



NETWORKS

EXPRESSION OF INTEREST FOR FLEXIBLE DEMAND CONNECTIONS

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Introduction – Flexible Demand Connections

ESB Networks plays a critical role in facilitating Ireland's transition towards a net zero future. Our "Networks for Net Zero Strategy" supports the Government's target to reach net zero by 2050, by ensuring that there is a net zero ready electricity network in place by 2040. Our strategy focuses on three key objectives: decarbonising electricity, creating resilient infrastructure, and empowering our customers. Given the scale of ambition and the pace of change required to meet our net zero targets, innovation will play a key role in achieving these objectives. We strive to introduce new ideas, tools, technologies, and processes that not only meet the current needs of our customers but also pave the way for a sustainable and efficient energy future.

Innovative Solutions for Capacity Management

As we move towards a net zero electricity system, demand for electricity is growing and will continue to grow at an unprecedented rate. To meet this demand and in parallel with traditional infrastructure build, ESB Networks is trialling and developing smart solutions to optimise use of existing electricity infrastructure. We anticipate that this will help to reduce overall system costs, support security of supply and deliver a range of benefits for customers and the environment, including early access to capacity on the network. In this context, we are exploring a range of flexibility solutions to shift customer demand away from peak times, or periods when the system is heavily reliant on high carbon electricity sources, to periods where there is more capacity on the system. We are conscious that such flexibility solutions need to be aligned with the needs of customers to be sustainable in the long term.

Using Flexibility to Enable Connections

The use of demand flexibility offers a pragmatic approach to capacity management, allowing customers conditional early access to the network and potentially reducing the need for network reinforcement in the short term. This is now required under EU energy legislation and is in the earliest stages of implementation in other member states.

In the medium term, our objective is to develop local flexibility markets as a complement to network reinforcement. For example, if a customer requires a new connection in a location where there is limited network capacity, a local flexibility market would take place to determine the volume and price at which customers would be prepared to offer flexibility in their locality. In locations where sufficient flexibility is available at an acceptable cost, a new connection could be permitted on the basis that flexibility would provide the requisite capacity. This could be an enduring or a temporary solution, depending on the technical, economic and customer conditions arising. In locations where local flexibility is not available, the customer seeking to connect or increase their maximum import capacity (MIC) could still be provided with a new connection or an MIC increase, subject to them agreeing to provide the flexibility needed to accommodate their connection.

This approach is being implemented in other EU member states and offers a good balance of market-based efficiency, and pragmatism to meet the connecting customer's needs.

In the short term, a simpler form of demand flexibility is proposed in the form of a 'Timed Connection'. In this case, a customer would be allowed use their entire MIC during specific, predetermined hours, but would be required to adhere to a lower MIC at other times.

This Timed Connection arrangement would continue until the full MIC could be granted, following the completion of essential network reinforcement works and/or if it is established that either the connecting customer or other customers in the locality can provide the flexibility on a longer-term basis, more economically than the cost of reinforcement.

Timed Connections offer an interim solution for customers designed to fit their unique demand profiles and will enable them to make efficient use of existing energy infrastructure.

ESB Networks proposes the phased introduction of flexible demand connections i.e.

- 1. Piloting the simplest form of flexible demand connections (i.e. Timed Connections) with eligible customers in 2024 – 2025, to test and inform some of the key principles of future flexibility offerings for customers.**
- 2. Develop more advanced flexibility solutions to enable quicker or more economic connection methods, from 2025 onwards.**

Expression of Interest (EOI):

We are inviting demand customers to express their interest in participating in the development and piloting of flexible demand connections. By engaging with us, customers will:

- 1. Gain insight into the economic/commercial, operational, and strategic impacts of flexible demand connections.**
- 2. Have the opportunity to register their interest and shape the future of energy consumption and distribution in Ireland, by:**
 - Participating in the phase one Timed Connections field pilot in 2024**
 - Participating in design activities to shape the flexible demand connections products for rollout from 2025 onwards**

We encourage all interested parties to consider how these innovative solutions might align with their energy needs and sustainability goals. Together, we can take significant strides towards a more adaptable, efficient, and green energy future.

1. Phase One: Timed Connections

What is a Timed Connection?

