Demand Flexibility Product Proposal

Consultation Document
ESB Networks

DOC-191223-HVV

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1 INTRODUCTION

The decarbonisation of Irish society relies on fundamental changes to how energy is generated and consumed. Given the scale and pace of change needed to enable these changes at the right pace and the right cost, every Irish home, farm, community, and business will play a part. The National Network, Local Connections (NNLC) programme was established within ESB Networks to work with, and for, customers to help make this possible. We do this by facilitating the development of deep and liquid markets for flexibility, that encourage customer participation in climate action, and maximise the efficient use and value of the existing electricity infrastructure.

The Climate Action Plan 2023 (CAP23) reflects the need for a renewed, accelerated, concerted effort by all stakeholders to meet the level of emissions reduction required by the carbon budget programme and sectoral ceilings for the electricity sector. This step change puts a more immediate spotlight on the role of a flexible system in supporting renewables integration and electricity demand management. It establishes an interim target of 15-20% demand flexibility by 2025, building on the existing target of 20-30% by 2030. This is in addition to the electricity sector carbon ceiling, outlined in the Climate Action Plan 2021, of 40 MtCO2eq. for the first budgeting period (2021-2025), and 20 MTCO2eq for the second budgeting period (2026-2030).

As outlined in the CRU's recently published Energy Demand Strategy Call for Evidence (CRU/202356), the CRU is developing and implementing Ireland's national Energy Demand Strategy (EDS) with the aim of:

- Co-ordinating measures aimed at ensuring overall electricity and gas demand is consistent with Ireland's carbon sectoral emissions ceilings;
- Delivering demand flexibility and demand response initiatives, as outlined in CAP23; *and*
- Supporting the delivery of Ireland's transition to reach net zero emissions by 2050.

In doing so, the CRU is working closely with ESB Networks' NNLC programme to enable and incentivise the demand flexibility and response needed to deliver Ireland's national targets and ensure ESB Networks can securely and efficiently manage the electricity distribution network through this period of rapid change. In emphasising the priority of this work, in Q4 2022, the CRU issued ESB Networks with a Direction to accelerate the National Networks Local Connections programme in terms of initial scale and speed of roll-out, and broaden the scope of demand flexibility products to include carbon abatement. The initial focus of this acceleration was to reduce the 2022/23 winter peak consumption by at least 5%, in line with EU targets set in the EU emergency regulation on high prices, with a further focus on the 2025 and 2030 targets.

In this document, we outline a proposal for a medium term demand flexibility product to be procured in locations where there is a defined system need, as part of an overall programme to meet the capacity requirements summarised in ESB Networks "Electricity Distribution Network Capacity Pathways" report[1]. Medium term demand flexibility can be taken to mean the ability to deliver demand reduction, demand shifting or inject power at or near their full contracted capacity for a minimum of 4 hours each day over specified hours, on the majority of business days over a minimum of 3-6 months of the year. The product has been designed to meet the specific network need arising at this time and support the delivery of the 2025 and 2030 targets.

Subject to the outcome of this consultation and CRU approval, this procurement is expected to involve a preliminary round in mid-2024. Indicative locations shortlisted for inclusion in this process will be published as an addendum to this consultation in early 2024. The volumes of the product sourced and contracts issued will depend on it being demonstrated that the requisite volumes of technically acceptable solutions can be sourced efficiently. However, indicatively it is anticipated that of the order of 100 MW would be sourced in the first procurement round, with cumulative volumes across the first and subsequent rounds potentially up to 500 MW.

Notwithstanding this scale, substantial additional volumes of demand flexibility with a range of different technical characteristics (in terms of e.g. locational, reliability, frequency and duration of delivery, months/years confidence of service delivery) will remain to be filled in the near future. In addition to the channels currently available for providers to contract to provide demand flexibility (for example "Beat the Peak Business"[2] and other competitions as announced on ESB Networks' website and e-tenders on a rolling basis) a range of channels are in development and will be opened for different flexibility providers to participate, offering different technical solutions to different technical needs. For more detail, please refer to ESB Networks' Flexibility Multiyear Plan and the CRU Energy Demand Strategy Consultation, both to be published shortly following the publication of this consultation.

Extensive consultation and engagement has directly informed the development of the proposed product. This includes but is not limited to:

- Engagement with the NNLC programme Advisory Council regarding the proposed product, at all council meetings from Q4 2022 onwards. The Advisory Council have a formal mandate to represent and disseminate to all relevant system users and the TSO in the development and rollout of flexibility solutions;

[1] https://www.esbnetworks.ie/docs/default-source/publications/safety-statement-esb-networks-dtis-130199-avt.pdf?sfvrsn=45092a37_7

[2] https://www.esbnetworks.ie/who-we-are/beat-the-peak/overview/beat-the-peak-business#:~:text=What%20is%20Beat%20The%20Peak,Friday%2C%20excluding%20public%20holidays)

- Bilateral and multilateral engagement with parties working in the area of demand side flexibility and storage development throughout Q1 – Q3 2024 regarding the nascent and developing proposal;

- Public consultation regarding the intended scope, timing and target providers for a medium term flexibility product in the CRU's EDS Call for Evidence consultation of June -August 2023;

- Public consultation regarding the intended scope, timing and target providers for a medium term flexibility product in ESB Networks' Flexibility Multiyear Plan 2024 – 2028 Call for Input consultation of July – September 2023;

- Through our standard stakeholder email, we invited registered stakeholders to bilateral sessions to discuss the initial parameters of the proposal as identified in the scenarios published as part of the CRU's Energy Demand Strategy call for evidence.

- Bilateral and multilateral meetings and workshops arranged to support the public consultation processes cited, facilitated by ESB Networks and/or the CRU on a case-by-case basis;

- Consultation with the relevant government departments and agencies to ensure policy coherence and progress any more detailed technical review, through the EDS working group, convened by the CRU as part of the EDS governance structure;

Furthermore, the outcome of this Demand Flexibility Product Proposal consultation will influence any updates to the proposal prior to its approval or otherwise by the CRU. This activity is in accordance with ESB Networks' obligations as DSO engage in a transparent and participatory process that includes all relevant system users and the TSO, with a view to establishing the specifications for proposed flexibility services to be procured.

In the remainder of this document, we outline proposed near-term market arrangements for a medium-term demand flexibility product and seek respondent views in relation to a number of areas. Feedback provided will be considered before final decisions on market arrangements are made by the CRU.

- The remainder of Section 1 provides the relevant context for the proposed procurement process.
- Section 2 outlines the principles that have been used to guide this proposal.
- Section 3 outlines the demand flexibility product proposal.
- Section 4 outlines the expected demand flexibility procurement approach; and

In parallel with, and subsequent to the outcome of this consultation process, further detailed work is being undertaken in collaboration with the CRU and other relevant stakeholders, to support the progress of this product to procurement in 2024. The programme of work includes inter alia detailed locational and economic analysis to finalise the sequencing, batching, and reserve pricing of locations, location-specific parameters for procurement (including MW, MWh and indicative run hours), calculating optimal sharing factors and other quantitative design parameters, and contract drafting.

1.1 WHY WE NEED DEMAND FLEXIBILITY

At the same time as Ireland is looking to reduce electricity sector emissions in line with CAP23 targets, electricity demand is forecast to grow dramatically over the next decade. ESB Networks has recently complemented its ongoing demand forecasting activity by commissioning a study by Charles River Associates (CRA) to provide a detailed analysis of the demand growth rates and the peak demand values for the electricity distribution system in Ireland for the period 2023-2040. This independent expert analysis predicted average annual growth rates of up to 8.3% on a national basis, with individual locations subject to growth exceeding this. Similarly, EirGrid's recently published 'Tomorrow's Energy Scenarios 2023 Consultation Report' suggests that the total electricity requirement in Ireland will grow from 33 TWh in 2022 to approximately 80 TWh by 2035, with peak demand more than doubling in the same period - from 5.5 GW to approximately 11 GW.

