- One aspect we feel was missing from the consultation is a clear view of how DNOs can be supported to build a whole-system flexibility value model more quickly. What new incentives are needed to connect new MWs faster and prioritize whole-system value?
- This is particularly critical, given the recognition that this transition is a consumer-led paradigm—not just a top-down one.

We are committed to being a constructive and collaborative participant in the energy ecosystem, working alongside Ofgem and other stakeholders to achieve our shared goals. We look forward to continued engagement and are available for further discussions to elaborate on our response.

Thank you for considering our input.

Sincerely,

Jo-Jo Hubbard

CEO, Electron

Drivers for Change

Question 1: Do you agree with our characterisation of the wider context for ED3? Are there any other areas of context that you consider material for ED3?

Broadly, yes- the wider context for ED3 is well summarised.

Although, we are concerned that section 3.10 might be misleading as worded, in that it suggests that the gap between network capacity contracted versus met is *primarily* due to coordination inefficiencies that could be addressed by the market facilitator role.

While the market facilitator has an essential role in improving coordination across DNOs and balancing markets, our discussions with DNOs and Flexibility Service Providers (FSPs) alike—as well as lessons from the Demand Flexibility Service (DFS)—indicate that the key lever is price.

Addressing this challenge requires reforming the narrow DNO flexibility evaluation methodologies to account for broader system values of flexibility. More on this in our answers below.

ED3 Objectives and Consumer Outcomes

Question 2: What are your views on our overarching objective and proposed consumer outcomes?

We welcome the expansion of Ofgem's remit to include net zero and economic growth. We support Ofgem seeking and sharing greater clarity on how these new objectives will be balanced / traded off against existing duties to represent consumer interests and affordability.

If consumers are funding network expansion to drive economic growth, mechanisms *must* ensure that they also receive a share in the value created, not just the asset investors.

One of the most effective ways to deliver this value is through well-designed flexibility markets and sharper time and location-based price signals. These mechanisms would not just allow consumers to benefit directly from lower renewable energy costs during surplus periods and earn better rewards for participating in flexibility markets during times of scarcity, but also play a crucial role in lowering whole system costs (coupled with appropriate regulation to protect those vulnerable to such exposure). Currently, consumers are burdened with whole-system insurance costs without sufficient access to the economic upside of faster capacity deployment. Addressing this imbalance is key to ensuring fairness and fostering trust and continued buy-in to the transition to net zero.

Regulatory Framework

Question 4: Do you agree that we should consider introducing additional controls around network investments and what features should these controls contain?

Yes, we agree that additional controls are necessary to ensure network investments are efficient, targeted, and aligned with consumers' long-term interests. Flexibility should be a cornerstone of network investment strategies. Leveraging flexibility markets as an auditable tool can provide transparent data to validate whether DNOs are making optimal investment decisions. By deploying flexibility solutions in areas of potential constraint, DNOs can:

1. Identify genuine needs for traditional upgrades and avoid overbuilding.

2. Optimize the timing and scale of investments, minimizing premature or excessive infrastructure development.

This approach not only improves capital and resource efficiency but also offers a robust mechanism for justifying costs, ensuring decisions are data-driven and provide better value for consumers. To embed flexibility-first principles, the following controls should be considered:

- Mandatory use of flexibility data in network planning and decision-making.
- Evidence-based reporting requirements to justify infrastructure investments.
- Incentives for DNOs to prioritize flexibility, enabling balance between immediate needs and long-term goals while supporting the maturity of flexibility markets.

These measures will promote smarter, more sustainable investments, aligning with net-zero goals and ensuring affordability for consumers.

Question 5: Do you agree that the incentives on DNOs will need to adapt from RIIO-ED2 and if so, how?

Yes, we agree that DNO incentives for flexibility need to evolve. To ensure the continued viability of network flexibility and avoid every RESP forecasting overly ambitious peak network, it is crucial to retain *some form* of totex mechanism. This approach preserves DNOs' ability to choose the fastest and most effective methods for providing capacity.

However, the current definition of flexibility needs refinement. At present, flexibility is primarily evaluated based on its deferral value alone. A revised framework should account for the broader benefits flexibility provides, including faster connections, system optimization, and enhanced resource efficiency, ensuring that DNOs are properly incentivized to integrate flexibility as a core component of their strategies.

