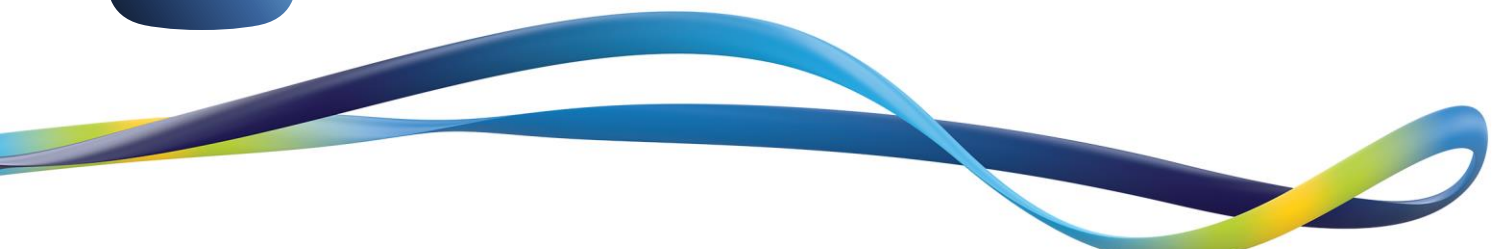




NETWORKS

A decorative graphic consisting of two overlapping, wavy lines that flow from left to right. The top line is a solid blue, while the bottom line is a gradient transitioning from blue to green to yellow.

# **ESB NETWORKS' RESPONSE TO STAKEHOLDER FEEDBACK RECEIVED TO OUR CONSULTATION 'INNOVATION TO DELIVER THE ELECTRICITY NETWORK FOR A CLEAN ELECTRIC FUTURE'**

**ESB Networks' Response Paper**

**DOCUMENT NO.: DOC-300323-HKO**

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## Introduction

ESB Networks published an update on our innovation activities entitled [‘Innovation to Deliver the Electricity Network for a Clean Electric Future’](#) in February 2023 and invited feedback from interested parties via a public industry consultation. We welcomed stakeholder feedback from 8 respondents in the following sectors:

SECTOR	
End Users/Customers/Rep Body	✓
Academia/Research	✓
Utility / TSO	✓
Equipment/Systems Manufacturers	✓
Industry Consultants	✓
Local Authority	✓

**Table 1: List of Stakeholder Sectors that Responded**

We received positive feedback and support from the respondents in relation to many of our ideas, pipeline projects and active projects and they were of a view that the consultation document was a useful summary of activity and reference of projects. A common theme was “*positive engagement*” and a welcome of the changes made to the consultation based on stakeholder feedback from last year.

Positive Feedback received included:

*“this document outlines an exciting and ambitious portfolio of innovation projects, which have the potential to make a significant impact on our climate targets, and to provide real value to Irish energy citizens and businesses”*

*“the Consultation Document and Innovation Process Summary “provides clarity on the scoring mechanism for choosing projects to progress”*

*“impressed by the innovation being undertaken by ESBN and the robust processes to manage all these projects, bring them to fruition and, where appropriate, imbed them into BAU”*

*“the inclusion of a section on peer-reviewed, published papers and articles is very welcome as it demonstrates the international dissemination of ESBN’s innovation activities amongst the power and energy industrial research community”*

The stakeholder feedback received from the public consultation fell within four broad categories below and ESB Networks has prepared summary responses to the feedback in the tables overleaf based on these four categories:

1. Feedback on the format and content of the **Innovation Consultation document** employed by ESB Networks.
2. Suggestions to enhance ESB Networks’ **approach to dissemination, engagement and collaboration.**
3. Suggestions/commentary to enhance innovation **projects currently being conducted** by ESB Networks.
4. **General Feedback, New Ideas and Proposals** for Innovation Projects.