These forecasts come on top of total electricity requirement growth of over 30% over the previous decade which has led to a number of existing constraints on the distribution network and impacted available capacity for both demand and renewable generation connections.[3] In relation to the latter, to increase the proportion of demand that is met by renewable sources to 80% by 2030, CAP23 has called for a target of 9 GW from onshore wind (up from ~4.5GW in 2022), 8 GW from solar (up from 167MW in 2022), and at least 5 GW of offshore wind (up from 25 MW in 2022) by 2030. A significant proportion of this additional renewable generation is presently expected to connect to the distribution networks.

[3] These include, but are not limited to:

- 220/110 kV transformer capacity and 110 kV circuit thermal and voltage limits in Dublin (Within the Dublin geographic area the 110 kV system is part of the distribution system. Outside of Dublin the 110 kV system is generally part of the transmission system.);
- 110/38 kV transformer capacity at 110 kV nodes;
- 38 kV/MV transformer capacity at 38 kV stations;
- 38 kV and MV circuit thermal and voltage limits;
- Short-circuit level capacity of the existing network; and
- asset condition.

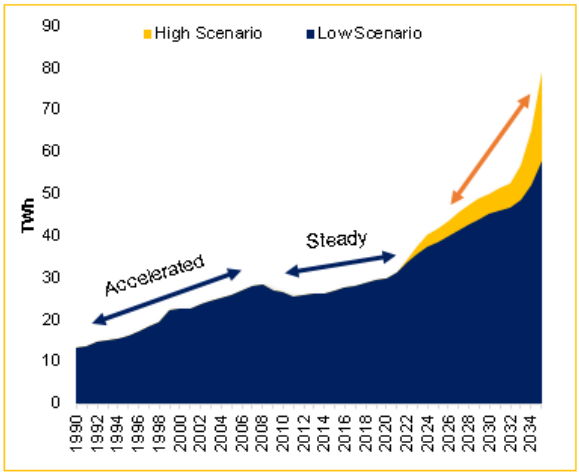

Figure 1: Total Electricity Demand Ireland

Sources: IEA, EirGrid

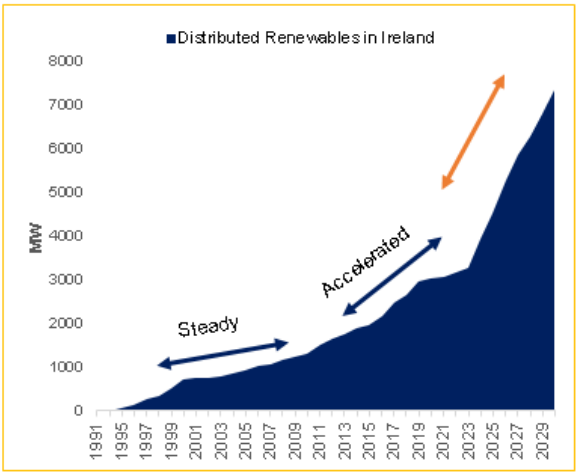

Figure 2: Distributed Renewables in Ireland

Sources: ESB Networks

The electricity distribution network is a critically important national infrastructure and an enabler for achieving the government's Climate Action Plan targets, for supporting a growing economy and for delivering Housing for All. ESB Networks' role is to deliver the electricity distribution network that will empower all our customers to decarbonise their energy consumption. Through the rapid growth and development of renewable power, Ireland's electricity system has been significantly decarbonised over the last decade. However this means that much of the capacity for generation connections on the distribution system to date has been utilised. Similarly, the scale of demand growth driven by electrification requires investment in capacity for demand connections, domestic, farming, industrial and commercial uses, across all voltage levels.

As such, in its capacity as distribution system operator (DSO), ESB Networks is developing ambitious plans to meet this demand and generation, alongside investment in a suite of non-infrastructure solutions to maximise the use of the existing distribution network. ESB Networks recent publication "Electricity Distribution Network Capacity Pathways" report[4] sets out the growing need for additional investment to ensure adequate capacity is available to facilitate the major growth in both electricity demand and renewable generation over the coming years. Our investment in the network is growing every year and is likely to be around €10 billion between now and 2030.

[4] https://www.esbnetworks.ie/docs/default-source/publications/safety-statement-esb-networks-dtis-130199-avt.pdf?sfvrsn=45092a37_7

In this context, the objective of the product proposed in this consultation, amongst other in-development demand flexibility products, is to ensure that flexibility is one of the smart solutions, alongside network reinforcement, that will enable us to manage forecast growth and optimise network investment to the benefit of energy customers.

1.2 LONG-TERM AMBITION

Within the broad category of 'flexibility', there are various potential sources of demand flexibility. The role, impact and benefits of these different sources, and who the benefit accrues to, varies significantly. However each source has an important role to play. For example:

- domestic customers providing flexibility through aggregators will benefit from flexibility payments, while other domestic customers and small businesses connected on the low voltage (LV) network and nearby renewables will benefit from the increased security of supply resulting from less congested networks at a very localised level;
- XLEUs connected on the high voltage (HV) network providing flexibility using behind-the-meter assets and/or HV connected storage will benefit from flexibility payments, with distribution-connected demand and generation customers at all voltage levels benefitting from the increased security of supply resulting from less congested networks at a more regional level.[5]

In the long-term, we expect that a variety of demand flexibility products will be procured from a range of sources[6] (as illustrated in the scenario below) to help us ensure the network capacity to meet customers' need is available when it is needed, to help abate carbon, and in so doing deliver demand side flexibility targets.

[5] In both cases, society at large will benefit from carbon emissions reductions where the use of flexibility allows for more demand to be met by renewable generation (e.g., less congestion on the network reduces the need to constrain down renewable generation, allowing higher volumes to flow to meet demand).

[6] Sources will include commercial, small industry, CVR, domestic, large industry, and e-transport customers, as well as storage providers.

