



NETWORKS

# ENVIRONMENTAL PERFORMANCE REPORT 2021

DOC-190522-HLS

Issue date: 30th June 2022

Issued by: Environment, ESB Networks



# Contents

	<b>1</b>
	<b>3</b>
	<b>6</b>
	<b>12</b>
	<b>22</b>
	<b>26</b>

---

01

EXECUTIVE  
SUMMARY





# Executive Summary

Welcome to ESB Networks' 2021 Environmental Performance Report. In this report you will find information on the environmental and sustainability aspects of our business.

**During 2021 significant progress was made in ensuring we continue to effectively manage the environmental and sustainability aspects of our business as we connect Ireland to a clean electric future.**

ESB Networks continues to actively support the increased adoption of e-heat and e-transport, in line with the government Climate Action Plan 2021. Our National Networks Local Connections Programme is working to put in place the systems, processes and capabilities needed to allow citizens and communities to participate actively and securely in transmission, distribution and market activities.

Overall, by the end of 2021, ESB Networks had enabled the connection of 4,690 MW of renewable energy (4,293MW of wind energy generation) to the electricity system. 2,443 MW is connected at distribution level and 2,247 MW connected at transmission level. During 2021 ESB Networks continued its multi-year programme to replace over 2.4 million electricity meters in homes, farms and businesses with next generation smart meters to support the transition to a low carbon electricity network. The Covid-19 lockdown in 2021 resulted in 63 days of smart meter installs lost. Despite this, ESB Networks achieved over 382,000 smart meter installations during 2021. Subject to ongoing Covid-19 guidelines, the programme plans to replace approximately 500,000 meters during 2022.

ESB Networks' Dingle Project made

significant progress throughout 2021. The 12-month electric vehicle trial commenced in February and all final technologies required to enable the Flexibility Trial were installed. Trials of technologies on the MV network to minimise duration of supply interruptions and other technologies to enhance fault location identification progressed. Social research highlighted the benefits that initiatives are having in promoting positive energy behaviours and examples of technology diffusion are starting to emerge.

Overall carbon emissions from our fleet, buildings, waste materials and SF6 Gas declined in comparison to 2020 and we continued to work with the European Distribution System Operator (E.DSO) organisation in defining relevant environmental KPIs

During 2021 ESB Networks continued to manage a number of environmental compliance issues as detailed later in this report.

When compared to 2020, ESB Networks reduced the leakage of SF6 Gas due to equipment faults by a further 8%.

In 2021, ESB Networks generated 7,818 tonnes of waste from its business operations, a 9% decrease when compared to 2020. In addition, 99% of waste materials generated by ESB Networks as part of its business operations was diverted from landfill.

ESB Networks' Environmental Change Programme continued to strengthen environmental awareness in the Networks organisation. This Programme



was completed in 2021 and the resulting improvements in environmental areas have now been incorporated into normal day-to-day operations.

During 2021, we continued to roll-out ESB Networks Internal Environmental Strategy 2021 to 2025.

ESB Networks' Environmental Management System (EMS) retained its external certification to the ISO: 14001 Standard, following two independent external Surveillance Audits.

As part of our commitment to ensuring open and transparent reporting of our performance, we expanded and improved the [Environmental and Sustainability section of our website](#) during 2021.

02

# INTRODUCTION



## Introduction

ESB Networks has a number of licence obligations relating to the environment contained in the Distribution System Operator (DSO) licence and the Transmission Asset Owner (TAO) licence. Condition 30 of the DSO licence and condition 22 of the TAO licence require the respective licence holders to:

- › **Comply with all current and future European Union and Irish Environmental Laws, as well as directions by the Commission for Regulation of Utilities in respect of its duties relating to the Environment.**
- › **Maintain an Environmental Policy setting out how it will comply with its duties and obligations under these laws and directions.**
- › **Report annually to the Commission for Regulation of Utilities on its environmental performance.**

This report has been prepared by ESB Networks on behalf of the DSO and TAO for the year ending December 2021.

In July 2020 ESB Networks DAC was served with notice of a prosecution by the Environmental Protection Agency (EPA) in relation to fluorinated greenhouse gases (SF6). This prosecution was not progressed during 2021 primarily because of court restrictions due to Covid-19. ESB Networks continued to focus on and improve its management of SF6 during 2021, as detailed later in this report.

In 2021, fourteen requests for information under the European Communities (Access to Information on the Environment) Regulations 2007 – 2018 were received and decisions issued by ESB Networks. Of these fourteen decisions, four were appealed to the Commissioner for Environmental Information. ESB Networks has dedicated staff involved in the management of these requests to ensure all requests are responded to within the statutory timelines.





03

# ESB NETWORKS - WHO WE ARE



# ESB Networks

## - Who we are

ESB Networks provides the electricity infrastructure that transports electricity to all customers in Ireland through both the distribution and the transmission Systems. We have served Irish customers for over 90 years and have provided the electrical infrastructure on which our society has developed.

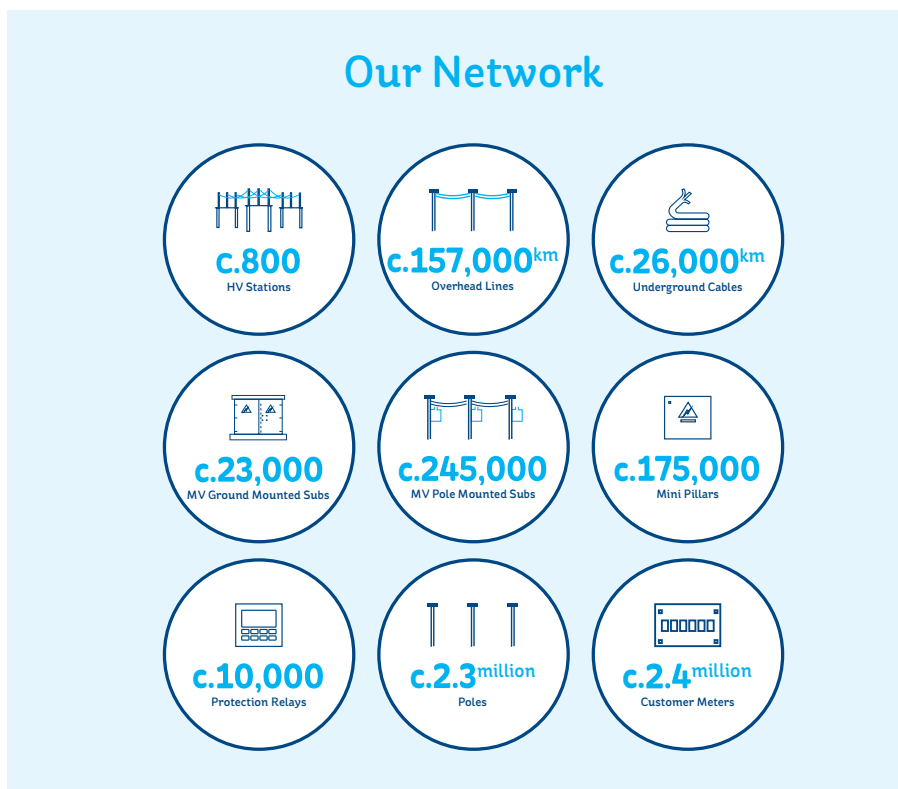
As Distribution System Operator (DSO), Distribution Asset Owner (DAO) and Transmission Asset Owner (TAO), ESB Networks works to meet the needs of all Irish electricity customers, providing universal affordable access to the electricity system and delivering and managing the performance of a system of almost 157,000 km of overhead networks, 26,000 km of underground cables, over 800 high voltage substations, significant amounts of connected generation (including renewable generation connected to the distribution and transmission systems)

and 2.4 million demand customers. We carry out all the functions relating to the electricity distribution system. This includes asset management, planning, construction, maintenance, and operation of the high, medium, and low voltage distribution networks. We also deliver a range of services to the Republic of Ireland (RoI) Retail Electricity Market servicing over 2.4 million customers. We manage relationships with market participants and provide data in a timely and accurate fashion on a daily basis. ESB Networks supports the wider electricity

market through the ring-fenced Meter Registration System Operator (MRSO) and Retail Market Design Service (RMDS) and supports the wholesale Single Electricity Market through the provision of aggregated meter data.

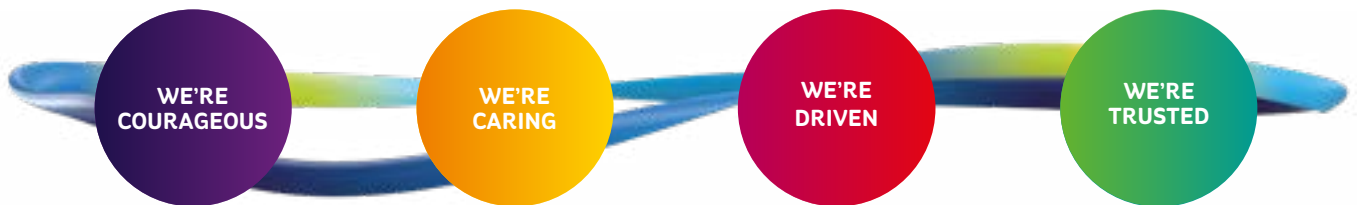
ESB Networks build and maintain the high voltage transmission system. By the end of 2021, ESB Networks had facilitated the connection of over 4.69 GW of renewable energy generation to the distribution and transmission systems.