ESB Networks’ Innovation Team will offer an individual meeting with each of the respondents to the consultation published in 2023 as there were several topics that warrant further engagement with specific respondents to:

1. better understand their feedback and how we might incorporate it into our activities.
2. follow-up on specific offers of collaboration and/or proposed solutions that are aligned to ESB Networks’ priorities and that may offer an opportunity for ESB Networks to leverage additional innovation capacity as appropriate.
3. follow-up on specific offers of collaboration and/or proposed solutions that have not been on ESB Networks’ radar and innovation pipeline that aligns with our strategy.

## Feedback on the Innovation Consultation format

A summary of the feedback and initial ESB Networks’ response is included in the following tables:

Feedback Received	ESB Networks’ Response
<p>A number of respondents commented on the length of the consultation and the level of detail. Some respondents wanted less detail and others wanted more detail included in the consultation for particular projects i.e. additional quantitative detail where applicable for related projects such as the Dingle project.</p>	<p>Following feedback from our previous consultations we have reduced the length of the document by 25%, while including relevant detail through links to recently published documents and project reports via our website. On project information it is not possible to include all information related to each project however we will look to include more relevant information for stakeholders in the future for current and future projects including quantitative measurables.</p> <p>For example, the Dingle project has significant quantitative and qualitative measurable outputs from the project which would be too voluminous to include in our report. The project has already published significant information in previous consultation documents, webinars and publications on the diffusion and measurable outputs from the project which are all available on the <a href="#">Dingle section of our website</a>. Thus a summary of the project was included in our consultation with relative links to our website to access the detailed information.</p> <p>We will endeavour to be more concise in the future while still providing relevant information across our project portfolio.</p>
<p>One of the respondents requested further clarity on the project initiation and greater transparency around the genesis of project proposals.</p>	<p>ESB Networks develops its projects and ideas based on the challenges facing both the networks and the industry (including those brought to us by stakeholders via numerous channels) to achieve net zero.</p> <p>Project ideas come through a number of channels and come from a range of sources both internal in ESB Networks and external across various sectors and academia to address the challenges.</p>

Where appropriate these go through our governance process and are developed into project proposals to assess the benefits as described in our document. Problem statements are drawn up from the challenges and projects are refined as policy priorities emerge, changes in customer behaviour manifest themselves and as forecasts for generation, flexibility and low-carbon load become more certain.

ESB Networks is always open to bilateral meetings to meet and engage stakeholders to understand challenges and issues.

## Feedback on ESB Networks’ Approach to Dissemination, Engagement and Collaboration

Several consultation responses focused on how ESB Networks could enhance the way it engages and collaborates with stakeholders and how it disseminates learnings from innovation activities to the wider industry. A summary of the feedback and initial ESB Networks’ response is included in the table below:

Feedback Received	ESB Networks’ Response
<p><b>One respondent requested further clarity on the role of ESB Networks contribution to the International Community for Local Smart Grids (ICLSG) project. On the ICLSG website, ESB Networks are not listed as a project partner, and are not mentioned anywhere on the website.</b></p>	<p>For the ICLSG project, ESB Networks recently became a partner at the end of 2022 and due to the website being updated with additional partners joining in early 2023 our membership will be included when the website is updated. ESB Networks will have similar involvement as all non-lead partners in the project in sharing knowledge, experience and learning from peer DSOs on the challenges facing networks and communities in conjunction with the innovation projects being carried out to address these challenges. All partners can suggest topics for discussion and mutual learning, as well as areas for formal and informal research within the group. As the project progresses further updates and information will be provided through our existing channels for dissemination.</p>

## Engagement and Collaboration

ESB Networks received a number of offers for enhanced engagement, suggestions for collaboration on various projects and opportunities for information sharing with ESB Networks.

Engagement and collaboration on projects and information sharing allows ESB Networks, our stakeholders and customers to leverage from a network of knowledge, expertise and experience to efficiently deliver relevant innovation projects that enable the transition to a low-carbon economy.