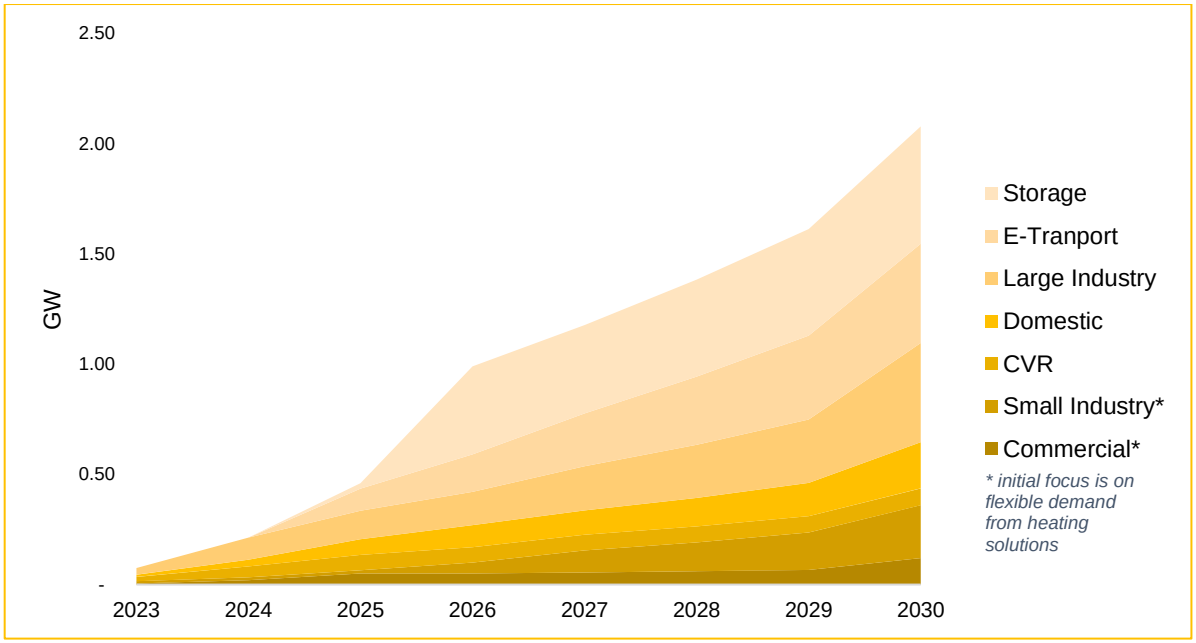

Figure 3:Possible sources of demand flexibility from different sectors

1.3 PROGRESS TO DATE

Over the period 2021 – 2023 ESB Networks has piloted the introduction of a range of demand flexibility products. These products have varied based on the need arising, and the customers whose participation is being targeted. Through this process we have tested the use of existing flexibility products from the UK (the ENA flexibility products – Sustain, Secure, Dynamic and Restore – with minor adaptations for the Irish market), and we have also developed simpler products better suited to an immature flexibility market, which involve lower entry barriers and can be rolled out more quickly. Through this process, we have learned much about the steps needed to stimulate the development of a deep and liquid flexibility market over time. In the shorter term we need to take a more customer/participant-oriented approach. As such:

- we have increased our efforts to research and engage with market participants and customers to identify who might be able to provide demand flexibility in the short, medium and long term, and are beginning to target their participation accordingly;

- we are focused on designing products (while meeting distribution system needs) in a manner that also reflects the commercial and technical context of prospective participants.

1.4 A TARGETED APPROACH FOR NEAR-TERM NEEDS

While there is a growing need for demand flexibility, the potential market for demand flexibility is still maturing, and thus we consider that more targeted approaches are needed to meet the immediate requirements on the distribution system. At the time of writing, for example, we note that:

- At the low voltage (LV) level, significantly greater penetration of flexible low-carbon technologies (LCTs) such as EVs or heat pumps, alongside digitalisation and aggregator services, is needed before these technologies can become sufficiently price responsive and be able to participate in flexibility markets at scale. This will take time to develop.
- At the medium voltage (MV) and high voltage (MV) levels, behind-the-meter investments are typically required to enable industrial and commercial customers to participate in large-scale flexibility. It will take time for business models to emerge and investments to be made to facilitate this at scale.

This is in line with the findings of the CRU's EDS Call for Evidence, which has found that there is a limited volume of demand flexibility which could immediately be sourced in Ireland today. This has led ESB Networks and the CRU to the conclusion that, to meet customer demands on the network, carbon abatement and national targets in the short term, there is an immediate need to ensure that effective means are available to ESB Networks to procure services from the most viable sources of large-scale demand flexibility in Ireland in a 2–3-year timeframe. In this context, some of the higher potential sources that have been identified are:

- Industrial and commercial businesses that are adopting electric heating solutions: by adopting this technology, they are making one of the key behind the meter investments needed to be able to participate in demand flexibility;
- Large energy users who for environmental and security reasons already invest in behind the meter technologies and thus are more readily able to participate sooner;
- Businesses and households who are adopting electric transport solutions and whose nearer term participation would be facilitated by the introduction of flexibility readiness standards and flexible connection products;
- Medium term flexibility providers, who can deliver locationally targeted electricity system management services at the scale and in the timeline needed to accommodate the demands that climate action places on the electricity distribution system.

Activities to progress demand flexibility products leveraging each of those sources are in development. However, in light of the immediate requirements identified on the distribution system, the subject and focus of this consultation process is medium-term flexibility products, based on a defined set of technical and operational characteristics required in the highest priority locations on the distribution network. We therefore intend for ESB Networks' upcoming procurement round to be focused on procuring products to meet this requirement. We are conscious that medium-term storage

may be best placed to deliver this particular requirement but are open to considering applications from any providers that can meet the technical parameters. Further, there will be separate processes that may better suit other technology types.

The proposed procurement of medium-term flexibility products will occur alongside a number of other procurement processes, some ongoing and some in planning, ensuring that, when considered broadly, the provision of demand flexibility remains open to all technologies. Namely, in addition to the product developments identified above (targeting large energy users, businesses adopting electric heat solutions and electric transport installations) the following initiatives are also in progress:

- Beat the Peak Business demand response programme, which is currently open to all commercial electricity customers (directly or via intermediaries, for example aggregators or suppliers) who have a quarter hour meter.
- Beat the Peak / “Is this a good time?” demand response programme which is currently open to all domestic customers’ participation nationwide.

As established in ESB Networks’ Flexibility Multiyear Plan 2024-2028, we are increasing our focus on the development of sector coupling proposals with Irish transport, gas, water and heat operators, continuously adapting and launching new products for domestic participation, and working with market participants on a blueprint for their introduction of a wide range of smart energy services over the coming years.

Finally, we note that the Single Electricity Market (SEM) and system services arrangements also provide routes to market for various sources of flexibility, and EirGrid has recently published a call for evidence on market procurement options for Long Duration Energy Storage (LDES). While this procurement is focussed on different system needs to those of the SEM and TSO, coordination with the Market Operator and TSO will be important to ensure that all of the market mechanisms work together efficiently.

2 GUIDING PRINCIPLES

In developing the proposals, ESB Networks has taken into consideration our obligations as DSO under applicable legislation and licence, including in relation to the procurement of flexibility services. Additionally, ESB Networks has considered a number of overarching principles to guide the market arrangements and procurement approach proposed for medium-term flexibility products. These principles include the following.

The primary purpose of flexibility procured by ESB Networks will be the management of distribution system needs, with carbon abatement delivered as a result of this activity.

The primary operational purpose of flexibility services procured by ESB Networks under the product proposal set out in this document, will be to enable the active management of congestion and energy flows on the distribution network. This is needed to improve outcomes for distribution connected customers and meet their growing needs arising of climate and energy policies. We note that these proposals will support the carbon emission abatement envisioned in CAP23 targets, which provided one of the over-arching motivations for the procurement of demand flexibility services by 2025.

As set out in the previous chapter, we are facing unprecedented demand and renewables growth. The development of new infrastructure requires time to complete and can be completed with least disruption and cost under conditions where demand growth is low to moderate, and varies by location. As such, ESB Networks is developing a suite of smart and infrastructure solutions to reflect the pace and scale of customers' need for network capacity associated with climate action, and the reality that it is occurring simultaneously in most locations.

This suite of solutions (both flexibility and infrastructure) is needed to ensure that material increases in renewable generation can be accommodated at the requisite pace, while focussing on minimising the volumes constrained or curtailed. Medium term flexibility products should enable the DSO to actively manage our networks to reduce the dispatch down of renewables and ensure emissions are minimised wherever possible. In other areas on the distribution network, existing demand levels and the growth in electric heating and transport uptake are likely to result in growing capacity challenges. In this context, medium term flexibility products can provide the location-specific volume of demand flexibility needed on a daily basis so we can make the most of existing capacity and ensure that customer needs are met over this period of rapid and sustained demand growth.