Customer service is at the heart of everything we do at ESB Networks. We provide services to every electricity customer irrespective of their electricity supplier. Our countrywide staff are committed to making excellence the hallmark of all aspects of our dealings with our customers. We are committed to facilitating the move towards low carbon technologies and want to support our customers to enable them to participate in the energy market.





## Our Values



Each of us is prepared to challenge the way we've always done things, stand up for what we feel is right and try better ways of working.

We're putting customers' current and future needs at the heart of what we do and we keep ourselves and others safe and healthy.

We bring passion and persistence to what we do every day, innovating and collaborating to meet the challenges and opportunities ahead.

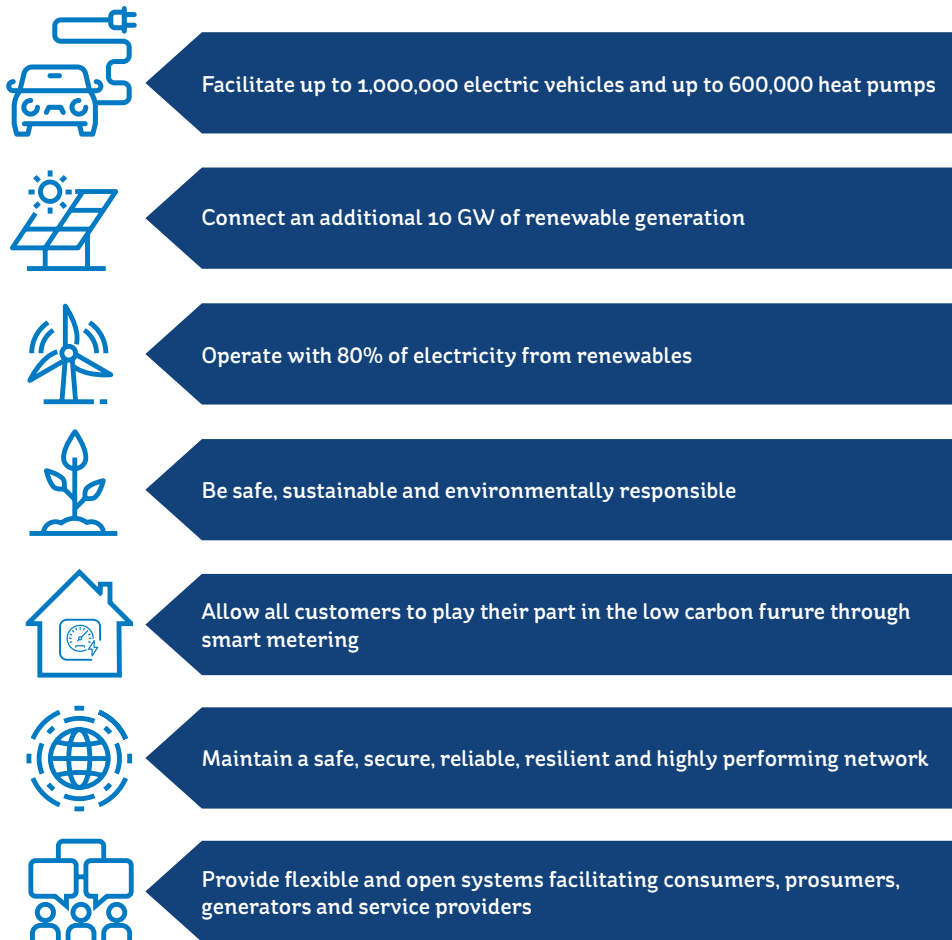
We each play our part, taking ownership of our responsibilities, seeing the job through and protecting our own health and safety, as well as others'.

ESB Networks is committed to leading the transition to a low carbon future. The Climate Action Plan identifies electrification of heat and transport as central to transitioning to a low carbon society. ESB Networks will work to develop and adapt our networks in innovative ways to support this goal. The ability of electricity networks to adapt and innovate in this changing and uncertain environment will be crucial to their future success. This changing environment provides us with challenges but also provides great opportunities for innovation. By 2030 our network will support, through the identification of innovative opportunities, huge changes in electricity generation and consumption.

The ESB Networks Environmental team and senior leadership team support the various groups and teams across the business who hold key environmental responsibilities. ESB Networks have an enduring role to ensure the environment and our day-to-day activities are managed in a sustainable way. ESB Networks draws from across the key areas of business and those with specialist knowledge in areas such as electricity, procurement, environment and construction to achieve this.



## ESB Networks' vision is that by 2030 our Network will:



## ESB Networks Strategy 2020 – 2030

At ESB Networks we will operate our business so that we can be proud of our environmental performance and sustainability. This means:

- › Transforming our environmental performance across all our operations.
- › Reducing the carbon footprint of our operations and delivering on our commitment to the E.DSO Sustainable Grid Charter.
- › Ensuring that action and reporting is open, transparent, and consistent with our values.

Our strategy in ESB Networks until 2030 is framed by the Climate Action Plan. It is driven by ESB Networks' central role in leading the transition to a secure and affordable low-carbon future, using clean electricity to drive carbon, in the form of fossil fuels, out of heat, transport and the economy. Our purpose in ESB Networks has always been to connect and distribute electricity – safely, securely, and affordably. Now, acknowledging the central role that electricity plays in climate action, our purpose has evolved. So, while we continue to connect and distribute electricity, our purpose

now also embraces connecting and accommodating high levels of renewable generation and enabling comprehensive and wholesale electrification.

Delivering this is going to require a challenging transformation of our network, our systems and our approach. The sustainable social and economic development of communities, businesses, Ireland's climate action response and transition to zero carbon are all dependent on Networks delivering our purpose through to 2030 and beyond.

## ESB Networks Internal Environmental Strategy - 2021 to 2025

We continued to roll out ESB Networks' internal Environmental Strategy – 2021 to 2025 across Networks during 2021.

The Environmental Strategy aligns with the Environment and Sustainability objective outlined in ESB Networks' Strategy 2020 – 2030:

*"At ESB Networks we will operate our business so that we can be proud of our environmental performance and sustainability"*

The Environmental Strategy sets out our commitment to being environmentally responsible and will enable ESB Networks move to be one of the most environmentally progressive utilities in Europe. In 2021, ESB Networks continued to focus on achieving the objectives of this Strategy.

The strategy is based on the following 5 commitments as these relate to Environment

