

SUCCESS CASE 29.2025

LCT Register

DEVELOPMENT OF A LOW CARBON TECHNOLOGIES REGISTER OF COMPLIANT DEVICES THAT CAN BE CONNECTED TO THE ELECTRICITY DISTRIBUTION NETWORK



THE CHALLENGE

The **Low Carbon Technology (LCT) Register** project was initiated to address several critical challenges faced by the Irish DSO ESB Networks. The primary challenges include:

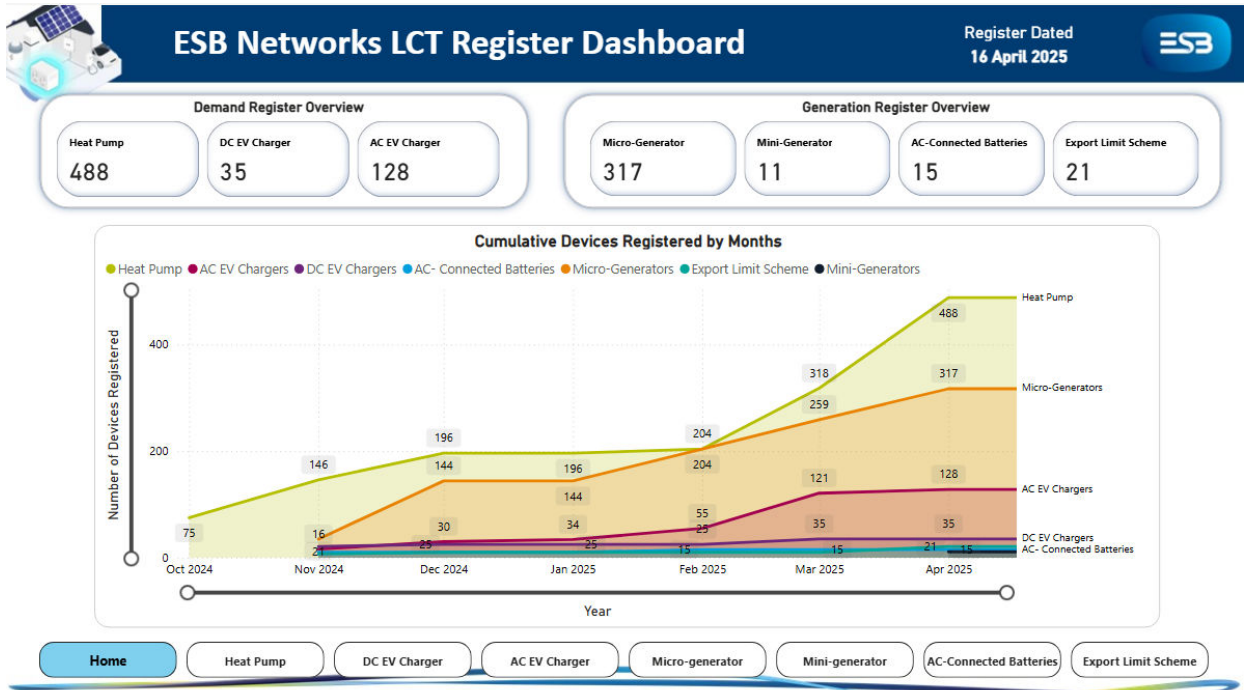
- 1) **Technical and Safety Concerns:** ensure that all LCT technologies connected to the distribution network meet the necessary technical standards to prevent supply overload, damage to supply equipment, power quality issues, and enable adequacy of installation.
- 2) **Administrative Efficiency:** The projections for LCT device installations associated with the electrification of heating and transport, in addition to the number of solar photovoltaic (PV) installations, pose massive administrative overhead challenges for the application and connection process.
- 3) **Visibility and Data Management:** Establishing visibility of the LCT devices to be connected to the network will better enable investment decisions, management of the anticipated workload as electrification accelerates and support key customer-focused services.

SCOPE

The scope of the LCT Register project encompasses several key activities and deliverables:

- The establishment of an LCT Compliant Equipment List, providing assurance that technologies being connected meet necessary standards.
- The appointment of an LCT Compliance Agency. An external company has been appointed as the LCT Compliance Agency to manage the registration of LCT manufacturers' devices and populate the LCT Register.
- The modification of the Connection Application Process, aligning application forms with the rationale and purpose of the LCT Compliant Equipment List.

- The development of an LCT Database, creating and populating a database with locations of LCT devices connected to the network.
- The creation of Data Sharing Agreements, securing agreements and consents with third-party organisations for data provision to ESB Networks.
- The adaptation of responsibilities, updating responsibilities of electrical contractors and installers to certify the installation of all LCT devices connected to the distribution network.



Dashboard of the LCT Register.

THE OUTCOME

The LCT Register project has achieved several significant outcomes:

- **Enhanced safety:** The project aims to ensure that all LCT technologies meet necessary standards, which may help in reducing risks related to supply overload, equipment damage, and power quality issues.
- **Improved administrative efficiency:** The project has streamlined the application and connection process, reducing the need for provision and storage of multiple copies of documentation and simplifying the registration process for customers and contractors.
- **Increased visibility:** The LCT Register provides detailed information on the types of LCT devices connected to the network, enabling better management and support for customer-focused services.

- **Support for electrification:** The project has put ESB Networks in a position to manage the anticipated increase in LCT device connections, supporting the broader goal of electrification and sustainability of the energy sector.

These outcomes collectively contribute to the strategic objectives of ESB Networks, enhancing safety, efficiency, and customer service in the context of low-carbon technology integration.

NEXT STEPS

As a next step, ESB Networks will develop a new *Inform and Fit* process where all installations of heat pumps, electric vehicle chargers and inverter-based generation devices will be notified to ESB Networks, thus providing **enhanced visibility of the location of all LCTs connected to the distribution network**. This LCT Database will support the development of **new data-driven services** for customers, low-voltage network investment decisions and the design of flexibility schemes.