As described further in this document, the proposed operational model for the demand flexibility procured involves daily or near daily shifting of material portions of demand from high demand periods to periods of low demand and/or high renewable generation output, to meet local distribution system needs. Under this operating model, the medium term demand flexibility procured should also deliver substantial benefits to the wider electricity system, including helping to balance supply and demand at a system level, increasing resilience and, critically, carbon abatement.

The efficient operation of flexible assets across all markets should be incentivised to minimise the total cost to energy customers.

Some flexible assets may have the technical ability to deliver in multiple markets, assuming they are enabled to do so by market rules. For example, assets may be able to deliver demand flexibility services when needed on the distribution network and, when not needed at the distribution level, may undertake price arbitrage in the wholesale market and/or provide balancing / ancillary services to the transmission system operator.

Supporting the participation of flexible assets in multiple markets, with sufficient safeguards in place to protect against negative consequences on the distribution network or wider system stability, can ensure that these assets operate as efficiently as possible. In addition, allowing the asset to "stack" revenues across multiple markets (capacity, wholesale and ancillary services markets), can help reduce the cost of procuring demand flexibility services for network customers. Further, the total capacity required to deliver across all markets should be reduced, if the same capacity can meet multiple market needs. This should result in lower overall costs to the energy customer.

Assets contracted to deliver demand flexibility services to ESB Networks should therefore be incentivised through market arrangements to participate in other energy, capacity or demand flexibility services markets, where feasible, to the benefit of the energy customer.

Insofar as possible, the procurement of demand flexibility should lead to reductions in system wide carbon emissions.

The demand flexibility procured should support the CAP23 targets for emissions reductions. ESB Networks has therefore been asked by the CRU to ensure, insofar as possible, that the procurement of distribution connected demand flexibility leads to reductions in carbon emissions, thus ensuring that the procurement remains consistent with national climate policies and emissions reductions targets. The purpose and operational profile of the demand flexibility product proposed, as described above, involves flexibility being dispatched to reduce demand at a location under high demand conditions, and shift demand at a location to times of low demand and/or high renewables output. As such, material emissions abatement is anticipated as a result of its operation, provided the parties delivering the demand flexibility do so without generating material additional emissions. This has been established and tested based on system and market modelling applying industry standard assumptions where relevant. As such, further direction may be required from the CRU requiring that the flexibility procured by ESB Networks adhere to an emission limit that ensures preference for low-carbon demand flexibility sources.

Procurement and contracting of demand flexibility should not result in undue risks or costs

to the electricity customer.

To the extent that payments to demand flexibility contracted by ESB Networks will be recovered from the distribution network customer, it is important that these costs are shown to be net beneficial, contributing to the efficient operation of the electricity system and broader decarbonisation targets. Further, it is critical that contracts for demand flexibility ensure an appropriate balance of risks between providers of demand flexibility and DUoS customers who, in many cases, may be providing them with a route to market.

Question(s)

Q1. What are stakeholder's views regarding allowing and incentivising the multi-market participation (or revenue stacking) of flexible assets?

How would the allowance of multi-market participation impact the business case of flexible assets? What other barriers to multi-market participation/revenue stacking for flexible assets may still exist, even if allowed by ESB Networks' market arrangements? Does the allowance of multi-market participation introduce delivery risks for distribution level markets for demand flexibility that should be considered?

Q2. What are stakeholders' views regarding the focus on ensuring that procurement of demand flexibility does lead to reductions in system wide carbon emissions?

Q3. What are stakeholders' views on the suite of guiding principles outlined above?

Are there additional guiding principles that should be considered? Are there guiding principles that should be removed?

3 DISTRIBUTION CONNECTED PROPOSITION FOR DEMAND FLEXIBILITY

In this section, we outline the specific distribution connected proposition for demand flexibility, which is under consideration at this time, including:

- the expected use cases for demand flexibility;
- defining the service requirements for demand flexibility;
- the volume of demand flexibility required;
- a preliminary view of the locations where demand flexibility will be required; and
- the payment and scheduling approach.

3.1 USE CASES FOR DEMAND FLEXIBILITY

As outlined in our guiding principles, ESB Networks' proposal as set out in this document is to procure flexibility to support us in actively managing customers' needs for distribution network capacity. We have identified that demand flexibility could be used to manage the distribution network in a number of locations where alternative solutions are needed to ensure that the needs of current and expected future connections are met.

Specifically, in relation to demand, the electrification of heat, private and public transport infrastructure, new housing developments, economic growth and digitalisation are driving demand increases on already congested areas of the network, (particularly in Dublin and along the east coast). In order to meet this demand, ESB Networks is developing a suite of tools including traditional measures such as the development of network infrastructure and non-traditional tools such as flexibility.

To support the active management of the distribution network, ESB Networks therefore require a medium term flexibility product that can:

- increase (shift) demand close to existing renewable generation, reducing local network constraints and enabling this generation to flow (i.e., reducing constraints); and
- increase injections into the network (or reduce demand) in congested areas at peak times, to help meet existing customer demand and increasing ESB Networks' ability to connect additional load.

In the context of sustained climate and energy policies driving the continued growth of renewable generation, and the electrification of heat and transport, as well as sustained needs for increased housing and economic activity in Ireland, these needs are expected to endure and grow consistently

over the coming decade. Given the congestion levels in question, ESB Networks has identified a need for high availability, high frequency of dispatch demand flexibility products in locations where the demand or generation conditions requiring dispatch may arise on a daily or near daily basis over successive months of the year.

Because the demand flexibility product is needed to manage varying needs of the local distribution network, the capacity and duration of demand flexibility required to meet these needs are location specific. Based on the specific use cases / needs emerging from the locational analysis we have undertaken to date – discussed further in Section 3.2 – the flexibility product will be needed for several consecutive hours per day for consecutive days, with high reliability, over periods of months throughout the year. Consequently, medium term flexibility products (such as might be provided by multi hour storage) will be needed to meet the system requirements in the locations identified. This procurement process is therefore targeted at medium term demand flexibility providers.

The specific requirements of the DSO for medium term demand flexibility, in particular the need for the demand flexibility procured to be delivered consistently, at or near the full contracted volume and duration, on a daily basis throughout extended periods of the year each year, may mean that storage technologies are best placed to meet the locational needs. However, the DSO is open to considering applications from all technologies that can meet the DSO requirements. In addition, as highlighted above, there will be multiple other processes to procure the DSO's full needs for demand flexibility services across the full range of products/providers.

3.2 DEFINING THE SERVICE REQUIREMENTS FOR DEMAND FLEXIBILITY

As noted above, ESB Networks has engaged with industry, the TSO and the CRU in defining the service requirements for demand flexibility.

In some cases, there may be multiple technologies capable of meeting the demand flexibility needed in a given location. Therefore, rather than limiting our procurement processes to specific technologies, for each locational need, ESB Networks will identify the technical and operational characteristics of the flexibility product required to alleviate the network congestion or constraint. All technologies / providers capable of delivering in line with these requirements will be eligible to tender, promoting competition and efficient market outcomes.

The table below outlines the expected characteristics that will be specified in each invitation to tender.