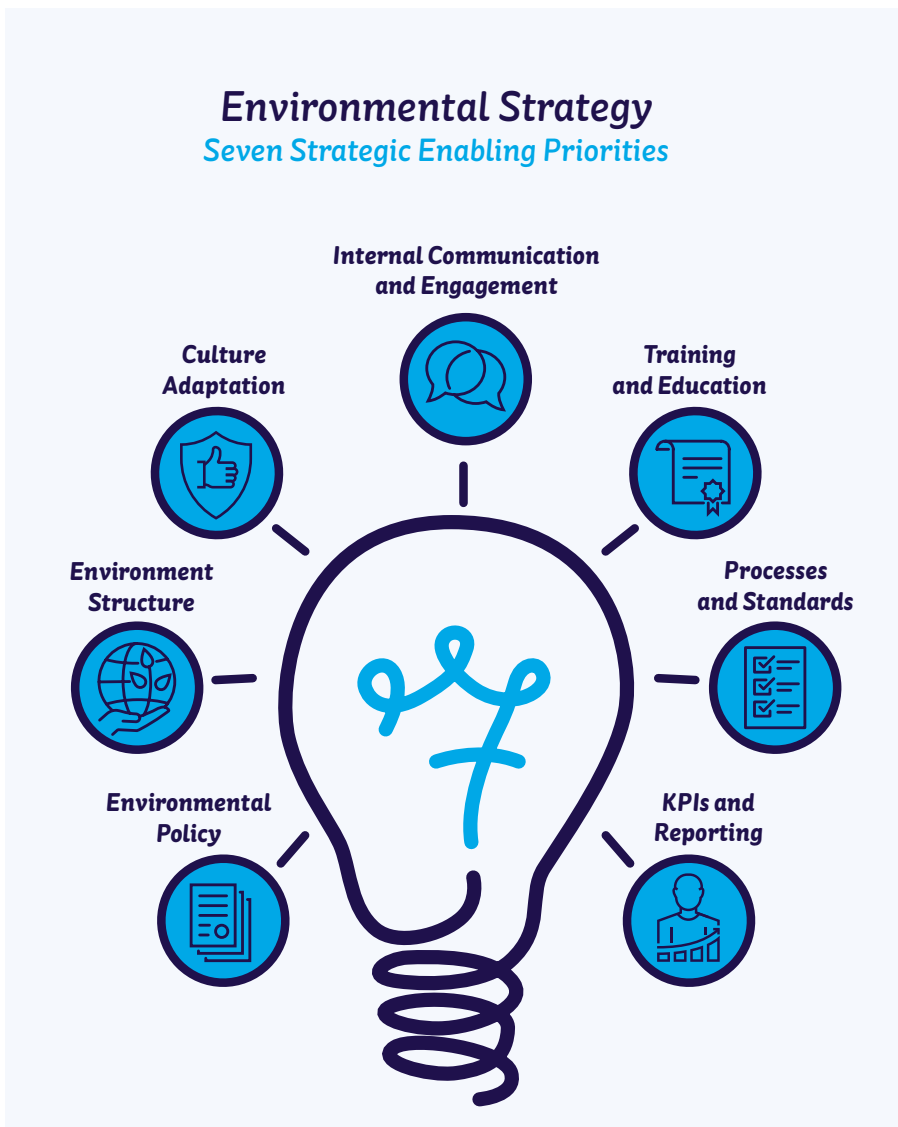
People

Workplace

Tools  
Equipment  
Vehicles  
Machinery

Systems  
of Work

Behaviours



## Stakeholder Engagement

We value the trust that has developed with our customers and stakeholders over many years. As the distribution system evolves to support Ireland's transition to a low-carbon economy we will ensure that customers and stakeholders remain at the centre of our business. Listening to and engaging with customers is key to understanding their needs and preferences as to how we develop the network and deliver services.

We recognise that effective stakeholder engagement is essential for the successful management of our business. As a strategic priority, it is led by the Directors and the senior leadership team and is seen as a vital activity at every level of the organisation. ESB Networks' 'Strategic Stakeholder Engagement Framework', sets out our enduring engagement strategy to enable an open and ongoing dialogue with all our stakeholders. The framework identifies our stakeholders and the principles that guide our engagement, together with our proposed engagement methodology and our governance and control processes.

We will ensure that we are able to meet both the needs of our customers today and prepare the network to meet the needs of our customers in the future through an open and ongoing two-way dialogue with our stakeholders. During 2021 we increased our engagement activities more than ever before. ESB Networks Stakeholder Engagement Report for 2021 describes in detail



our commitment to being transparent with our customers and stakeholders and describes how we have delivered against our engagement plans in 2021 recognising the importance of stakeholders' contributions to the successful delivery of these initiatives. If you would like to learn more about ESB Networks' stakeholder engagement you can find out more in the [Stakeholder Engagement section of our website](#).

As part of our commitment to ensuring open and transparent reporting of our performance, we expanded and

improved the [Environmental and Sustainability section of our website](#) during 2021. The website includes current information relating to our Climate Action & Sustainability vision, Innovation for a low carbon future, Biodiversity, and how we are managing our environmental risks. We have also published the 2020 Annual Environmental Performance Report on the website and will continue to make the most up-to-date version of this report publicly available on an annual basis.



04

DELIVERING A  
LOW CARBON  
FUTURE



## ESB Networks and the Climate Action Plan

ESB Networks is at the centre of the current transformational energy transition and is proud to be playing a leading role. The distribution system is evolving to become a low-carbon energy system where 80% of the electricity generated in Ireland will come from renewable sources by 2030. The electrification of heat, transport and our economy will see our customers adopting low carbon technologies such as heat pumps, electric vehicles and microgeneration such as solar PV. To enable this, the role of ESB Networks is changing and we are designing the products and systems to allow citizen and community participation in the future energy system. ESB Networks is investing in smart meters and extensive digitization, adding additional capacity through network reinforcement, connecting increasing quantities of microgeneration, and establishing the systems to enable active participation by customers who choose to take a full and active role. Through its innovation

programme, ESB Networks has been trialling solutions to understand how individuals interact with new technologies, and the impact that this will have on their lives and on the electricity distribution network.

We are acutely aware of the fundamental importance of the network to the decarbonisation of society; not only by facilitating renewable generation and the electrification of heat and transport, but also through actions such as enabling the active consumer and citizen energy communities.

ESB Networks has developed a strategy which will enable our delivery of Ireland's Climate Action Plan (CAP) and Project Ireland 2040. Our strategy is focused on leading the transition to a low carbon society and in particular:

› **Connecting renewable sources of generation to our Network so that 80% of our electricity will be from renewable sources.**

- › **Facilitating the wholesale electrification of heat and transport so that we can use this clean energy to drive carbon out of society.**
- › **Securely operating the network with a consistently high level of distributed energy.**
- › **Developing customer-centric solutions and enabling customers to become active participants in the energy system.**
- › **Designing, maintaining, operating and managing our network to the highest standards so that our network is safe, secure, reliable and increasingly resilient.**
- › **Engaging in an open and inclusive way with our stakeholders as we want to provide a voice for all in how the network is developed.**



## Connecting Renewable Energy

ESB Networks' mission is to play a leading role in Ireland's transition to a low carbon economy and to provide secure, sustainable, reliable electricity in an affordable manner for all customers. With the Government's Climate Action Plan having ambitious targets for increased penetration of renewable energy by 2030, ESB Networks has continued its key role of enabling the decarbonisation of electricity.

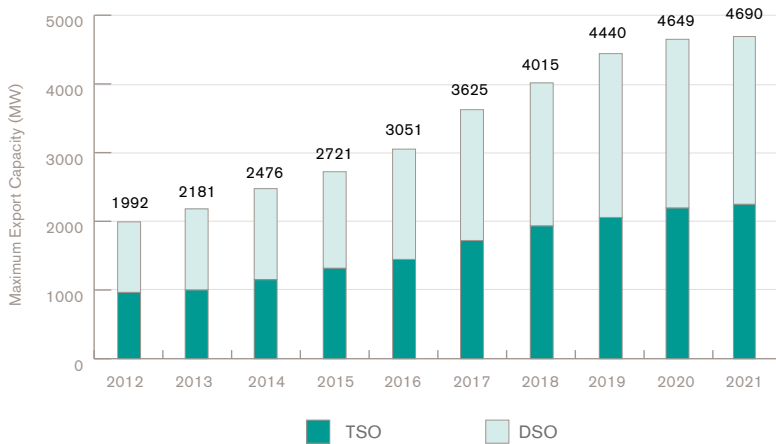
By the end of 2021, ESB Networks had enabled the connection of 4,690

MW of renewable energy (4,293MW of wind energy generation) to the electricity system. 2,443 MW is connected at distribution level and 2,247 MW connected at transmission level (see Figure 1). In addition, ESB Networks carried out scoping, design and construction works associated with the pipeline of customer projects for connection throughout 2022 and 2023. Many of these customer projects are participants in RESS-1, the Government Renewable Energy Support Scheme.

ESB Networks connected 6 energy storage projects for TSO and DSO customers in 2021 totalling 249MW, resulting in a total energy storage capacity of 690 MW on the network by the end of 2021 (see Figure 2). Two of these are distribution system connections and 4 are transmission system connections. Energy storage provides system support services to the electricity system operators to enable increased penetration of renewable energy on the grid.

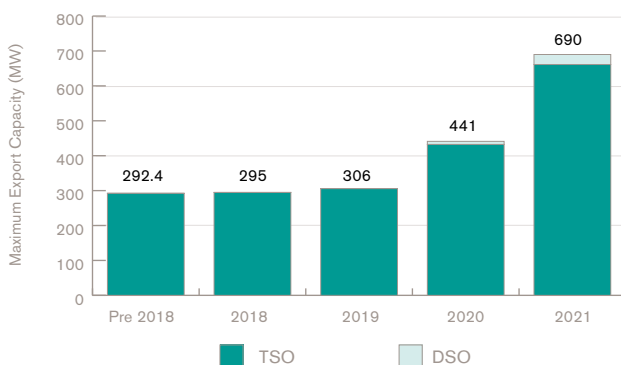
### Connected Renewables

Figure 1 – Renewable energy connected to the electricity system (2012- 2021)



### Connected Energy Storage

Figure 2 – Energy Storage connected to the electricity system



\* Energy Storage includes Pumped Storage, Flywheel and Battery Energy Storage Connections





ESB Networks is committed to facilitating microgeneration connection applications to the distribution network. Customers who wish to install microgeneration and export excess electricity onto the electricity network are referred to as prosumers. ESB Networks has an important role to play in facilitating this transformation. We aim to support our customers along each stage of the process as they adopt small-scale low carbon technologies and make the transition towards being active participants in the energy system. By the end of 2021, ESB Networks will have facilitated over 23,500 microgeneration connection applications to the electricity network. (See: [Micro-generation on esbnetworks.ie](#) for more details) These connections are in addition to the renewable energy figures shown above.