There are a number of topics in the responses that reach across our 3 pillars that will require further engagement with specific respondents. This engagement is important to (i) better understand the feedback and how we might incorporate it into our activities; (ii) follow-up on specific offers of collaboration and / or proposed solutions that are aligned to ESB Networks' priorities and that may offer an opportunity for ESB Networks to leverage innovation capacity; (iii) follow-up on specific offers of collaboration and / or proposed solutions that have not been on ESB Networks' radar and innovation pipeline.

To that end, ESB Networks' will offer an individual meeting with each of the respondents to the 2023 consultation. This offer will also be extended to any additional interested stakeholders as the opportunity arises or request is received. Throughout 2023 we will continue to hold bilateral meetings across industry, academia and public organisations.

In 2022 ESB Networks hosted a number of webinars through its Innovation Webinar series as well as its in-person Innovation Forum, on a number of relevant projects/activities. In 2023 we will continue to disseminate and engage with stakeholders through our Innovation Webinar Series across a range of topics voted for and selected by our stakeholders. The topic list for our upcoming webinar series will be circulated for our stakeholders to vote on their preferences. The schedule for our upcoming Innovation Webinar Series will be shared with our stakeholders in April 2023. We also use our External Stakeholder Panel as an opportunity for discussion of topics specifically relevant to our stakeholders, and a sounding board for potential future projects and collaborations.

As demonstrated above, we use a number of communication channels as a means for industry stakeholders to share with us proposals for new project pipeline ideas. These channels include our innovation consultation, our stakeholder panel and bilateral meetings.

Engagement in innovation is guided by ESB Networks Strategic Stakeholder Engagement Framework, which sets out our enduring engagement strategy to enable an open and ongoing dialogue with all our stakeholders.

## Suggested Enhancements/Commentary on Current Innovation Projects

Several consultation responses focused on how ESB Networks could improve and enhance innovation projects currently underway. A summary and initial ESB Networks' response is included in the table below:

Feedback Received	ESB Networks' Response
<p>Some respondents felt that there were not any projects looking at the contribution energy storage can make in managing congestion and providing flexibility to the DSO operations.</p>	<p>The core objective of the National Network, Local Connections Programme (NN,LCP) is to bring together changes in how we are generating electricity, and how we are using it, enabling all electricity customers and communities to play an active role in climate action, by using or storing renewable electricity when it is available to them locally. The Phased Flexibility Market Development Plan sets out our proposal for the development of market-based flexibility products and services on the distribution system. These flexibility products and services will enable all electricity customers and consumers to play an active role in climate action and the decarbonisation of Irish society. In 2022 NN,LCP established a consultative stakeholder group and launched its initial rollouts.</p> <p>The primary benefit of energy storage for the distribution system is the provision of flexibility and storage will be central to our ability to meet targets of 15-20% flexibility by 2025, 20-30% by 2030 as per the current Climate Action Plan targets and future targets to be determined. In 2023, the NN,LCP is preparing an initial rollout of products particularly suited to providing a viable route to market for longer duration storage and NN,LCP will be engaging with policy makers, industry and customers as the Programme progresses its work on storage.</p> <p>Note also that the Dingle, REACT and +CityxChange innovation projects all contained aspects of energy storage.</p>
<p>One respondent requested clarity on assigning projects to specific Innovation Pillars. i.e. It is unclear why 3.2.5 is in the Future Customer Pillar, should this one fall under the Network Resilience Pillar?</p>	<p>The innovation framework has been applied to a balanced portfolio of projects covering three Innovation Pillars: Future Customer, Climate Action and Network Resilience. The innovation pillars align with our Networks for Net Zero strategy, and our PR5 objectives as agreed with the CRU. On the listing of our Innovation projects, although they are assigned primarily to one of the three areas, they will tend to have aspects of all three pillars relevant to their implementation and outputs - in relation to 3.2.5 (300 kVA Pole Mounted Transformer) the pillar was aligned</p>