Table 1 Characteristics of demand flexibility to be defined in each tender

Required service characteristics	Description
Location	Demand flexibility will need to be located at specific points on the network if it is to facilitate local network constraint management. A preliminary shortlist of locations where ESB Networks is considering the procurement of demand flexibility will be published early in 2024 as an addendum to this consultation. We will communicate a further refined site list to potential demand flexibility providers prior to the procurement process to support the development of location specific bids that meet network requirements.
Volume, duration and direction of change	For each location, or set of locations, we will outline the total volume, duration and direction of change (e.g., a demand or generation increase or decrease) required to meet network needs, along with other operational parameters identified as relevant, for example indicative annual run hours.
Energisation date	To ensure that there is no undue discrimination between demand flexibility providers at different stages of development, a required energisation date for flexible assets will be set, rather than require tenderers to have certain stages of the development process to be completed. Given national demand flexibility targets, as outlined in the CAP23, the CRU will direct ESB Networks on the energisation date required. It is proposed that this would be within approximately 24 months (for 38kV connected projects) – 30 months (for 110kV connected projects) of concluding contracts with successful tenderers (subject to ESB Networks' provision of a connection in the requisite timeline).
Carbon emissions limits	In line with the principles above, it is critical that demand flexibility procured will, to the utmost extent possible, lead to a reduction in the carbon intensity of the system. The CRU may therefore instruct ESB Networks to consider a CO2 emissions limit per kWh of demand flexibility (averaged over an appropriate period) as part of the tender criteria. We anticipate that this limit would be more stringent than the one implemented in capacity remuneration mechanisms[7] while allowing for average

[7] OPINION No 22/2019 OF THE EUROPEAN UNION AGENCY FOR THE COOPERATION OF ENERGY REGULATORS. 17 December 2019. Available at: https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER%20Opinion%2022-2019%20on%20the%20calculation%20values%20of%20CO2%20emission%20limits.pdf

Required service characteristics	Description
	emissions associated with technologies' reasonable charging and discharging needs to meet contract obligations on an annual basis.

We recognise that potential providers of demand flexibility will need reasonable certainty around their ability to secure a network connection to ensure they can meet the locational and energisation date requirements.

There is a need to facilitate the procurement and use the flexible services secured in time to deliver on both local system needs and 2025 targets. Furthermore, the use of demand flexibility to manage distribution network constraints is expected to enable the faster connection of ECP candidates currently waiting for connection. As such, we anticipate that CRU will direct ESB Networks to ensure that projects which are successful in this competition will receive a connection offer which meets the needs of their contract for demand flexibility and facilitates the energisation date determined by the CRU. This offer will involve only shallow connection works and a flexible (non-firm) MIC and MEC, reflecting the technical parameters of their contract for demand flexibility.

Cognisant that these connections are needed to facilitate further connections within the ECP process, but may be required on an expedited basis, it is not yet known whether they will be processed within or in parallel with the ECP process initially. We understand that this will be considered further by the CRU, including with reference to the upcoming ECP consultation.

Question(s)

Q4. What are stakeholders' views regarding how services for demand flexibility will be defined?

Q5. What do stakeholders consider is a feasible required energisation date?

What is the minimum time required for developers between contract completion and energisation?

Q6. What are stakeholders' views on the carbon emissions limit the CRU should set to ensure that the procurement of demand flexibility results in a reduction in the carbon intensity of the system?

Q7. What is the minimum length of time before procurement that potential providers of demand flexibility need to receive a final list of network locations where ESB Networks' will seek to procure demand flexibility?

3.3 PROCUREMENT LOCATIONS: A PRELIMINARY VIEW

ESB Networks has undertaken a significant programme of work examining projected capacity constraints on the network. This work has identified locations on the network where demand flexibility of medium term may be a valuable tool for distribution network management.

This shortlisting process used to identify the initial list included:

- considering a number of scenarios for forecasting demand and connections to identify locations with significant capacity shortfall by 2030.
- removing locations for which substantial additional high voltage network infrastructure and reinforcement is feasible in the short- to medium-term; and
- where applicable, ensuring sufficient capacity at the location for flexibility assets to connect and operate in a manner that enables local system needs for demand flexibility to be delivered.

Locations which do not meet the final criterion above may remain on ESB Networks' list of locations to procure demand flexibility, with the view that alternative technologies may be better placed to meet the locations' needs in the future. ESB Networks will publish an initial list of locations early in 2024. ESB Networks will also continue to refine the locations on this list, in order to select locations for each round of tendering:

- that will maximise the value of demand flexibility in initial phases of demand flexibility procurement; and
- where there are unlikely to be network or environmental factors which would delay the development or connection of new demand flexibility assets.

The volumes of the product sourced and contracts issued will depend on it being demonstrated that the requisite volumes of technically acceptable solutions can be sourced efficiently. However, indicatively it is anticipated that of the order of 100 MW would be sourced in the first procurement round, with cumulative volumes across the first and subsequent rounds potentially up to 500 MW.

3.4 PAYMENT AND SCHEDULING APPROACH

As outlined above, this procurement process is intended to procure the services of medium-term flexibility services that may be best placed to meet ESB Networks local network requirements.

We are cognisant that there may currently be challenges to the development and operation of flexible assets, such as ability to submit negative physical notifications in the balancing market, and the relationship between development lead times and the delivery timetables required for capacity market auctions. So long as there remain constraints to stacking revenues from other markets, contracts put in place with ESB Networks as part of this procurement may be the main source of revenue considered by lenders when the service providers are seeking to secure financing.

Notwithstanding this, service providers should be able and incentivised to generate revenue in other markets which can be offset against the cost paid by the DUoS customer under the contracts put in place by the DSO. To the extent that any participating service provider requires a connection to the distribution system, it will be necessary to apply certain operating constraints on any projects developed, to ensure that their connection can be facilitated without deep re-enforcement works. The operating limits on such service providers may prevent them from accessing certain ancillary services, and may impose some limits, but should not prevent them accessing the energy or capacity markets. A TSO-DSO operating model is currently being developed, and further work through this operating model will be needed to further determine these potential limits.

The payment and scheduling approach for this round of procurement has therefore been designed in collaboration with the CRU with the clear intention of providing viable contracts for the flexibility service needed to meet distribution system needs, while protecting energy customers from overpaying for these services. This has led us to propose:

- a floor and share payment structure.
- availability payments (rather than utilisation payments) with penalties for non-delivery; and

- facilitation of revenue stacking (when feasible).

A fixed availability payment (before penalties and revenue sharing) is proposed as the most economic construct from the distribution customer perspective, cognisant of the technical need arising. The contracted service providers will be required to deliver as per a schedule provided by the DSO under the hours where congestion management services are required. While it is difficult to forecast the run hours and frequency of dispatch several years out, at a high level, in most contracted locations the service provider will be required to:

- deliver demand reduction or inject power at or near their full contracted capacity for a minimum of 4 hours each day over peak demand hours, on the majority of business days over 3-6 months of the year; and

- to the extent necessary, recover their underlying demand (for example by charging or completing deferred activities) daily at any rate which can be physically accommodated on the network, at any time outside of the period when delivery has been scheduled.

For future procurement rounds alternative payment structures (e.g., availability and utilisation payments, with no sharing mechanism) for demand flexibility may be considered, to the extent that there is evidence that they are likely to secure the services required by ESB Networks at the relevant point in time.

The following sub-sections detail our thinking in relation to each of the above payment and scheduling elements.

3.4.1 Floor and share payment structure.

In recent years, there has been considerable discussion on the optimal structure of payment schemes for flexible assets.[8] Traditional capacity mechanisms or market mechanisms like contracts for difference (CfD) schemes put in place to support low carbon and renewable generation may not fully reflect the operational characteristics and/or benefits that these assets can offer. For example, capacity mechanisms do not fully provide for benefits that flexible assets can offer in addition to resource adequacy in areas such as network constraint management, frequency and voltage regulation, system stability, and black start. Similarly, CfDs used to support renewable generators are

[8] For example, the Department for Energy Security and Net Zero's (DESNZ) 2022 Review of Electricity Market Arrangements (REMA) consultation identified and sought views on a number of options for payment schemes to improve flexibility investment signals for flexibility including: i) a revenue cap and floor; ii) introducing flexible auctions within the Capacity Market; iii) introducing multipliers to the clearing price within the Capacity Market; and iv) a supplier obligation. Following the receipt of consultation responses, DESNZ indicated that it will "continue developing and assessing proposals for reforming the CM and introducing a cap and floor mechanism for flexibility." (See the REMA 'Summary of responses to consultation' published by DESNZ in March 2023.)

typically intended to incentivise producing as much as possible and are not as well suited to flexible technologies that bring value by operating at specific times in response to market conditions and system requirements.