In 2021, ESB Networks continued to support innovative ways of connecting more renewables through implementation of its Distribution Security of Supply and Planning Standards. These new Standards are effectively the rules by which we determine how to connect our

customers to the electricity distribution network. The rules have the potential to positively impact approximately 80% of the MV network renewable connection applications we expect to receive, enabling more cost effective and faster connections to the grid. The rules also include a provision for the expected future growth in microgeneration (domestic Solar PV) connections. In December 2021, ESB Networks announced the launch of its new simplified Mini-Generation application process for larger, non-domestic sites (e.g. farms; business properties; community buildings; etc) generating from 6kW single phase and 11kW three phase up to 50kW. This equates to, for example, between 18 and 150 typical solar panels. The new Mini-Generation process is initially being launched on a pilot basis in line with Ireland's 2030 Climate Action Plan. Feedback and learnings from the pilot will be used to inform the enduring process. The new streamlined process will ensure that it is even simpler for our customers who generate their own renewable electricity to export their excess electricity to the local network and therefore play a more active part in connecting Ireland to a

clean electric future. The timeline on implementation of the remuneration mechanism for these generators will be progressed during 2022 (See: [Mini-Generation on esbnetworks.ie](#) for more details).

ESB Networks successfully processed the majority of the Enduring Connection Policy (ECP) 2.1 generator applications, in 2021. The application window first opened for the ECP2.1 Batch in September 2020 and included a mix of wind, solar and battery applications. ESB Networks processed 86 applications totalling 730 MW during 2021 and carried out extensive customer engagement across the period with over 100 customer meetings taking place to agree the customer connection methods. All ECP2.1 applications will be processed in advance of the RESS 2 auction process due to take place in May 2022. The aim will be for these projects to proceed with a RESS 2 contract or CPPA and start contributing to the CAP renewable electricity targets (80% renewables by 2030).





## Innovation

ESB Networks has a strong history of innovation, and as a result we have and continue to develop one of the most progressive electricity networks in the world.

Over the past decade, ESB Networks has invested over €7bn to make the electricity network smarter and more resilient, and to allow distributed energy assets like battery storage, wind farms and EVs. This has enabled intermittent renewable assets, like wind farms and solar plants, come on stream without undermining the quality of electricity supply.

It is through collaborative innovation that we will develop a future electricity network which empowers our customers, delivers value for money and provides a sustainable energy system for all customers.

In ESB Networks, we are very clear that the challenge of enabling a low carbon Ireland powered by clean electricity cannot be delivered without extensive and collaborative innovation. To that end our **Innovation Strategy** sees us delivering on a balanced portfolio of projects across 3 pillars:

- › **Future Customer – Empowering and Supporting Customers and the Economy**
- › **Climate Action – Decarbonising Electricity, Heat and Transport**
- › **Network Resilience – Efficient, Secure, and reliable electricity**

There is a significant wave of innovation downstream where customers interact with the electricity system throughout our industry. Microgeneration technologies like solar PV are available making it possible for future customers to potentially sell power back to the grid; the Internet of Things is connecting everything from energy assets to sensors in the home and digitally connected customers are able



to manage their energy use remotely through smart controls. Battery storage and electric vehicles are opening up the potential of large-scale storage for electricity that could support increased penetration of renewable energy on the grid. The possibilities are interlinked and extensive. In 2021 over 180 innovation ideas were examined in ESB Networks, 29 of which are in active delivery. We are collaborating with over 80 external

organisations on innovation concepts with estimated potential benefits of €60m.

Further details are available on our website: [Innovation in ESB Networks](#).

## Electrification

Increased electrification of heat and transport is a key policy aim of the Government's Climate Action Plan and ESB Networks vision is to facilitate our customers to connect at least 1,000,000 electric vehicles and at least 600,000 heat pumps on the distribution system by 2030.

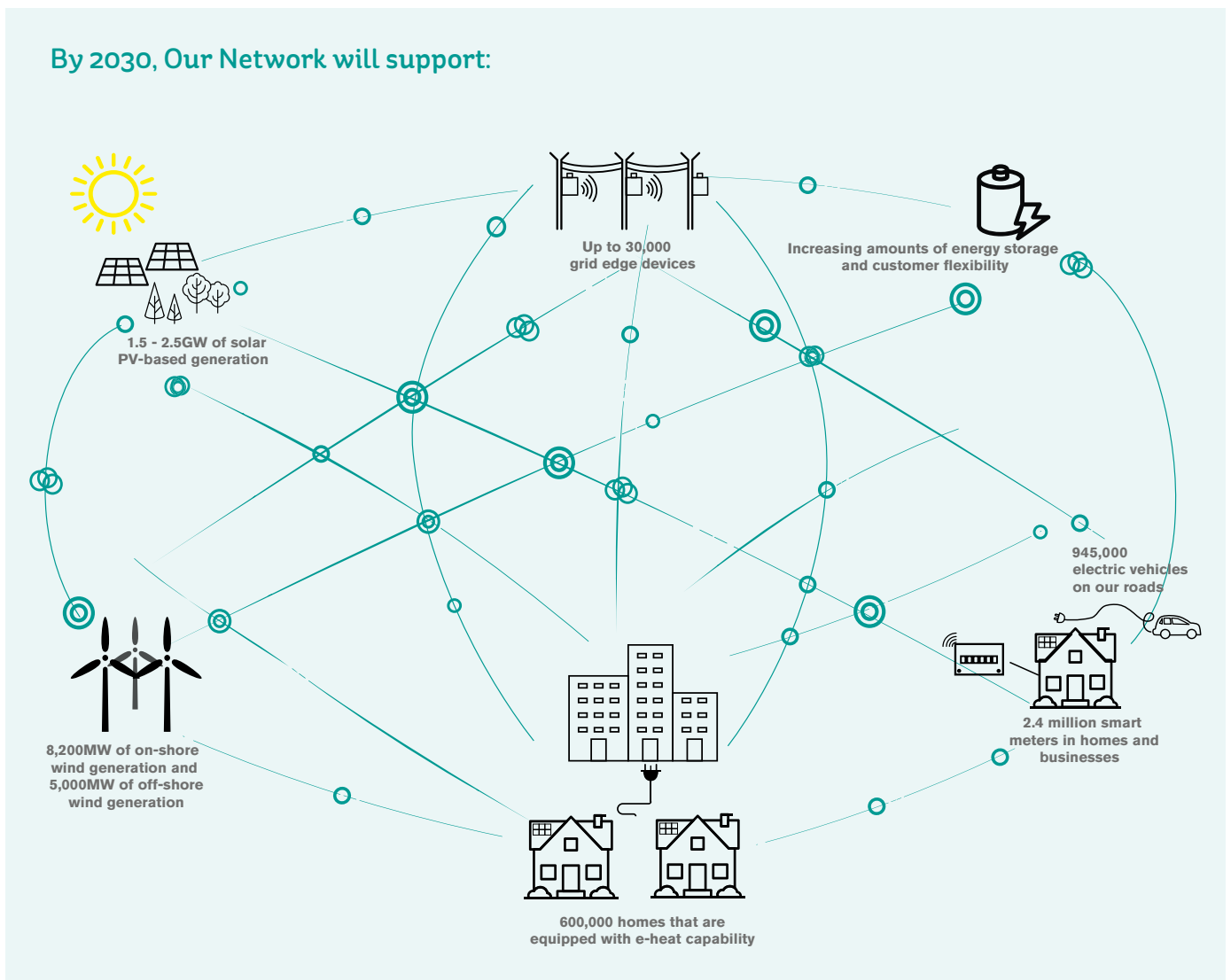
ESB Networks has published its [Strategy for the Electrification of Heat and Transport](#) following extensive collaboration and engagement with stakeholders.

We need to ensure our network is ready for the electrification revolution and, in particular, we need to re-purpose our low voltage passive network which was designed for different times to an active system to allow us to support increased electrification and the transition to a lower carbon energy system.

Our overarching electrification strategy signposts our direction of travel and is based around three main themes:

- › Ensuring ESB Networks policies are aligned with our ambitions
- › Engage, Enable and Empower our Customers to Electrify
- › Ensuring Network Readiness

### By 2030, Our Network will support:



## Smart Metering Project

During 2021 ESB Networks continued the replacement of over 2.4 million electricity meters in homes, farms and businesses with next generation smart meters to support the transition to a low carbon electricity network.

The Covid-19 lockdown in 2021 resulted in 63 days of smart meter installs lost. Despite this, ESB Networks achieved over 382,000 smart meter installations during 2021. Subject to ongoing Covid-19 guidelines, the programme plans to replace approximately 500,000 meters during 2022.

The upgrade to smart meters will bring many benefits to customers, the environment and the economy, and is a key enabler of the Government's Climate Action Plan, specifically with regard to micro-generation and the electrification of heat and transport. The following has been delivered in support of these objectives:

- › Safety of customers, staff and contractors is key to the success of the programme and enhanced safety precautions and customer journeys have been implemented as a result of Covid-19.
- › The programme continued to safely install smart meters, entering almost every county in Ireland during 2021. A total of 622,000 meters have been successfully installed by the end of December 2021. This compares to a total of 240,000 meters installed at the end of 2020.
- › ESB Networks delivered the IT upgrades required to support the delivery of smart services and products by electricity supply companies in February 2021. These products provide customers with more information on their energy usage and allow them to move some of the consumption to times of the day when electricity is cheaper. These Time of Use tariffs are available from suppliers. By the end of 2021, 37,000



### A Greener, More Sustainable Ireland

Every smart meter, will help us all become more energy efficient and environmentally friendly as we work towards a low-carbon future. Smart meters are helping facilitate the development of Ireland's growing renewable generation, smart grids and the electrification of transport and heat.



customers had availed of Half Hourly Interval data and 4,000 customers had availed of Day/Night/Peak Smart Standard Tariffs.