ESB Networks is currently exploring innovative ways of managing capacity on the network, including the use of flexible demand. The simplest form of flexible demand is Timed Connections i.e. where a customer agrees to a schedule of when their demand may be higher or lower. A Timed Connection is a connection offered to a customer on condition that they agree to provide timed or scheduled flexibility. Eligible customers will typically have a demand profile that is at its highest during lower demand periods on the electricity network, when there is capacity available, and would therefore be able to access a faster connection. In parallel, ESB Networks would analyse the effectiveness of this and other solutions, and plan and deliver the right long-term solution for that location.

The customer offering timed flexibility would have a specific time window in which they could utilise their full MIC but would be restricted to operate at significantly lower demand at other times. This Timed Connection pilot will contribute to the development of fully flexible demand solutions by providing evidence and insights into the practical implications of flexible solutions and key customer drivers and benefits.



2. Phase Two: Flexible Connections

What is a Flexible Connection?

In the pursuit of operational flexibility and grid efficiency, ESB Networks is introducing flexibility as a solution to enable new connections, MIC increases, manage underlying capacity growth and reduce the carbon intensity of energy consumed. Flexibility can play a key role in supporting the pace and efficiency of connections over the coming years. This is particularly important in the context of Climate Action Policy, which mandates:

- 1. The adoption of electric transport, driving the need to connect commercial, public and domestic charge points, for both private electric vehicles, fleet, and public transport operators.**
- 2. The adoption of electric heat, both in domestic settings and as a low carbon solution for industrial heat applications.**

These objectives create an urgent need for capacity to connect additional loads on the distribution system. As set out in the previous section, a “Timed Connection” is the simplest form of flexibility – a customer agreeing to maintain a schedule for their demand which is based on pre-defined window of time. In the medium term, it is important that flexibility is leveraged to enable connections in a more market-based manner to maximise its potential and minimise the cost. This is because:

- 1. The customer seeking the new or increased MIC may not be able to provide the flexibility required, whereas other customers in the same locality could.**
- 2. Different customers will adopt different measures to provide flexibility, incurring different costs. To secure the most efficient flexibility with the least impact on underlying customer activities in the locality, it will be important to provide any customer in the relevant electrical location with the opportunity to participate.**

To deliver on ESB Network’s longer-term direction, it is proposed that a phased introduction of flexible demand connections will be developed in parallel with the Timed Connections pilot set out above. This process would:

- 1. Define the key regulatory, commercial, and contractual terms of flexibility to enable connections.**
- 2. Define the phased rollout of flexible demand connections, to reflect customer and ESB Network’s readiness.**

3. Register Expression of Interest for Flexible Demand Connections

To register an Expression of Interest please complete the Microsoft form at the bottom of this document.

This form will ask the following:

Section 1: Organisation and contact details

1. What is the name of your organisation?
2. What is the email contact for the person registering an Expression of Interest on behalf of the organisation?
3. In what industry or industries does your organisation operate (e.g. transport, food production, drink production, pharmaceutical, distribution, etc)
4. How many sites does your organisation operate in Ireland?
5. Where is the location of the site proposed for a pilot of flexible or Timed Connections? Include address and EirCode.
6. For flexible connections including Timed Connections, please outline your interest in the pilot and type of demand on your site (e.g. vehicle charging, change of heating system, growth in product, etc)
7. Has your organisation other sites where you are not seeking additional capacity at this time but may be in a position to provide flexibility to enable other customers' connection needs?

Section 2: MIC requirements and future demand profile

1. Are you currently seeking new or increased MIC through your existing application? Could flexible connections including Timed Connections be suitable?
2. For customers with an existing connection, would you be willing to change to a flexible or Timed Connection and under what circumstances? What would be the benefits and drawbacks?
3. Please describe the demand load on your site currently and over the next 3 years, including the potential for adjusting this demand if participating in a pilot of flexible connections including Timed Connections.
4. Please outline any onsite generation at the site proposed and if it can be controlled as part of a flexible connection or Timed Connection. This may form part of phase 2 of the pilot.

Section 3: Pilot and technology

1. Describe any of the technologies or strategies that would be used to manage demand on your site as part of flexible connections including Timed Connections pilot.
2. If successful in receiving a connection on a timed or flexible basis, what is the earliest date that you would be able to utilise the new or increased MIC?

Section 4: Feedback and suggestions

1. Is your organisation willing to share learnings from participating in a flexible or Timed Connection pilot with other customers?

The closing date for the Expression of Interest is Tuesday July 16th, 2024.

[Link to Expression of Interest Microsoft Form](#)





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