Out of consideration of these limitations, policymakers in some jurisdictions (e.g., Great Britain) are being urged to consider the implementation of specific policies for flexible assets (particularly long duration storage), such as cap-and-floor schemes similar to those introduced for electricity interconnectors.[9] Such arrangements can help incentivize the development of demand flexibility by offering revenue certainty through a guaranteed floor typically covering the cost of financing the assets, while ensuring that any revenues above an agreed cap (providing for an appropriate return on investment for the asset developer) are handed back to the consumers. However, there is no easy way to determine where the cap should be set at and the incentive to operate/trade the assets optimally may exist only up to the level of the cap.

One way this issue can be addressed is that, instead of deciding on a fixed cap, a sharing mechanism can be implemented, through which a fixed proportion of revenues earned above the floor are shared with the consumer. This "floor-and-share" arrangement can help strike a balance between providing revenue certainty to providers of demand flexibility while maximising consumer saving. Such arrangements have been considered in certain jurisdictions and have emerged in response to recent consultation on demand flexibility in Ireland.

One example of a similar mechanism being implemented come from the UK, where the Department for Energy Security and Net Zero (DESNZ) has suggested a floor and share style mechanism with the Dispatchable Power Agreement (DPA) contract for Carbon Capture and Storage support.[10] Given the small number of counterparties to DPA contracts, it is expected that details of the sharing mechanism will be established through bespoke negotiations, on a contract-by-contract basis.

Existing constraints on revenue stacking in Ireland may mean that, especially for any new assets, the floor level may need to be meaningfully above where it would be if there were no constraints to revenue stacking. As constraints to stack revenues from other market arrangements (e.g., wholesale, capacity, balancing) are removed, the sharing mechanism can provide for a portion of the provider's

[9] "Most respondents to our Call for Evidence identified a Cap and Floor type mechanism as the most suitable for long duration energy storage. We recognise that a Cap and Floor mechanism may be suitable in principle, but detailed design work is needed to assess the benefits and interactions of such a scheme with the energy system". BEIS. Facilitating the deployment of large-scale and long duration electricity storage. August 2022.

[10] DESNZ, Consultation on 'Carbon capture, usage and storage (CCUS): Dispatchable Power Agreement business model', (2022). Under the mechanism: the 'Availability Payment' stream acts as a de-facto floor, allowing projects to secure financing with a secure revenue stream while including incentives for high availability of generation and carbon capture; while the 'Gainshare Provision' then provides a mechanism by which 'excess' profit is shared with the Government. The excess is defined in profit rather than revenue terms to account for commodity risk which CCS generators will be exposed to.

net revenues[11] to be returned back to the consumer. This ensures that the costs to energy customers are minimised as a result of the asset's future efficient operation in other markets.

To inform an appropriate level of sharing factor, we will be undertaking in-depth technoeconomic modelling of operating the flexible assets in the SEM under varying levels and duration of constraints to revenue stacking. The results of this modelling, in conjunction with relevant regulatory precedent and other available evidence, will be used to determine the appropriate sharing factor.

We anticipate that flexibility providers will be asked to include a floor price as part of their bids. ESB Networks will be undertaking analysis to identify a maximum floor reserve price for each location and will only proceed with locations where the floor price offered is below the reserve price. We will aim to ensure that the combination of floor price and sharing factor provide strong incentives to providers to make optimal use of the assets across the markets they operate in, achieving the most efficient outcomes for electricity and DUoS customers.

Question(s)

Q8. What are stakeholders' views on the proposed floor and share revenue model?

Does this model strike an appropriate balance between the needs of the energy customer and those of the provider of demand flexibility? Does this approach create risks which the CRU and ESB Networks should consider?

Q9. What are stakeholders' views on an appropriate level for the sharing factor?

Please provide quantitative evidence, where available, to support any proposed sharing factor values.

3.4.2 Availability-based payments

Contracts for demand flexibility can include payments for availability (a guaranteed level of revenue per MW available to provide a service, regardless of how frequently the demand flexibility is used), utilisation (a price per MWh of delivered demand flexibility), or both. In GB demand flexibility markets, for example, we note that availability and/or utilisation payments are used depending on the product in question.

[11] The sharing factor would apply to a flexible service provider's net revenues. For example, for a storage asset, this means that the sharing factor would apply to the wholesale market revenue earned from discharging less the wholesale price paid to charge the asset.

ESB Networks has a requirement for medium term services and accordingly needs flexibility service providers to commit to the consistent provision of services over an extended period of time. ESB Networks considers that potential service providers will likely require a degree of revenue certainty to commit to provide this type of service over the medium term. Accordingly, we consider that it will be most efficient for ESB Networks to provide all revenue through availability payments. This is because:

- Any split with utilisation payments would likely include a risk premium for developers or asset operators due to the uncertainty associated with how often the service for demand flexibility will be used, likely resulting in increased prices being bid for the proposed contracts for demand flexibility. In the GB market, utilisation payments have typically required the contacting system operator providing a minimum number of guaranteed utilisation hours which is challenging for distribution network operators to estimate given trade-off between providing revenue certainty to providers of demand flexibility and reducing costs for the energy customer.

- Preliminary modelling results indicate that the running profile of medium-term flexible assets is likely to result in the assets needing to charge (or increase demand) at times of low prices and high renewables generation and discharge (or decrease demand) at peak times when prices are generally higher. As such, the required running profile provides a natural opportunity for flexible assets to benefit from price arbitrage between charge and discharge periods. We therefore do not consider that additional utilisation revenues are required to ensure that a flexibility provider's wholesale electricity costs are covered.

To ensure that demand flexibility is consistently delivered when required by ESB Networks – in the absence of utilisation payments to incentivise this – contracts will include penalties for a failure to provide availability or delivery as required under the contract. These penalties will be set at an appropriate level reflecting the cost to the distribution system customer of non-delivery and will be charged where non-delivery arises as a result of the provider's actions. As part of the commitment to facilitating revenue stacking, we propose that penalties will not apply where demand flexibility is not available to ESB Networks as a result of deviations from the economic merit order for system reasons.

We are considering whether it would be sensible to provide for inflation indexation. Not doing so can mean that the payment for demand flexibility agreed at the time of the tender does not represent the real price achieved by the provider at the time of payment. Indexing the payment for demand flexibility to an appropriate market index (e.g., HICP) can offer a solution; otherwise, it is likely that providers will reflect the risk of inflation in their bids. On the other hand, capital costs are likely to make up a significant proportion of an asset's total costs and it is not clear whether these costs, which are incurred in the early years of a project and so less subject to inflationary pressure, should be inflation linked.

Question(s)

Q10. What are stakeholders' views on the proposal for revenues to come in the form of availability payments, rather than utilisation payments?

Is this approach also an appropriate enduring market solution or are there benefits in moving to an availability and utilisation payment approach in the future? If the approach should be reconsidered in future, what market indicators should be used to determine when a review of payment structure is necessary?

Q11. What are stakeholders' views on the proposed approach to penalties for non-delivery?

Does the proposed approach to penalties create any barriers to revenue stacking (outside of times when not required by ESB Networks) that should be considered?