- › ESB Networks commenced remote meter reading of smart meters with approximately 1.5m remote readings undertaken by the end of 2021. This has resulted in a significant reduction

in estimated bills and improved billing information for customers with smart meters.

- › ESB Networks has led industry forums and working groups ensuring alignment with supplier system and process development and provided on-going support for supplier queries during 2021.

## Dingle Project

ESB Networks' Dingle Project made significant progress throughout 2021. The 12-month electric vehicle trial, where EVs were provided to 15 people across the peninsula, commenced in February and throughout the year provided an understanding of the impact of EV charging on the local network, together with insights into the charging behaviours of EV drivers. The EV Trial also highlighted how suitable modern electric vehicles are for people living in rural communities. The battery range of the vehicles used in the trial (Hyundai Kona and Nissan Leaf vehicles), when coupled with home EV chargers, minimised the instances where drivers needed to utilise public charging infrastructure to less than 0.5% of days throughout the year. The project also installed the first 5 residential scale bi-directional (vehicle to grid) electric vehicle chargers in the country and demonstrated the potential for this technology to provide power back onto the network.

All final technologies required to enable the Flexibility Trial were installed. This included the installation of air source heat pumps at the final two ambassador properties, together with the installation of home energy monitoring devices and controllers in each of the 35 properties taking part in the trials. Algorithms were designed to optimise the operation of installed technologies (Solar PV, batteries, ASHPs, EV chargers) in the economic interests of the trial participants – including moving electrical loads such as hot water heating and vehicle charging to off-peak times, charging residential batteries from excess solar and discharging battery power at peak times. Specific tests also demonstrated the potential for technologies in the home to be operated in a way to provide supporting services to the local electricity network.

Trials of technologies on the MV network to minimise duration of supply interruptions arising from transient

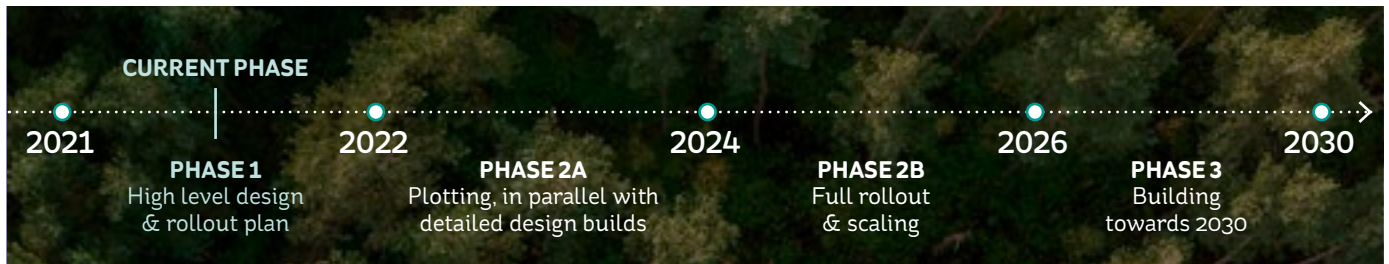
faults, such as those caused by lightning strikes continued. Other technologies to enhance fault location identification progressed. These technologies can, over time, play a part in enhancing the reliability of the network for all customers.

Social research across the Dingle Community highlighted the benefits that initiatives such as the Dingle Ambassador Programme and the EV Trial have in promoting positive energy behaviours and technology diffusion within communities. The "lived experience" of Project Ambassadors throughout the project, has provided trusted information to others across the community on the challenges and benefits of low carbon transformation. Examples of technology diffusion are starting to emerge, with the impact of the Dingle Project at an individual citizen and community transformation level, anticipated to become evident over the coming years.





## National Networks, Local Connection Programme



The decarbonisation of Irish society relies on fundamental changes to how energy is generated and consumed. To enable these changes at the right pace and the right price, we will rely on the electricity network, and we need to make the connection between how renewable energy is generated, and how we use or store it. Every Irish home, farm, community, and business is being called on to play a part. The National Network, Local Connections Programme has been established to work with, and for, customers to make this possible. ESB Networks serves, and is funded by, all electricity customers.

The National Network, Local Connections Programme (formerly known as Active System Management) aims to support both government

climate action targets and meet the needs and expectations expressed by stakeholders to deliver a network for net zero and support customers in getting more from their local connections, so they support a clean electric future. The programme will deliver by empowering customers to manage how and when they use renewable electricity in their daily lives and by rapidly adapting how we manage the existing Network for more renewable connections.

In September 2021, ESB Networks launched the National Network, Local Connections Programme consultation. Stakeholder feedback was requested on the 10 consultation documents which aligned to the overarching themes of access & awareness, technology, market design and the DSO TSO Joint Plan. In

developing these proposals, time was taken to seek and utilise stakeholder input from round tables and focus groups, as well as to research and utilise exemplar international experiences to inform the delivery plans. These delivery plans were published on the [ESB Networks website](#) in January 2022.

The programme has also published a Piloting Roadmap which will allow the programme to engage, collaborate and support stakeholders in delivering sustainable change in how we deliver a Network for net zero and empower customers to be in control of their energy use.



# 05

## CLIMATE ACTION AND SUSTAINABILITY



## Overall Carbon Emissions

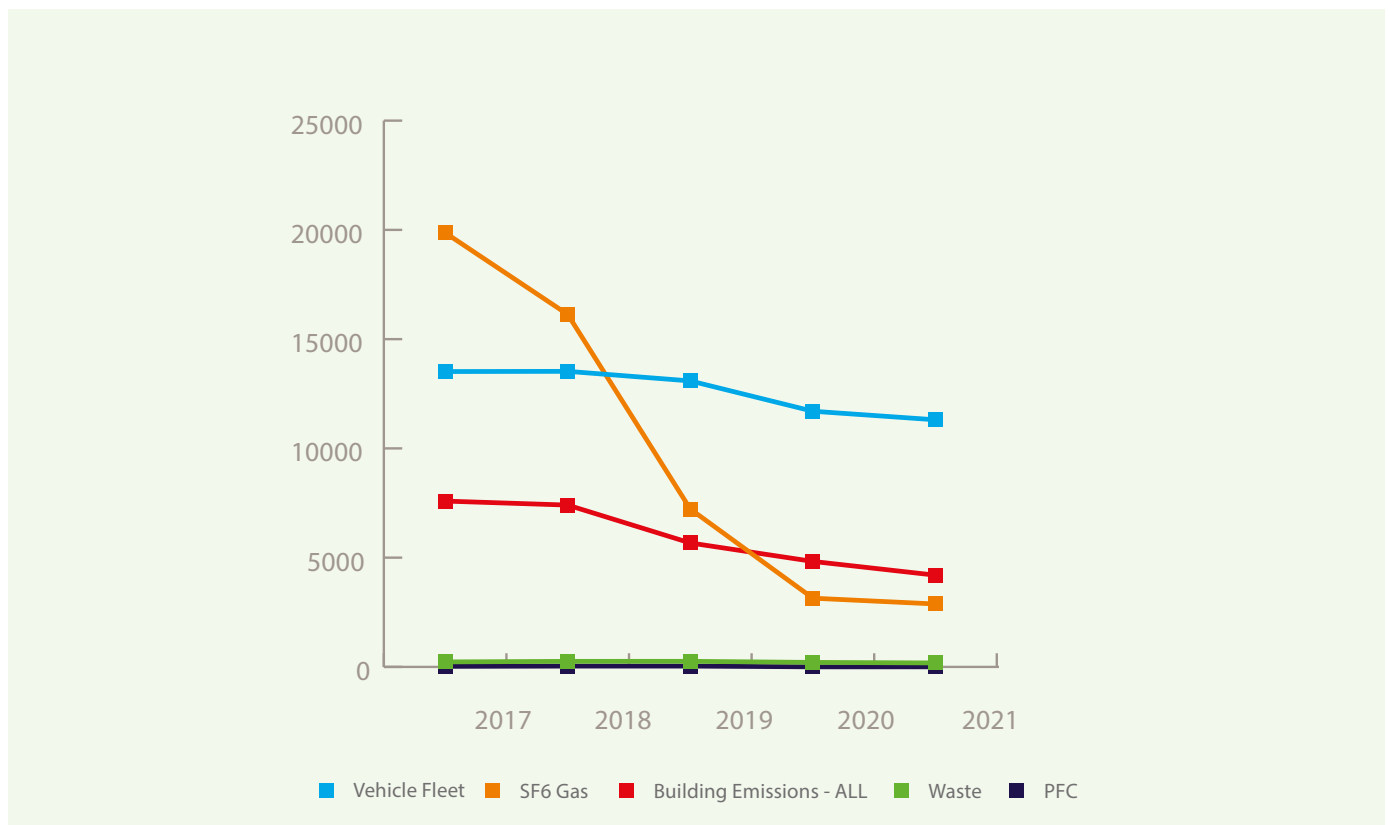
As shown in Table 1 and Figure 3, ESB Networks' carbon emissions continued their downward trend.

