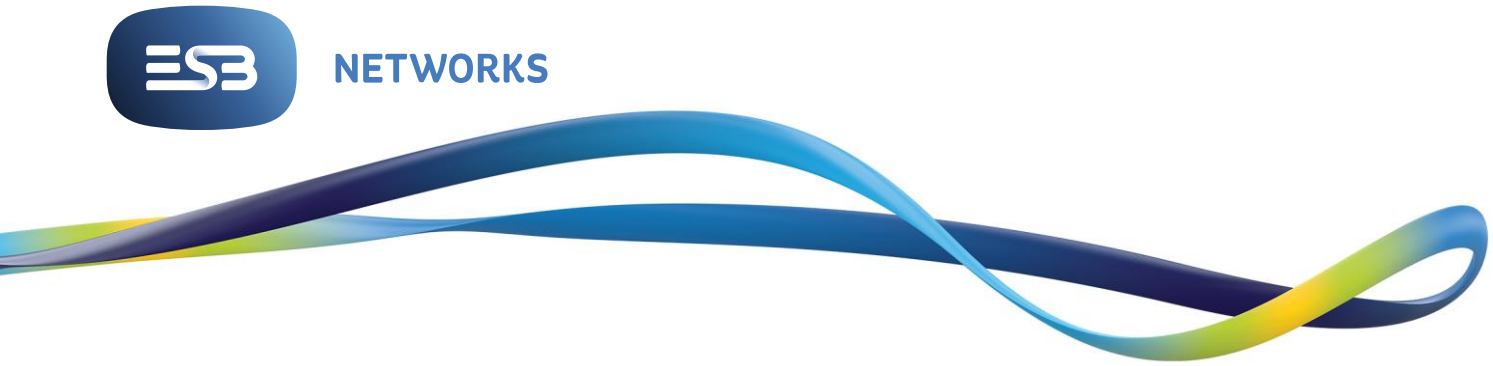

NET-FLEX - INNOVATION PROJECT PROGRESS REPORT

PROJECT OWNER: Sandie Madden

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PROJECT START DATE: Q3, 2019
PROJECT END DATE: Q1, 2022

1. PROJECT OVERVIEW AND EXPECTED BENEFITS

This project, Net-Flex, follows on from the Smarter HV and MV Customer Connections project that laid the groundwork for Non-Wires Alternatives (NWA) to conventional network upgrades. These are usually capital-intensive efforts, where substation expansion and new overhead lines are needed. This project aims to investigate the possibility of managing and reducing customer peak demand as a complement to network upgrade works. This will be beneficial to the customer because it gives us an opportunity to bring forward customer benefits in terms of improved security, speed of access or deferral of conventional reinforcement.

The project proposes to trial a grid-scale non-wire flexibility solution to be provided by trial participants and ready for deployment by end of Q3 2021. The project aims to determine from a range of known conventional reinforcement projects a best use case/s for this trial. It is expected that the objective can be achieved at specific locations using one or more solutions including “generation turn up and/or demand turn down” techniques.

The chosen project location / network node will then be analysed with a document package issued for procurement of trial participant solutions of non-wire alternatives. The tender responses received will be analysed and flexibility solution/s selected. The successful bidder/s will be notified and contracted through a framework package describing the amount and timing of the response service. The contracted flexibility will then be deployed and utilised.

Expected Benefits

Many Distribution System Operators (DSOs) have trialled flexibility over the last 10 years with some progressing to the implementation of a flexibility roadmap thereby providing a long-term view of flexibility ambitions. Undertaking this project will afford ESB Networks the following potential opportunities in respect of networks investment:

- Complement network investment solutions by providing a bridge for the construction gap where works or improvements have already been scheduled or will be needed at a point in the future or deferral of a planned reinforcement.
- To arm planners with pilot data and learnings for the introduction of non-wires flexibility options.
- To help solve overloading issues at locations where the anticipated cost and length of time needed by the conventional solution are high.

2. PROJECT SCOPE

The foundation for this project is set out in large part by the work of the Smarter HV and MV Customer Connections project. This project introduced the concept of NWA to solve network upgrade requirements. This project identified how flexibility services can have a significant impact on how distribution networks are planned and developed, and while maintaining security of supply. The flexibility provided by such services allows a further option for consideration when assessing a network need or constraint, and it is intended that this flexibility can be procured as a service by ESB Networks to assist in the development and operation of a safe, secure and reliable distribution system.

The scope of the Net-Flex project is a focused progression of the scope of the Smarter HV and MV Customer Connections project, specifically by trialling its concepts and processes. The Net-Flex project is to consist primarily of a trial to procure and implement flexibility services, and to identify the processes and systems needed to enable and facilitate the trial.

Candidate Selection and Selection Criteria

The project scope involves the application of the 'Reasonableness Test' criteria identified in the Smarter HV & MV Customer connections project under the Non-Wire Alternatives sub-section by which locations can be selected or rejected as suitable candidates for this trial. Ref: https://www.esbnetworks.ie/docs/default-source/publications/doc-140220-fol-non-wires-alternatives-to-network-development.pdf?sfvrsn=659201f0_0

Procurement and Procurement Documentation

The project will set out how flexibility services are to be procured in the most efficient manner possible. The procurement exercise must be an open one and assess the widest customer base from which services may be procured.

Flexibility Service Providers (FSP):

Customers such as existing demand customers, distributed generators, energy storage, or other proven technologies connected to the distribution system, are to be sought. The procurement effort will target all technologies capable of providing the services. Existing demand customers can provide a flexibility service either individually or collectively, through an aggregator.
Such parties must have the ability to increase export, decrease import or release stored energy, as appropriate and within the terms of their connection agreement (i.e., MIC and MEC levels, and any other conditions described), during the contractually defined time periods, or when instructed to do so, thereby changing the load profile as seen by the distribution system.

Contract & Deployment:

Those FSPs that are successful at the procurement stage will be contracted for the service definition windows of the selected candidates and then deployed per the contract during the winter period of 2021/22. All results will then be evaluated and communicated.

3. MILESTONES REACHED TO DATE

A cross-functional project team has been formed and has met a number of times, resulting in further refinement of the project scope and clarification on the approach to be taken. A PID (Project Initiation Document) has been drafted, capturing these clarifications and reviewed and agreed by all project team members. Additionally, a webinar was held for internal & external stakeholders outlining the project's aims and status.

4. PROJECT TIMELINES

The project was initiated in Q3, 2019 and is progressing through project selection, definition & procurement which will lead to contract award & deployment for the winter period of 2021 and aims to be fully completed by Q1, 2022.

5. RESULTS TO DATE

The project is in its early stages and results are expected as the project progresses.

6. LEARNINGS / BENEFITS REALISED TO DATE

The project is aware of significant difference between how the UK Distribution Network Operators (DNOs) operate the networks compared to how ESB Networks as the Irish DSO operates the Irish network. This project will consider the relevance of aspects of this work in other jurisdictions, and the Net-Flex project is then expected to provide more specific learnings in how to apply flexibility in the Irish context.

7. NEXT STEPS

Led by the project manager, the project team is currently engaged with procurement and commercial personnel to begin the process of mapping out a route to procure the flexibility services. In parallel with this an assessment is being made of various sites for candidate suitability for application of this trial.

If you would like further information from this project, please contact us at innovationfeedback@esbnetworks.ie