	<p>to the problem statement it is addressing, related to customers adopting low carbon technologies and enabling this.</p>
<p><b>Fast Follower Approach:</b>  <b>While respondents were supportive of this approach to ensure best value for money for customers, some would like to see some examples included of innovations considered for this approach and why they were not deemed viable in the Irish context. They felt it would also be useful to showcase which innovation projects from ESB Networks have been successfully adopted by peer DSOs, as an indication of areas of common interest across regions.</b></p>	<p>ESB Networks’ ‘Fast Follower’ approach reviews new solutions or technologies that have been trialled by other utilities and which may feasibly be transferred for use by ESB Networks in Ireland.</p> <p>Through our engagement and collaboration with peer DSO’s this approach seeks to leverage research and innovation that has already been implemented by other comparator utilities and also where ESB Networks can share their learnings. Recent examples of this include engagements with UK DNO’s to potentially fast follow our 300kVA pole mounted transformer and the sidewalk transformer projects.</p> <p>The fast follower approach offers opportunities to adopt and/or adapt such solutions for Irish circumstances, cognisant of the fact that the Irish electricity network has characteristics that are not necessarily replicated elsewhere. These somewhat unique characteristics include the challenges associated with having almost six times as much overhead line rural network per capita as most other European countries, combined with having large amounts of non-synchronous generation on an islanded system with substantially less interconnection than the vast majority of comparable jurisdictions. As such, a simple ‘Plug and Play’ approach to innovation outcomes successfully achieved elsewhere may not always be applicable on our system.</p>
<p><b>Consider adding benefits on the carbon reduction related to individual projects where applicable</b></p>	<p>As part of our Networks for Net Zero strategy we will be engaging with our environmental team to assess the impacts of our projects where applicable related to the science-based targets for net zero by 2040.</p>

## General Feedback, New Ideas and Proposals for Innovation Projects

Several consultation responses provided feedback to ESB Networks on general feedback, new ideas and innovation project proposals. A summary of the feedback and initial ESB Networks’ response is included in the table below:

Proposals Received from Stakeholders:	ESB Networks’ Response:
<p>Some respondents felt it would be useful to provide a list of the pipeline projects, and some more detail on the reasons for cancelled projects. This might be helpful for future project proposals from ESB Networks stakeholders.</p>	<p>Based on previous feedback received, the Consultation publication this year focused reporting more on projects that were in-progress or completed. We will look to provide a better summary in future of the pipeline of projects awaiting approval as with previous years while being mindful of the overall length of the document.</p> <p>Due to the nature of innovation and the pace of projects and programmes it is not uncommon for projects to be subsumed into other programmes of work or cancelled due to newer developments.</p>
<p>Particular sectors of the economy want to play a central role and take advantage of the diversification opportunities offered as the economy transitions to meet its renewable electricity and emission reduction targets and raised concerns in relation to access to the grid for micro and mini generation. Specific suggestions were made in relation to reducing barriers that limit uptake of renewable generation for smaller connections.</p>	<p>Over recent years ESB Networks have worked extensively to enhance existing processes and introduce new application routes to enable more customers connect renewable generation.</p> <p>ESB Networks' National Network, Local Connections Programme is working with other parts of ESB Networks to determine how we can facilitate faster connections for all new demand and renewable generation customers. The focus in the National Network, Local Connections Programme is delivering the technology which will allow for active management of the system, and we are very keen to facilitate customers who wish also to manage their load/interaction with our system.</p>



It was suggested that it would also be helpful to outline a process for collaboration in publicly funded projects (such as SEAI RD&D or Horizon Europe). We recognize ESB Networks is a preferred partner for many funding submissions, so clarity on the preferred method of engagement for these bid submissions would provide transparency to the resulting partnerships.

ESB Networks has significant international engagement across our Innovation activities and looks to leverage learnings and innovations from international sources in a variety of ways.

ESB Networks has strong links and engagements with other DSOs around the world through our membership and engagements with other international organisations such as EPRI, Eurelectric, Cigré, Oxford, CIRED etc.

As part of ESB Networks' membership of the Energy Networks Association (ENA) for the UK and Ireland we have looked to maximise our engagement and collaboration through our innovation activities with peer member DNO/DSOs.