**Table 1 - Overall CO<sub>2</sub> emissions**

Description	Co <sub>2</sub> Tonnes Per Year				
	2017	2018	2019	2020	2021
Vehicle Fleet	13,517	13,526	13,088	11,700	11,309
SF <sub>6</sub> Gas	19,870	16,130	7,225	3,145	2,880
Building Emissions - All	7,589	7,406	5,672	5,007	4,198
Waste	229	254	256	206	182
PFC	25	38	38	2.9	3.4
<b>Total</b>	<b>41,230</b>	<b>37,354</b>	<b>26,279</b>	<b>19,881</b>	<b>18,572</b>

**Notes:**

- Overall CO<sub>2</sub> Equivalent figures compiled using relevant DEFRA and SEAI CO<sub>2</sub> Conversion Factors
- PFC is Perfluorocarbon Gas emitted as part of the Fluid Filled Cables Leakage detection process. ESB Networks began utilising a new calibrated PFC Tracer injection unit in 2021, which provides more accurate data and which has resulted in a perceived significant reduction in emissions of PFC in comparison to earlier years, which were reported conservatively. Following a final analysis in 2021, the emissions of PFC in 2020 have been restated when compared to the 2020 Environmental Performance Report.





## Energy Usage – Buildings and Fleet

Compared to 2020, electricity usage in our buildings was down by 4% and natural gas usage in our buildings was down by 24%. The Covid-19 pandemic had a significant impact on energy consumption in our buildings. From mid-March 2020 through to the end of 2021 there was a significant reduction in energy consumption at our premises which are primarily office accommodation, due to significantly reduced occupancy levels. Premises with multiple functions such as depots with workshops, garages and stores facilities showed a relatively minor reduction in energy consumption due to ongoing essential activities.

In ESB Networks, sustainable, carbon-reducing measures are a feature of all current and future building upgrade works and include lighting, insulation, energy efficient heating systems, windows, and other works.

**A reduction in energy consumption is being progressed via several initiatives as follows:**

### › LED Lighting Upgrade Project

By the end of 2021, a total of 11 major energy using locations were upgraded with internal and external LED lighting. The locations include our depots in Dundalk, Ballycoolin, Rosbrien, Portlaoise, Letterkenny, Athlone, Inchicore, Tralee, Wilton and Waterford, as well as the National Training Centre, Portlaoise.

### › Major Refurbishment Projects

Two major refurbishment projects were progressed during 2021 at our Finglas and Leopardstown Depots in Dublin. Works were completed in Finglas Depot in Q4 2021 and works at Leopardstown, are scheduled to be completed in early 2022. Both projects have a significant sustainability

improvement emphasis, which includes the replacement of older, less efficient systems with low energy lighting, energy efficient heat-pump based heating systems, the use of natural ventilation and insulation of the building envelope. Post completion of works, both buildings are expected to consume approximately 50% less energy than pre-refurbishment levels.

Vehicle fleet fuel consumption was lower by 3% in 2021 than 2020. This reduction is attributable to newer and more efficient vehicles being brought onto the fleet and an expansion of our electric vehicle fleet.

There were 72 small Electric vans on the fleet in 2021 with one medium-sized electric van also purchased. Additional medium-sized electric vans will be purchased in 2022.

Significant maintenance and firmware upgrades to 100 of our depot chargers was completed to allow the data be accessed via the back end system for Transport Energy reporting.

A Contract was awarded for up to 40 electric forklifts in 2020, and 25 of these were delivered in Q1 2021.

Energy consumption in our buildings and fleet is also typically impacted by the weather. The Met Eireann Summary Report for 2021 notes that Ireland received above average temperatures and sunshine, below average rainfall at most locations in 2021. There were three named storms and three months in which storm force winds were recorded. There were violent storm force 11 winds observed on 7th Dec during storm Barra.







## Distribution Losses/20kV Conversion Project

ESB Networks initiated a programme of converting its 10 kV network to 20 kV in the 1990's. This strategic direction was based on the studies of that time which showed that the most economical and efficient method of addressing voltage and capacity problems on the rural MV network was to convert it to 20kV.

One of the primary benefits of converting the electricity network

to 20kV is that the Thermal Capacity is increased by a factor of two and voltage drop performance is increased by a factor of four. Voltage drop is the limiting criteria that determines circuit capacity of ESB Network's typical rural networks. Consequently, circuit capacity is effectively increased by a factor of four. In effect, 20 kV is a vital enabler of demand growth that is anticipated as a result of low carbon

government initiatives in relation to e-Heat and e-Transport. In addition, as conversion to 20 kV reduces losses by a factor of 4, the reduction in Carbon Footprint that can be achieved by extending this programme is highly significant. The conversion programme continued in 2021.



06

MINIMISING OUR  
IMPACT ON THE  
ENVIRONMENT



At ESB Networks we are committed to operating our business so that we can be proud of our environmental performance. We recognise that our activities have environmental impacts and that we have a responsibility to manage these impacts in a manner that prevents pollution and provides a high level of protection for the natural environment.



## ESB Networks Policy Statement on the Environment

**ESB Networks Policy Statement on the Environment approved by the Executive Director, Network Customer Delivery, commits us to:**

- › Conduct our activities and those undertaken on our behalf in an environmentally responsible manner and in compliance with all legal and other requirements and company policies and related to the environmental aspects of our business.
- › Develop and maintain an effective environmental management system.
- › Protect the environment and prevent pollution by identifying, managing and regularly reviewing the environmental aspects and impacts associated with our business activities, services and processes.
- › Review our environmental programme regularly to ensure continual improvement in environmental performance and to provide a framework for setting and reviewing environmental objectives and targets.
- › Act responsibly in our use of natural resources.
- › Consider environmental matters in all planning and decision making.
- › Make continuous efforts to maximise the energy efficiency of our networks, buildings and fleet.
- › Minimise the production of all wastes as far as practicable, promptly recover all litter found at Networks locations and dispose of all residual wastes in a safe and responsible manner.
- › Record and respond swiftly to all environmental incidents and complaints.
- › Promote environmental and sustainability awareness among our staff, contractors and suppliers and embed these values in our investment and expenditure decisions.
- › Provide the necessary training and support to staff on environmental matters relating to our business activities.



## Environmental Management System

ESB Networks utilises an Environmental Management System (EMS) which has been externally certified to the ISO 14001 Standard since 2010. The EMS provides a framework which allows ESB Networks to systematically identify, assess, prioritise and manage the environmental risks associated with its business operations. The scope of the EMS is such that it covers all of ESB Networks' activities, services and processes associated with managing the electricity network on behalf of the Electricity Supply Board.

During 2021, ESB Networks EMS was audited twice by an external Certification Body, against the requirements of the ISO 14001:2015 standard. These Surveillance Audits sampled a range of activities within the scope of ESB Networks' certification, including:

- › Environmental Management Systems
- › Underground Fluid-Filled Cables
- › SF6 Gas Management
- › Fibre Make ready
- › Management of Woodpoles
- › HV Stations
- › Working in Environmentally Sensitive Areas
- › Managing Environmental Incidents
- › Waste Management
- › Managing Contractors

No major non-conformances were identified by the Auditors during the two external audits.





## Environmental Monitoring and associated Improvement Works

During 2021 regular ground water and surface water monitoring continued at ESB Networks national wood pole storage facility in Kiltel, Co Kildare. The consultant appointed to progress the next phase of the assessment, also undertook a series of ground investigations which took the form of trial pits, boreholes and associated sampling and analytical testing. This investigative work will inform how the site is managed going forward.

During 2021 there was engagement with the Environment Protection Agency (EPA) in relation to ESB Network's Polychlorinated Biphenyls (PCBs) Management Plan requirements and associated updates on EDEN, the Agency's online reporting system, as

required by environmental regulation.

In addition to installing bunds around all new transformer installations in HV substations, during 2021, ESB Networks retrofitted bunding to 11 existing legacy transformers and up-graded 18 legacy separators to European Norm 858 and Class 1 performance.

ESB Networks' Oil Storage and Transportation Improvement Project continued in 2021. Oil and diesel storage infrastructure upgrades were completed for HV Stations in Dublin South and at Depots in Tralee and Naas. Bunded pallets and transformer oil containment bags were procured for storage of damaged oil-filled plant and equipment, chemicals and

other identified hazardous materials. Mobile oil spill containment kits and consumables were provided at Depots, HV Stations, Fleet and Equipment Garages and in relevant ESB Networks' fleet.



