ESB NETWORKS

EXPRESSION OF INTEREST FOR LARGE ENERGY USERS BIOMETHANE LIGHTHOUSE

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Introduction

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. In light of this we are looking to launch a lighthouse project, in which we would partner with a customer(s) for a period of time to explore the potential role of alternative renewable sources, specifically biomethane gas, in enabling flexible energy demand on the electricity network. The flexibility sought through this lighthouse project will come from customer's existing installed capacity only. A separate Expression of Interest for Flexible Demand Connections[1] is looking at the potential of flexibility and the delivery of new capacity.

Note for the purpose of this document and the lighthouse project ESB Networks is aligning with the definition of Extra-large Energy Users (XLEUs) and Large Energy Users (LEUs), as outlined in the Commission for Regulation of Utilities' (CRU) National Energy Demand Strategy[2] (NEDs), which defines these customers on the basis of DUoS Groups:

- XLEU as DG10 and Transmission connected
- LEU as DG7 – DG9

It is also important to note that to participate in this lighthouse project the customer can be either an XLEU or LEU but must be distribution connected i.e. they must be within DG10, or DG9-DG7. For details on DUoS Tariff Groups see link here.

1 Expression of Interest for Flexible Demand Connections
2 National Energy Demand Strategy

Context & Background

The National Energy Demand Strategy, specifically Area 2 Demand Flexibility and Responses, focuses on encouraging large energy users and specific sectors to participate in new markets for flexibility and respond to market signals. As part of Area 3 New Demand Connections, the NEDS identifies that mandatory requirements for LEUs will provide significant demand flexibility. ESB Networks supports this view and envisages this customer segment playing a significant role in demand flexibility, through a combination of implicit flexibility, explicit flexibility, and mandatory requirements.

Also referenced in Area 2 is the potential role of biomethane in flexibility, through incentivisation of energy shifting across energy vectors, but that this will need to be explored with all relevant industry stakeholders to determine the actual role it can play in our future energy system. The NEDs specifically references alignment in this space with the Department of Environment, Climate and Communications Biomethane Strategy,[3] which in its subsequent publication acknowledges the potential early adoption of Biomethane by XLEUs and LEUs as a sustainable energy source allowing for operational stability and growth. This is viewed in many countries as complementary when seeking Demand Flexibility on the Electricity System.

Considering this and in line with our multi-year plans, ESB Networks, wishes to establish a lighthouse project as a proof of concept to assess the viability for large scale adoption of biomethane within the XLEU and LEU segment to facilitate flexible demand – with the focus on demand reduction – on the electricity network. Furthermore, learnings from the lighthouse could be used to inform the policy across all types of flexibility including the potential use of biomethane for mandatory flexible connections.

We are actively seeking an XLEU or LEU customer(s) to proactively work with ESB Networks and all relevant industry stakeholders over the next 12-18 months to help shape the future ecosystem where Renewable Gas and Demand Flexibility work together to relieve congestion on the electricity distribution system and achieve carbon reduction directly attributable to the customer's actions.

It is important to note that for this Lighthouse Project, we are seeking to engage with an XLEU or LEU customer who can provide flexibility from the existing installed Maximum Import Capacity (MIC). As part of this project our primary objective will be to leverage flexibility enabled by biomethane to alleviate network congestion, with a secondary objective of carbon reduction. Thus, at periods of network congestion the customer will be requested to switch from the electricity grid to onsite back-up generation fuelled by biomethane. Post event a reconciliation process will be completed periodically to validate flexibility via biomethane. More details on the proposed operation of this Lighthouse are contained in Appendix A of this document.

3 National Biomethane Strategy

Expression of Interest (EOI)

We are inviting large distribution connected demand customers (DUoS groups DG10 or DG7 – DG9) to express their interest in participating in this lighthouse project.

Engaging in this lighthouse project will enable the customer to:

1. **Demonstrate the operational viability of medium duration (several consecutive hours) flexibility enabled by biomethane.**
2. **Work with ESB Networks on the potential incentivisation, financial or otherwise, required to deliver flexibility at scale.**
3. **Identify the ability to reduce capacity and therefore connect new load to the network.**
4. **Inform the future integration of Biomethane use behind the meter with future LEU Connection policies.**
5. **Provide vital commercial input into the Biomethane ecosystem for the purpose of establishing future contract arrangements and any other market considerations in order to establish a viable indigenous Biomethane supply chain for the LEU customer.**
6. **Input along with all industry Stakeholders on how carbon abatement can be accurately accredited to customers adjusting in their energy consumption habits.**

Eligibility to participate

The lighthouse project is being operated with a view to understanding how best to incorporate other renewable fuel sources into the management of capacity now and into the future for the largest of energy users on the Electricity System. Learnings from this project will help shape and unlock capacity which can be used to facilitate the electrification of heat and transport and the connection of new customers – domestic, commercial and industrial – in an optimum manner.

Potential customers should be:

1. **Able to actively manage the energy needs of the site in question across their Electricity and Gas connection points.**
2. **Available to reduce electricity demand by switching to onsite biomethane fuelled back-up generation when requested by ESB Networks.**
3. **Willing to shift existing load requirements from current electricity connection to onsite generation fuelled by biomethane.**
4. **Connected at Distribution Level in an area that would benefit from flexibility (ESB Networks will study all applications and advise applicants on this point).**

Register Expression of Interest

To register an Expression of Interest please complete the form online at the link below.