ESB Networks has been a participant in the Free Electrons Programme, the global energy start-up accelerator programme that connects the world's most innovative start-ups with nine leading global utility companies (EMEA, US, Australia and Asia) to co-create the future of energy.

The Horizon projects in our existing portfolio of projects has over 50 collaboration partners involved.

ESB Networks welcomes opportunities for potential collaboration on projects that will benefit ESB Networks and our customers. The proposed project/collaboration will be reviewed on a case-by-case basis. To deliver best value for our customers and given the resources we have at our disposal, we believe it is correct to prioritise projects that are TRL7 and above. Horizon projects tend to consider and evaluate concepts at a lower TRL so we will continue to focus our resources on the more proven technologies and higher priorities.

On occasion some of the Horizon projects have quite large numbers of project partners with quite broad scopes of work that can make it challenging to achieve specific targeted objectives and quantifiable benefits for ESB Networks and customers as the DSO. We have sought to reframe our involvement in those types of projects to ensure we are achieving best value for an organisation of our modest size and scale.

We will continue with the compromise agreed following previous stakeholder feedback, i.e. we will provide Letters of Support to Irish-led consortia bidding for such EU projects (aligned with our innovation pillars) where we will agree to participate in project advisory boards or similar. We recognise that there is value to both ourselves and these projects in sharing our distribution utility perspectives and learning about the projects' recommendations and outcomes and believe this is an appropriate compromise at this time given the resources available to a utility of our size.

<p>In previous consultation responses it had been suggested to run a public call for project proposals, similar to those of the GB DNOs, based on the innovation needs identified by ESB Networks. Targeted workshops with industry could also be helpful to support development of project ideas, with publication of the resulting ideas and evaluation scores.</p>	<p>In 2022 in response to stakeholder feedback in relation to radical projects we published an Expression of Interest seeking views and project proposal ideas from stakeholders on radical projects. While we received 15 responses with various proposed areas for potential projects these were all in the incremental space and no radical project proposals were submitted as part of the EOI. We offered and engaged in a number of bilateral meetings with respondents to explore each submission.</p> <p>The outcomes from the EOI while not identifying any radical innovation projects or areas to investigate it did offer an opportunity to engage with new industry stakeholders nationally and internationally. We are currently engaged with an industry stakeholder who has worked with GB DNOs in the area of electrification and network planning to explore ideas for potential projects that supports the network to enable electrification.</p>
<p>It is the view of one respondent that the current innovation strategy and portfolio approach is excessively conservative, incremental in nature, and focused on the short-term.</p> <p>Suggestion to use new HV cable technology to radically upgrade the network</p>	<p>In order to Innovate ESB Networks has to invest time and resources and follows the agreed process outlined in our consultation report. Following an Initial assessment, an Investment Appraisal goes through the Cost Benefit Analysis and equally includes qualitative and quantitative benefits for the project.</p> <p>Long-term, radical and breakthrough innovations are considered, and ESB Networks is very aware that this implies a radical and complex transition over the next few years to achieve 2030, 2040 and 2050 targets.</p> <p>As part of the bi-lateral meeting with this respondent, we look forward to engaging on this subject.</p>
<p>Stakeholder queried whether there is any opportunity to capture the waste heat from ESB Networks transformers to provide a small district heating system to serve their offices near a substation site.</p>	<p>We are aware that there is early research to assess the viability and technology required for use of transformers in this area as well as related regulation. We will monitor such projects and their learnings as to their viability, risk and benefits in the future against alternative technologies and approaches to support the decarbonisation of heat.</p>
<p>Land owners to be considered when ESB Networks are implementing new technologies such as drones, new poles or transformers.</p>	<p>ESB Networks has a very strong stakeholder engagement policy and as always will engage on any new technologies, projects and developments that may impact on land owners and others.</p>

For any additional information, please contact ESB Networks' Innovation Team via email: [innovationfeedback@esbnetworks.ie](mailto:innovationfeedback@esbnetworks.ie)