## Managing the Environment During Construction

ESB Networks has continued to adapt and make continuous improvements within the challenging environment of project planning and consenting while maintaining a focus on timely and cost-effective delivery of projects.

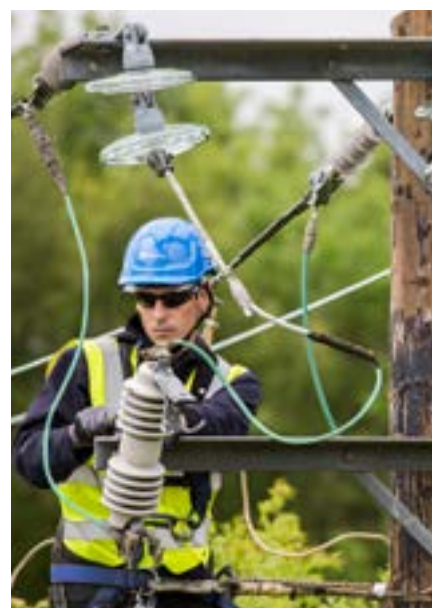
At planning stage multi-disciplinary technical teams work to develop projects and site-appropriate construction methodologies in order to deliver connections to customers while protecting sensitive receiving environments. Detailed construction packs, capturing all of the requirements of planning consents, are provided to our external contractors who are increasingly important to project delivery. Project support through document review processes (e.g., inputs to Construction Environment Management Plans, Traffic Management Plans, Waste Management Plans, etc.) is key to ensuring delivery on planning

permission condition requirements. Oversight of construction projects is achieved through the appointment of specialists such as Project Ecologists, Ecological Clerks of Works, Project Archaeologists, etc.

In 2021 ESB Networks provided the Waste Enforcement Regional Lead Authorities (WERLA) with information on ESB Networks' Construction Projects that had the potential to generate Construction and Demolition Wastes. WERLA is responsible for enforcement of waste legislation and ensuring the proper management of construction and demolition waste nationally.

This information is communicated by WERLA to Local Authority waste enforcement officers across the country who, in turn, undertake inspections in relation to the proper management of

waste and materials at sites. This work forms part of the strategic approach to the management of construction and demolition waste.



## Biodiversity

ESB Networks is cognisant of the importance of biodiversity in the Irish landscape, and to ensure its activities are managed in a sustainable manner in relation to biodiversity. It is also aware of the requirements to identify potential impacts on biodiversity with the aim of avoiding or mitigating these impacts, and where feasible, work to enhance biodiversity.

A number of ESB Networks documents have been developed to advise staff on biodiversity matters, including procedures for designing and undertaking work in designated sites and the identification of and response to invasive species in proximity to ESB Networks infrastructure. 2021 saw the continuation of a review process of these documents to update them in line with recent guidance and legislation.

ESB Networks staff regularly considers various biodiversity-related issues, including screening for Appropriate Assessment, invasive species response and management, and the implementation of appropriate mitigation measures.

The ecology staff also deliver training to ESB Networks staff in relation to biodiversity and ecology-related legislation.

As a key partner in the second All-Ireland Pollinator Plan for 2021-2025 ESB Networks has committed to take up opportunities for more pollinator-friendly management of landscapes within its property portfolio, where this fits with the needs of safety, business operations and property management. During 2021, ESB Networks undertook a selection process to identify a number of trial sites for pollinator actions, including the Networks Training Centre in Portlaoise; targeted measures are to be rolled out during 2022.



## SF6 Gas Management

Sulphur hexafluoride (SF6) is used in a significant portion of ESB Network’s high-voltage switchgear assets on the transmission and distribution networks.

It is used because of its very high electrical insulating properties which facilitate efficient and safe operation of the switchgear. Emissions rates for SF6 gas are reported to the Environmental Protection Agency (EPA) on an annual basis.

In 2021, 126.3 kg of SF6 was emitted due to equipment faults, representing 0.06% of the total installed inventory of SF6. The comparable 2020 leak quantity was 137.96 kg, representing 0.08% of inventory. This represents an 8% reduction in annual emissions for ESB Networks and continues the trend towards net zero, in line with leading European utilities. This overall downward trajectory of SF6 emissions over the last five years can be seen in Figure 4.

**ESB Networks complies with EU Regulation 517/2014 in relation to SF6. This compliance is enabled by:**

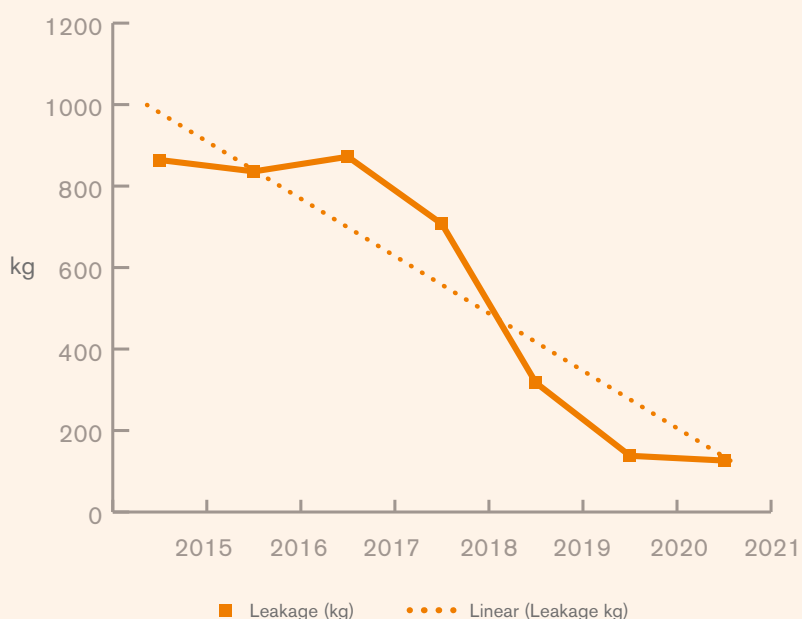
› Implementation of revised SF6 policy and procedures across the ESB Networks Business, addressing:

- Labelling
- Transport
- Gas Handling
- Recording & Reporting
- Leak Response
- Training & Certification

- › Continued training and certification for those involved in handling SF6.
- › Technology Improvements related to mobile app-based recording of SF6 gas usage.
- › Further work to improve accuracy of SF6 Gas Inventory across all assets.

- › Enhanced monitoring/closeout of SF6 Leaks on a systematic basis.
- › Renewed nationwide communication of key requirements of EU Reg 517/2014 as part of rollout of revised procedures.
- › Maintaining a critical understanding of market development, regulatory environment and available SF6-free technology.

**Figure 4: SF6 Gas Leakage Trends 2015-2021**



## Engagement with statutory authorities & associated reporting protocols

ESB Networks engages with a number of key stakeholders, in relation to SF6 emissions reporting in its High Voltage Stations, namely Local Authorities and the Environmental Protection Agency (EPA).

### LOCAL AUTHORITIES

Where a leak has been identified on a piece of equipment in a High Voltage Station, ESB Networks reports this leak to the relevant local authority. This reporting requirement is implemented in accordance with the Air Pollution Act (1987).

### ENVIRONMENTAL PROTECTION AGENCY

ESB Networks reports on an annual basis to EPA on its cumulative SF6 emissions for the previous year on/ before 31st of March each year. This reporting is undertaken as part of ESB Networks responsibilities in relation to the Pollutant Release and Transfer Register Regulations (2011).

ESB Networks reports all SF6 emissions to the associated license holder where there are emissions from ESB Networks owned equipment on EPA licensed sites.

During 2021, ESB Networks held a number of meetings with the EPA and provided the EPA with a detailed inventory of all switchgear compartments that contain SF6.

### PROCESS IMPROVEMENTS

**Technology Utilisation** – all SF6 handling & recording is now implemented via a mobile device based SF6 App. This simplifies site recording and enables prompt and accurate reporting of gas utilisation. This App was updated, and relevant staff were re-trained during 2021.

**Policy & Procedures Enhancement** – documentation has been further reviewed to ensure consistent and concise information is available for staff, thus embedding the processes to drive ongoing awareness and compliance in the business with regard to SF6 regulations.

**Rationalisation of existing SF6 gas quantities** – surplus SF6 was returned to the manufacturer during 2021.

Recovered SF6 was also used in some new projects, negating the need to buy additional SF6 for these projects.

### SF6 Leak Monitoring & Repair

**Programme Review** – enhanced procedures and IT Tools are in place to ensure prompt reporting, capture and closeout of SF6 leaks through a robust process involving Network Assets, Environmental and frontline High Voltage Station staff.

### SF6 PROSECUTION

In July 2020 ESB Networks DAC was served with notice of a prosecution by the EPA. The summons sets out six alleged offences relating to the failure of ESB Networks DAC to carry out repair without undue delay following detection of leaks of fluorinated greenhouse gases (SF6) in switchgear in ESB Networks' sub-station in Carrowdotia, Co Clare during the period June 2018 to June 2019. The relevant equipment was decommissioned prior to the commencement of this prosecution and it no longer contains SF6 gas. The Summons was initially returnable to the District Court in November 2020. Due to Covid -19 restrictions, the hearing of this case has been put back to June 30th 2022.