This form will ask the following:

Organisation 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 this lighthouse project? Include address, EirCode and MPRN.**
6. **What is your current MIC and what percentage of this MIC could be made available for Flexibility under this lighthouse project?**
7. **Are you currently connected and using the Gas Network for operations on the site?**
8. **Is your organisation willing to share learnings from participating in this lighthouse project with other customers?**

The closing date for the Expression of Interest is December 13th 2024.

Please click here to proceed with the Expression of Interest

Appendix A: Proposed Lighthouse High Level Design

ESB Networks propose to enter into a contract for flexibility with the successful applicant. Within the contract the run hours, scheduling and dispatch scenarios and reconciliation process will be bi-laterally agreed. The contracted terms will primarily reflect the Distribution Networks requirement for flexibility. Other factors which align with this such as carbon abatement will also be considered. Figure 1 below outlines the potential operation of the successful Lighthouse customer site.

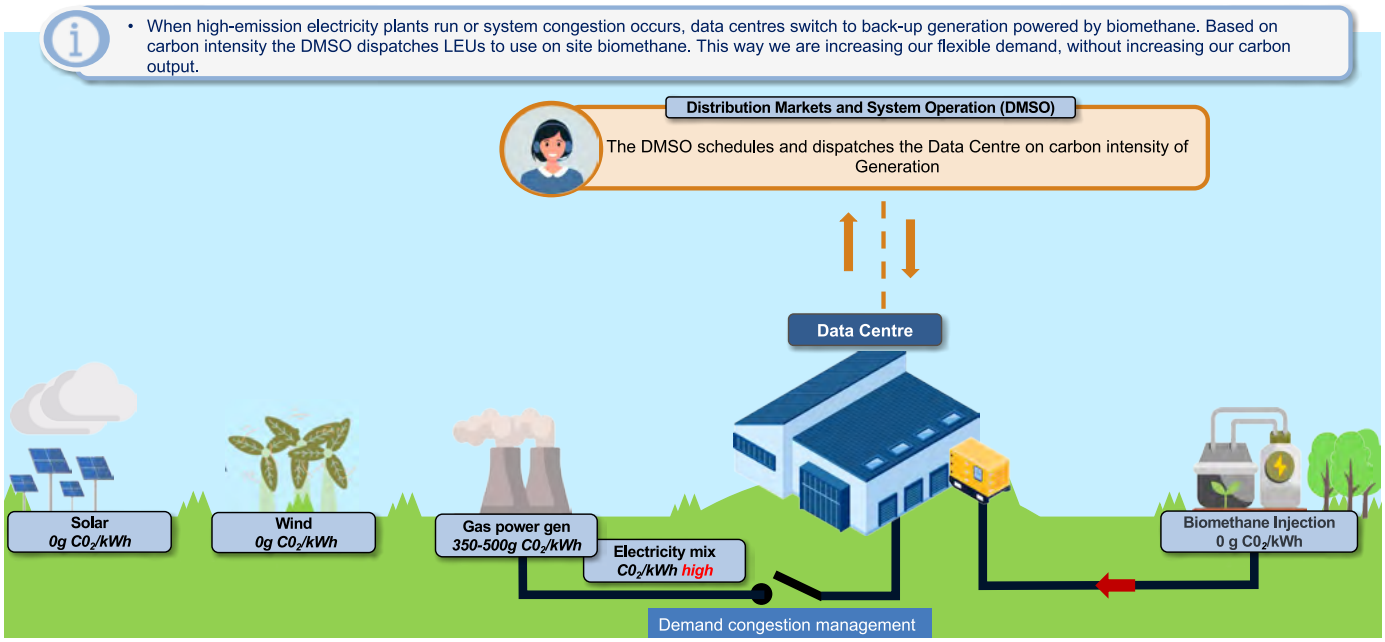

Figure 1: Potential operation of the successful Lighthouse customer site

The flexibility contract will need to be underpinned by the successful customer's Biomethane procurement process (either directly or through gas supplier).

In order for a successful Lighthouse, both of the above agreements should be reconciled periodically over the 12-to-18-month duration. ESBN would suggest a quarterly interval is appropriate. Our intent is to be operational in 2025, subject to contractual arrangements being in place. A key learning from our Lighthouse will be the levels of flexibility possible from the duel connected (Gas and Electricity) Large Energy User. The Lighthouse will test the market readiness for investment in Biomethane to underpin this demand flexibility. ESB Networks believe early adoption by the Large Energy User may stimulate early indigenous Biomethane product by creating earlier demand of the product at scale.

For the purpose of the Lighthouse project specifically we anticipate relatively small volumes of biomethane being required, in the region of 6 GWh to support a Large Energy Users deliver flexibility over a 12-to-18 month period. If the Lighthouse was to prove successful, and the

product was scaled we estimate no more than the 15% of the projected 5.7TWh of Biomethane would be required by the Large Energy User to support their own caron abatement targets and simultaneously deliver flexibility to the Distribution Electricity Network. The Lighthouse could be established using Internationally produced Biomethane for a short time until indigenous production come through.

NETWORKS

ESB NETWORKS
Three Gateway,
East Wall Road,
Dublin 3,
DO3 R583

Tel 1800 372 757 or +353 21 2386555
Email esbnetworks@esb.ie

esbnetworks.ie