Question 6: Do you agree that there is still a role for re-openers in ED3, particularly given the timing of the future full RESP output and how should these be triggered?

Yes, we agree that re-openers remain essential in ED3. Re-openers could enable DNOs to better attribute and reference the whole-system value of distribution-connected assets, building on the precedent set by ED2 LRE re-openers. This would provide DNOs with the flexibility to adapt to emerging system needs while aligning investments with broader system value.

For transitional RESP outputs to be effective, DNOs must have substantial and early input into these forecasts. Re-openers will play a critical role in managing change and ensuring that evolving insights from RESP outputs can be seamlessly incorporated into ED3 plans, supporting timely and efficient network investments.

Networks for Net Zero

Question 10: What is the potential availability of network flex across GB for DNOs in the short term and on the journey to net zero during ED3?

This depends heavily on the maturation and pricing of flexibility markets. Fundamentally flex providers do not mind if they are selling network flex or system-level flex, they care about the value

they receive and the ease of unlocking this value. Therefore, allowing network operators to pay system value of flex and pass that reserved capacity on to the system could rapidly transform the volume of available network flex. This in turn will increase the value of network flex, once there is sufficient volume to start connecting new MWs faster on the back of secured flexibility. Increasing the volume increases the value and increasing the value increases the volume. Markets (esp. Low friction ones) are needed to get this fly wheel going (see our Value/Volume [blog](#)).

In terms of what quantum of network flexibility is needed by network operators: this will depend heavily on:

- A) How fast (DNOs are incentivised to) connect new MWs of both generation and demand capacity: i.e. to what extent are they willing to (temporarily) load networks; as well as
- B) What volume of system flex DNOs are incentivised to let flow through their network (our back of the envelop calculations suggest that this needs to be 70-100TWh to substantially displace gas, 60-70% of which zero carbon flex (batteries and demand response) will likely flow through distribution networks). This volume would likely also create constraints at the distribution level especially for demand turn-up which will be substantial in a world of +8GW renewable capacity by 2030.

The more flexibility you need, the more you pay for it, the more you have/ can rely on the more valuable it is/ more use cases it unlocks. Price and proposition experiments such as the Demand Flexibility Service have proven rapid scaling of flex availability is possible. And also that market timing and design is key to unlock this fast. Key amongst these are:

- Low friction market entry processes
- Multiple time frames
- Built in value stacking

We expand on the last point, or an option of how this might work, in question 49.

Question 12: 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 deeply support Ofgem's push to move from a world in which delivery efficiency means cost of delivery vs execution, however we also note that this argument will not hold up in extremis i.e. peak network everywhere. Costs would rise disproportionately due to competition for human and network resources. Fortunately, such an outcome is extremely unlikely to be deliverable.

We really urge the narrative and direction of ED3 *not* to divorce the concept of flexibility from network investment but to see it as part of prioritising it. You will recognise a theme in this response: *Flexibility provides real-time insights into system needs and demand patterns, enabling DNOs to prioritize and value investments more effectively.*

We would go one step further here: in a world that supports pre-emptive investment (which we support), greater deliverability accountability is needed and data driven ways to demonstration a control in capital delivery will be key. It will also protect the Net Zero Energy mandate itself politically. Government risks losing support for this transition if they cannot prove capital efficiency and that consumers are not paying for network expansion that only business can monetize. Used properly, payments and data from flexibility markets are a cure here.

Question 13: What are the benefits and risks to deliverability if network reinforcement is deferred to future periods?

Accepting that DNOs need to build fast but cannot do everything at once, it is essential to use data from flexibility markets to prioritize investments. This should not rely on a one-time RESP study, but rather create a dynamic, real-time indicator that identifies the next most valuable locations for network expansion.

Benefits:

- Smarter Investment decisions
- Living, breathing indicator of relative value of capacity expansion by region in which flex markets are run i.e. prioritise interventions
- For every year in which build is delayed, locational load forecasts can be improved
- For some regions, within the time period of ED-3, upgrades really may be superfluous and market data can prove this on an ongoing basis instead of having to make ex ante assumptions.

Risks:

- Reliability
- Inhibited economic growth
- Cost increases in network infrastructure

By using flexibility data to guide decisions, DNOs can ensure that network expansions are targeted, cost-efficient, and responsive to actual system demands, avoiding overbuild and ensuring long-term system resilience.