Q12. What are stakeholder's views on the indexation of payments for demand flexibility?

3.4.3 Scheduling approach

At a high level, the proposed scheduling approach will ensure that flexible assets are able to participate in other markets during any periods where services are not required by ESB Networks. Noting that their availability to participate may be limited by any operating restrictions ESB Networks places on the contracted demand flexibility providers to facilitate timely shallow connection.

ESB Networks will provide advance notice to providers of demand flexibility outlining when they will need to deliver. This will likely include two stages, for example:

- an indicative schedule may be shared with providers a week in advance, outlining the times when they will need to deliver:
- a final schedule may be shared with providers 24 hours in advance, indicating whether they will be needed during the previously shared windows.

Where the provider of demand flexibility is a participant in the wholesale electricity markets, they will need to ensure that this schedule is reflected in their activity across the other markets and scheduling and dispatch arrangements. More details on how this will be enabled are being developed through the TSO-DSO Operating Model work being carried out in collaboration between ESB Networks and EirGrid and will be consulted on separately.

Providers of demand flexibility will be free to participate in other markets during all periods not covered in the ESB Networks schedule[12] (subject to any operating restrictions applied by ESB Networks on a day to day basis, reflecting the capacity available to the participant subject to their flexible connection). However, any non-delivery during a specified delivery window (e.g. as a result of participating in another market despite being included on the ESB Networks' schedule) will be subject to penalty, as outlined above.

Question(s)

Q13. What are stakeholders' views on the proposed scheduling approach?

3.5 CONTRACT DURATION

ESB Networks has identified a clear requirement for medium term flexibility services over a period of up to 15 years. ESB Networks has considered whether it would make sense to procure services for a shorter period and re-tender during this time period. However, given the locational nature of the service, ESB Networks has a concern that the incumbent would then have a captive market and there may be little or no competitive tension for any re-tendering process. Accordingly, in the interests of economic efficiency ultimately for the benefit of the DUoS customer, ESB Networks proposes to tender for longer term contracts.

Question(s)

Q14. What are stakeholders' views on the appropriate contract length?

What factors which should be considered when determining the appropriate contract length? Does a longer-term contract strike an appropriate balance between the risks placed on the flexible assets and energy customers?

[12] The details of the schedule will vary by location, in line with local network needs. However, preliminary modelling indicates that flexibility requirements will primarily fall in the winter months, with flexible assets largely free to participate in other markets for the other c. 6 months of the year when the distribution network need is limited. Further, during the periods when network needs are high, modelling indicates that the required running profile of the flexible asset is broadly aligned with market signals (e.g., charging during periods of lower prices (when RES generation is high and/or demand is low) and discharging during periods of higher prices (peak demand or low RES periods).

4 PROCUREMENT APPROACH

In this section, we detail the proposed:

- approach to use a multi-criteria tender, rather than a price-based auction.
- assessment criteria to be used to evaluate tenders; and
- stages in the procurement process.

4.1 MULTI-CRITERIA TENDER VERSUS PRICE-BASED AUCTION.

When considering the assessment criteria that should be used to select the tenders that will be contracted, at a high level, two potential options were identified:

- a price-based auction, whereby the winning tenderers are selected on the basis of price only, subject to meeting the auction's eligibility criteria; or
- a multi-criteria tender, or 'most economically advantageous tender' approach, whereby a broader set of defined criteria (including price and other factors) is used to determine the winning tenderers.

Under a price-based auction, ESB Networks would need to be able to define a set of pass/fail qualification criteria which would include all service characteristics and developer factors that are considered to be important. Subject to meeting these pass/fail criteria, the winning tenders would be selected from all eligible bids on the basis of price only.

Because only the price can be considered after auction qualification, the development of pass/fail criteria which are sufficiently stringent and comprehensive to ensure that qualified providers are able to deliver would be challenging. On one hand, criteria set too restrictively may unnecessarily reduce competition in a market that is still in its early stages of development, potentially leading to increases in the prices paid for demand flexibility or in insufficient volumes submitting tenders. On the other hand, criteria set too loosely may result in contracts awarded to providers that may face difficulty in delivering to contracted timelines, with negative implications on network management and decarbonisation targets.

The other approach is to implement a /most economically advantageous tender process. This would allow for a more comprehensive assessment of tenders for demand flexibility where an exhaustive list of pass/fail criteria cannot be easily defined. For example, it may be challenging to define a pass/fail criterion for deliverability, while under a multi-criteria assessment a view of deliverability can be obtained by considering a number of factors such as a developer's history of delivery and demonstration of a ready supply chain.

While the market is developing and liquidity may be low, we consider that the most economically advantageous tender option may provide a better balance between maximising competition, providing clarity for tenderers on the assessment criteria to be used, and ensuring that winning providers are capable of delivery to committed energisation dates. Once liquidity in the market has developed, such that price-based auctions (with qualification criteria) would be expected to yield competitive, deliverable outcomes, we may consider whether a transition to auction based procurement is appropriate.

Question(s)

Q15. What are stakeholders' views on the relative merits of a most economically advantageous tender process versus an auction process?

Q16. What do stakeholders consider are the metrics and levels of same that would indicate sufficient liquidity to enable a move to a price-based auction?

4.2 ASSESSMENT CRITERIA

We have developed a proposed set of assessment criteria to balance three key aims:

- **value for money**.
- **deliverability** by required energisation date; and
- **operability** for ESB Networks.

The table below outlines the individual criteria that may be considered under these three objectives and a high-level approach to assessment.

Table 2 Proposed assessment criteria

Objective	Criteria	Assessment
Value for money	**cost per MW of demand flexibility:** tenderers will be requested to submit all price/quantity pairs that they would be willing to accept, subject to the pre-determined sharing factor applied to revenues from other markets.	ESB Networks will seek to procure sufficient demand flexibility to meet its requirements at least cost, subject to ensuring that the procured demand flexibility is both operable and deliverable. As noted earlier, ESB Networks will develop reserve prices for each site and will only proceed where the tender is below the reserve price. When deciding between procuring flexibility at different

Objective	Criteria	Assessment
		locations, discussed further in Section 4.3 below, ESB Networks will consider the relative value for money at each location (i.e., by considering both the cost of the flexibility and the value it will bring to the network in different locations).
Operability	**Volume and duration of services for demand flexibility covered by the tender**: providers may submit a single tender comprising multiple assets which it has aggregated to contribute to ESB Networks' duration and volume requirements. The tenderer will need to indicate the duration of demand flexibility included in its tender.	ESB Networks' scoring criteria will award higher points to providers that best match the technical needs of a particular site.
Deliverability		
	Site acquisition: tenderers will be requested to submit evidence that a site has been acquired.	This criterion would be a pass/fail requirement.
	Planning permission: tenderers will be requested to submit evidence that the project is sufficiently advanced that a planning application could be lodged within a specified number of months of their tender being submitted.	This criterion would be a pass/fail requirement.
	Required distribution network reinforcement	Projects which can deliver a greater portion of the volume required with less network infrastructure required, will be awarded higher points under the scoring criteria than projects requiring a higher volume of reinforcement. Examples of projects which would involve higher levels of infrastructure activities include where a bid comprises multiple smaller sites each requiring connection, or individual bids of smaller volumes which would have to be coupled with other projects (each

Objective	Criteria	Assessment
		needing an additional connection) to meet the defined network need.
	Evidence of supply chain readiness: tenderers will be requested to submit evidence of supply chain robustness and readiness.	Given the need to prioritise speed of delivery and avoid that any contracted assets fail to deliver to agreed energisation dates, ESB Networks' scoring criteria will award higher points to providers that can provide evidence of supply chain robustness and readiness.
	Evidence of potential funding: tenderers will be requested to submit evidence of engagement with or interest from potential financiers, noting that financing is not required to be in place as it is expected that ESB Networks' contracts will contribute significantly to the bankability of new projects. For example, this may be in the form of a letter of interest from a bank.	Given the need to prioritise speed of delivery and avoid that any contracted assets fail to deliver to agreed energisation dates, ESB Networks will look for evidence that project developers (for new projects) have a reasonable likelihood of being able to secure financing, as the project is less likely to be delayed for financing reasons. ESB Networks' scoring criteria will award higher points to providers that can provide strong evidence of funding

Question(s)

Q17. What are stakeholders' views on the proposed aims of the assessment criteria (value for money, deliverability and operability)?