Question 14: What do you see as the role of distributed flexibility, both in the short and longer term, to manage distribution network constraints?

We see a continued role for distributed flexibility in managing network constraints in the short term. We expect an increase in requirements, especially nearer real time, in the medium term if the speed of new build and connections set out in CP30 is anywhere near correct. We also see a much more important role for data from these markets in determining this and enabling DNOs to make appropriate assets investment decisions in the medium term.

We think it's important to note that DNOs are already well incentivised to expand their asset base when this asset is likely to be well-utilised so it's possible that the perceived "under investment" in distribution network build out is actually a data-driven decision and not because not building pays more than building effectively today: that is simply not the case over the life of an asset according to any analysis that we have seen.

Longer term, this remains to be proven but it's likely that peak network is still not the answer in a predominantly renewable, variable world. We note that today we have no good data on this so we see one of the most important roles of flexibility markets in the short and long term as bringing new information to light as to behavioural change and relative value across regions.

We deeply support Ofgem's whole system value focus and, in this light, would urge for the exam question to look at how to capture whole system value of flex before it looks to determine which proportion of that is to manage distribution-level constraints. Under cost reflective pricing and simplified contracting locations value that flexibility highly enough to be reserved exclusively for network constraints instead of broader system value will likely emerge and pay flexibility highly, even on a transitional basis. See question 49 for how this might be determined.

Question 15: How do we ensure that network flexibility is used only when it is in consumers' long-term interests in ED3?

- Redefine and clarify whole system value – with clarity on trade-offs between long term consumer value and short term costs.
- Enable DNO procurement to pay out more of this value with a new DSO/ NESO market value orchestration approach – see question 49.
- Ensure on-going auditability and accountability for flexibility value paid/ investment decisions made so that this approach may evolve overtime with new market-based data and learnings.

Question 23: Should the price control provide more guidance or guardrails around the use of particular network solutions to achieve the 'networks for net zero' consumer outcome?

Yes, the price control should provide more guidance and guardrails around the use of specific network solutions to achieve the 'networks for net zero' consumer outcome. As discussed in our answers to questions 4, 5, and 6, it is crucial to ensure that network investments are efficient, targeted, and aligned with long-term consumer interests. Flexibility should be a central element of network solutions, and the data unlocked by flexibility markets a key tool in auditability of decision making and evolving consumer value assumptions.

The guidance should encourage DNOs to use flexibility data in network planning and decision-making, ensuring that they are incentivized to deliver the most cost-effective solutions that align with net-zero goals. Additionally, re-openers and evidence-based reporting can help ensure that DNOs are adapting their strategies as new system needs emerge, promoting continuous alignment with consumer outcomes. By providing clear expectations and incentives, the price control can help drive the transition to net zero while safeguarding consumer interests and long-term value.

Responsible Business

Question 38: In the context of greater electrification, is our current approach towards regulating reliability appropriate for ED3?

While the current approach provides a foundation, it must evolve to align with the demands of greater electrification. DSOs should be encouraged to adopt a higher level of ambition in leveraging flexibility to mitigate outages, ensuring reliability is maintained as electrification accelerates.

Additionally, providing connectees with access to planned outage data would enable more informed decision-making. This data would support investment case modelling and help prioritize network expansion, ensuring resources are allocated effectively to enhance both reliability and system resilience.

Question 42: How should our guidance for cost benefit analysis evolve to better enable optioneering between different interventions, taking relevant long-term risks and benefits into consideration?

Under the current price control regime, the largest reward for DSOs stems from shared savings via network deferral. However, if flexibility's value is to extend beyond deferral, the tools used to evaluate it must evolve. For example, the Common Evaluation Method (CEM) is outdated, as it

primarily values deferral without accounting for the broader, system-wide benefits flexibility can provide.

We recommend the following considerations to improve cost-benefit analysis:

1. Accelerating clean energy connections: Flexibility should be recognized not just as an operational tool but as a strategic enabler for connecting new clean energy capacity faster, enhancing the grid's adaptability to meet net-zero goals.
2. Capturing system-wide benefits: Flexibility secured by DSOs can provide significant externalities, such as balancing national supply and demand or enabling local connectees to temporarily adjust their input or output, creating value across the entire energy system.