Are these aims sufficiently comprehensive? Are there other high level aims that the CRU and ESB Networks should consider?

Q18. What are stakeholders' views on the proposed assessment criteria outlined in the table above?

Are there other criteria which should be considered when evaluating the three key aims? Are the assessment criteria sufficiently clear to stakeholders? Do stakeholders consider that they will be in a position to provide evidence relating to the outlined criteria when responding to the procurement process?

Q19. What evidence of a tenderer's ability to deliver to the required energisation date should be required, taking into account the need to balance avoiding speculative tenders that may not deliver while not ruling out early-stage projects that are capable of delivery but require more time?

Q20. What are stakeholders' views on how the aims and assessment criteria should be balanced against one another when ESB Networks are selecting the winning tenders?

4.3 LOCATIONAL BATCHING

As outlined above the identified needs for demand flexibility are location-specific, which means that procurement of demand flexibility and contracting must also be location-specific. It is likely that demand flexibility will be procured through a number of procurement rounds, allowing for the procurement approach and contracts to be refined based on market responses or other information arising.

As the market is developing, there is a risk of low competition on a location-by-location basis. This could result in a higher cost of demand flexibility to ESB Networks, and ultimately the distribution customer, than would be the case if there were numerous providers competing to provide demand flexibility at each location. As part of the procurement approach, we are assessing whether competition across locations could be introduced. At a high-level, this would involve ESB Networks publishing a list of multiple locations where demand flexibility is required, inviting bids to be submitted

for these locations while noting that demand flexibility would be procured only at the subset of locations with the most economically advantageous bids.

We consider that the introduction of competition across locations could result in more competitive bids from potential providers which might otherwise have market power if bids were assessed only "within location" rather than "across location".

Locations not selected in a given procurement round could be included in a future procurement batch, alongside additional locations not included in the first round. Through repeated tendering, these locations may become more competitive over time (e.g., if providers have time to develop new projects in these areas) or it may become clear over time that they are not suitable candidates for demand flexibility, given the price offered to provide a service relative to its assessed value..

Question(s)

Q21. What are stakeholders' views on the proposed locational batching of flexibility procurement?

Is this likely to improve competitive outcomes?

Q22. Do stakeholders consider there are other approaches that can be used to promote competitive outcomes as the market is developing?

4.4 STAGES IN THE PROCUREMENT PROCESS

As outlined above, we suggest that there may be multiple procurement processes, each resulting in the procurement of demand flexibility for a small number of locations. There are three stages to the procurement process, summarised in Figure 2 and detailed below.

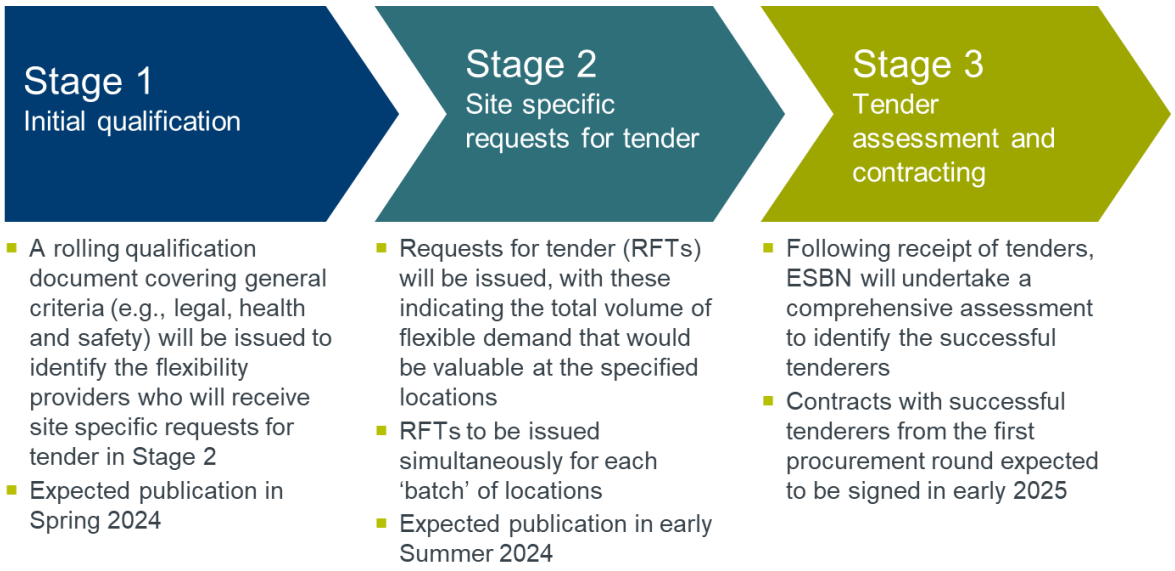

Figure 4: Stages in procurement process for demand flexibility product

Source: ESB Networks

As a first stage in the procurement process, ESB Networks will issue an invitation for interested service providers to apply to be appointed to a qualification system that will be established. The view is that this would be an on-going qualification system that allows providers, once qualified, to receive the batches of location specific invitations to tender that would be issued in the future. The aim of this qualification system establishment is to assess general selection criteria, such as legal, health and safety compliance. An important element of assessment at this stage of the process will be track-record of delivery. Tenderers will be requested to submit evidence of previous similar developments, as being able to demonstrate a proven track record of delivery is critically important given the need to prioritise speed of delivery and avoid contracted assets failing to deliver to agreed energisation dates. In addition, this qualification system may be accompanied by a questionnaire that gathers information from providers on their locational preferences to help guide future tenders.

We anticipate that the documentation for this initial qualification system would be published by ESB Networks in spring 2024, pending the outcome of this consultation and subsequent CRU determination.

The second stage in the process will be the issuance of site-specific requests for tender (RFTs) to qualified providers. These tenders are expected to indicate the total volume of demand flexibility that would be valuable at the specified locations. We anticipate that RFTs will be issued to qualified demand flexibility providers by ESB Networks following the completion of the first phase and by early summer 2024.

As the final stage of the procurement process, ESB Networks will undertake a comprehensive tender assessment to select the winning tenderers. Noting, that ESB Networks reserves the right not to select any tender at a location including in the event that bids are above its reserve prices. If ESB Networks decides to proceed with the tender award then it will then enter into contracts with successful bidders.

We anticipate that ESB Networks will have entered contracts with tenders from the first round of procurement by early 2025. Stages two and three will then be repeated for each additional batch of locations, noting that that RFTs for one batch may be issued prior to the final selection of winning bids for the prior batch.

Question(s)

Q23. What are stakeholders' views on the proposed phases in the procurement process?

Q24. What are stakeholder's views on the appropriate timing for each stage?

How long in advance of RFT issuance do stakeholders need to receive the final list of locations where demand flexibility will be procured? How long is needed from the RFT issuing to RFT close?