If DSOs are incentivized to adopt an ecosystem-focused approach and rewarded for delivering system-level value, flexibility service providers (FSPs) can receive fairer compensation without relying solely on national capacity markets or balancing mechanisms. This would lower entry barriers, improve liquidity in flexibility markets, and foster market maturity, making flexibility a more scalable and reliable solution for the long term.

Smarter Networks

Question 48: How should the price control encourage ongoing development of the DSO role and activities to optimise whole system benefits for existing and future consumers?

- Flexibility Market Integration: Prioritizing flexibility as a solution to network constraints and expansion, with DSO incentives tied to securing flexibility solutions across both local and national systems, ensuring cost-effective, dynamic responses to system needs.
- Data-Driven Decision Making: Encouraging DSOs to utilize real-time flexibility data and AI tools to optimize network planning and investment, ensuring smarter, more efficient decisions that balance short-term and long-term system goals.
- Incentive Alignment: Creating incentives that reward DSOs for delivering whole-system value, including faster clean MW connections and better system integration, while ensuring that consumer interests, including affordability and reliability, are safeguarded.

Question 49: What should the role of the DSOs be in identifying and delivering whole system benefits?

DSOs are well placed to have a primary interaction with distribution connected assets, as well as a view of the headroom of their local network delivering distribution-connected flex to national/system-level markets. One of their main challenges in bringing this flexible volume to market at scale is the way in which they are allowed to attribute value to the flexibility they procure (i.e. only distribution-network value which is estimated by the DSOs with whom we speak at 10-30% of potential system wide value in all but the most constrained regions).

One, fairly simplistic and deliverable version of how this could work is as follows:

- DSOs are released to pay FSPs 100% of the whole system value for availability up until e.g. day ahead or nearer real time dependent on market maturity or liquidity. This essentially secures the option on those MWs by location that the DSO needs ahead of time but will have a much better view on day ahead. DSOs are freed to use a slightly less precise approach to then retrospectively verify and settle that value through alternative mechanisms.

- Nearer real time, the DSO will know whether this secured head room is required in this location and could release excess capacity to system level markets within a headroom envelope- sort of a more sophisticated version of the existing LCM market process. This could service market concepts such as generation capacity, short term operating reserve, transmission constraint avoidance and balancing. At this point, this regionally secured flexibility would be competing with assets that haven't sold long term options as well as transmission connected assets.
- Local flexibility markets, working alongside Elexon as market facilitator, could emerge as a solution to coordinate and value flexibility and procured capacity across regional, national, and wholesale markets.
- More dynamic trading mechanisms could be incrementally introduced (such a BiTraDER) to enable FSPs to economically optimise flexibility obligations between themselves, in real time, allowing more efficient resource allocation and optimisation without undermining secured capacity. I.e. working within the capacity envelope that has been communicated to the wider system.

It would be eminently possible to come up with a credible way to perform a cost benefit analysis on this model: as to whether coordinated NESO and DSO flex value could outperform wholesale market only trading strategies for FSPs while delivering more system value. A version of this is being explored within the Flexibility Markets Unlocked project that we are taking part in along with Arup, ESC and the University of Edinburgh. We would welcome the opportunity to discuss it.

Question 52: How should network companies use AI to improve network insight and decision-making (both operating expenditure (opex) and capital expenditure (capex)) and how should we be encouraging this through the ED3 framework?

If network companies are incentivized to make better decisions, they will adopt the best possible tools to do so, including leveraging AI to enhance their capabilities. AI can significantly enhance network insight and decision-making for both opex and capex, but only if it is supported by transparent, auditable data. Without this, there is a risk of a "black box" approach to investment decisions.

Flexibility markets can complement AI by providing actionable, real-time insights. By deploying flexibility solutions across multiple geographies, timescales and frequencies, network companies can gather valuable data to:

- Target grid buildout where it is needed most, based on data-driven insights.
- Avoid unnecessary buildout by using flexibility as a long-term solution, demonstrating where capacity needs can be met without traditional infrastructure.

Encouraging AI adoption in the ED3 framework should prioritize tools that align with flexibility-first strategies, enabling smarter, cost-effective network planning and faster connections to new clean MWs, benefiting both consumers and the wider system.