## Fluid-Filled Cables

During 2021, 6,281 litres of cable insulating fluid leaked from ESB’s High Voltage Cable network (35 litres per km). This is an increase of 1,059 litres on the 2020 fluid leakage figure of 5,222 litres.

The breakdown of the fluid leaks was as follows:

- › 220 kV Cable Network = 1,594 litres
- › 110 kV Cable Network = 2,897 litres
- › 38 kV Cable Network = 1,765 litres

ESB Network’s Company Standard, “Management of Fluid Filled Cables” set a target maximum cable leakage volume of 5,000 litres for 2021. This was a reduction of 3,000 litres on the target for 2020.

Our actual 2021 leakage figure represents an increase of approximately 20 % on our 2020 total leakage. The overall trend for the past 6 years is downwards, however (see Figure 5).

New Local Authority notifiable leaks that occurred on the **38 kV Cable Network** in 2021:

- › Dodder Road – Templeogue

New Local Authority notifiable leaks that occurred on the **110 kV Cable Network** in 2021:

- › Francis Street – Inchicore

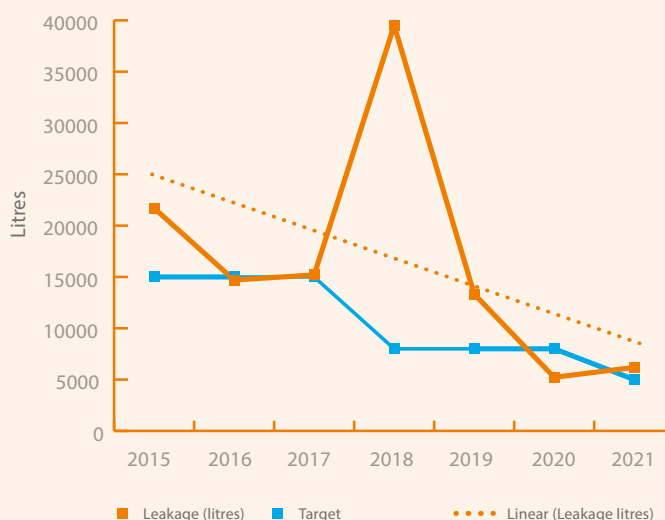
New Local Authority notifiable leaks that occurred on the **220 kV Cable Network** in 2021:

- › Inchicore – Poolbeg No.1

Circuits with repaired leaks in 2021 were:

- › Carrickmines – Poolbeg
- › Francis Street – Inchicore

Figure 5: Fluid-filled Cables Leakage Trends 2015-2021



## Fluid Filled Cables - Environmental Assessments

In 2019, ESB Networks engaged the services of five companies with specialist expertise to undertake a risk-based assessment of the potential risks arising from 68 historic FFC leaks. In line with best practice for non EPA-licensed sites, a risk-based approach was adopted which was consistent with the EPA’s “Guidance on the Management of Contaminated Land and Groundwater at Environmental Protection Agency Licensed Sites”. This addresses the requirements of relevant environmental legislation and this approach was deemed appropriate by the EPA in their February 2020 report on this matter.

In 2020, ESB Networks completed Preliminary Site Assessment (PSA) reports for all 68 cable leak sites. The consultant’s PSA recommendations for 22 of these sites is that no further site assessment is necessary and no remediation is required. For the remaining sites, the consultant recommended further site investigations, for example, trial pits and slit trench excavations at or around a leak site to facilitate

collection of relevant samples. All leak location information is now published on our website. The outcomes of preliminary site assessments were discussed in detail with the relevant Local Authority, in line with relevant protocols, to ensure transparency and clarity on recommendations and plans. All completed PSA reports are also published on our [website](#).

In 2021, further works were progressed on a number of sites as we continue to progress all to a conclusion with the relevant authorities. ESB Networks issued Generic Quantitative Risk Assessments (GQRAs) for 5 sites that had detailed site assessments completed to the relevant Local Authority. All 5 reports recommended no further site assessments or remediation and after consultation with the Local Authority involved, we formally closed out these site assessments. As further detailed site assessments are completed and further GQRAs developed, ESB Networks will continue to update Local Authorities on our progress in these assessments.

## Fluid Filled Cables - Incident Management

Since 2019, ESB Networks has FFC incident protocols in place dealing with both historic and current FFC leaks with relevant Local Authorities. The protocols ensure all relevant authorities are notified of incidents as they arise and are kept up to date with incident response. Regular communication is maintained with relevant Local Authorities to ensure close collaboration regarding road opening licences, drainage maps and other aspects relevant to our work in cable leak location, environmental assessment, and repair.

We continue to have experienced Network Technicians specially trained in FFC maintenance, leak identification

and repair techniques to ensure that we manage these incidents promptly when they occur. ESB Networks' tracer detection equipment has significantly improved our ability to identify leak sites and implement repairs. We continue to implement this state-of-the-art leak detection methodology along with other leak detection methods as required.

ESB Networks' leakage rate in 2021 was approximately 35 litres per kilometre. The current leakage rate equates to 0.6 % of the total installed cable fluid volume per annum, equivalent to or lower than the leakage rates reported by a number of peer network companies in other countries. The total fluid leakage

in any year can depend upon several factors associated with the cables' condition, route and location.



Damage to fluid-filled cable caused by house building contractor

## Fluid Filled Cables - Replacement Programme

Recognising the environmental challenges in operating and maintaining FFCs, ESB Networks started a fluid-filled cable replacement programme in 2005. So far, 20 % of FFCs have been replaced, removing the source of 40 % of the previous cable fluid leaks from the system. At present, there is approximately 177 km of FFCs on the transmission and distribution electricity networks. We have a number of active FFC replacement projects at construction stage and additional projects at route selection stage.

Such major infrastructural projects involve:

- › **Scheduled outages, for which businesses and families adjacent to these works must be informed and given adequate notice.**
- › **Securing temporary road opening licences.**
- › **Traversing third party infrastructure, services and major road, rail, waterway crossings.**

- › **Temporary extended road closures.**
- › **Significant trench excavations for new plastic insulated cable and cable replacement.**
- › **Jointing works.**

The projects will be undertaken on a phased basis in populated urban areas with significant traffic volumes. Ongoing engagement with relevant stakeholders is vital to ensure efficient and successful delivery of these cable replacement projects.

ESB Networks has now committed to an accelerated investment programme with the Commission for Regulation of Utilities (CRU). An environmental assessment informs both the schedule and the timing of individual cable replacements.

As part of the Price Review Five (PR5) determination, CRU approved distribution and transmission FFC Replacement projects. In 2021, ESB Networks successfully secured

capital approval for all DSO PR5 FFC Replacement projects. While there are a number of factors that determine how long it takes to replace a full FFC route, our current expectations are to replace approximately 39 km of DSO FFC routes in PR5. A significant number of TSO FFC route replacements will have achieved capital approval in late PR5 also. Due to the significant circuit lengths on most of the TSO FFC routes involved, full replacement is not expected to be completed until PR6 (2026-2030) with ESB Networks project work commencing from 2024. The remaining FFCs are planned to be replaced over subsequent Price Reviews subject to CRU approval.



## Waste Management

During 2021, suitable arrangements were maintained and further enhanced where appropriate, for the compliant and effective management of waste arising at depots, stores, HV stations and sites nationwide. An appropriate infrastructure exists to facilitate the segregation and safe temporary storage of waste pending its removal for recycling, treatment, or disposal. ESB Networks works with all waste management contractors to ensure that appropriate permits and licences are in place.

ESB Networks is committed to becoming a leading company in the area of sustainability. The effective management of waste is seen as a key environmental management objective in supporting this strategy.

During 2021, significant progress continued in this regard, some of the key achievements/initiatives being:

- › Ongoing effective management of contracts for non-hazardous and hazardous waste management service provision, scrap metal, oil filled equipment, and empty cable drum disposal nationwide.
- › Continued targeted management reporting on waste volumes and costs to support recycling and landfill diversion of waste.
- › Landfill diversion rate of 99% achieved for overall waste generated when service provider post collection recovery/recycling is taken into account.
- › Depot recycling rate of 68% achieved for municipal solid waste. The overall waste recycling rate for the year which includes waste collected from technical facilities, was 71%.
- › Standardised office waste management systems maintained to facilitate the proper segregation of associated wastes.
- › Continued focus on raising awareness regarding waste management legislative requirements, recycling targets, and the need to maximise landfill diversion of waste.
- › Memorandums of Understanding in place with Dublin City Council, South Dublin City Council and Dun Laoghaire-Rathdown County Council on the management of illegal dumping of waste, litter, and graffiti at unoccupied ESB Network's facilities.
- › Engagement of ESB Network's appointed waste management companies as necessary to compliantly clean up and dispose of waste illegally dumped at ESB Network's facilities.



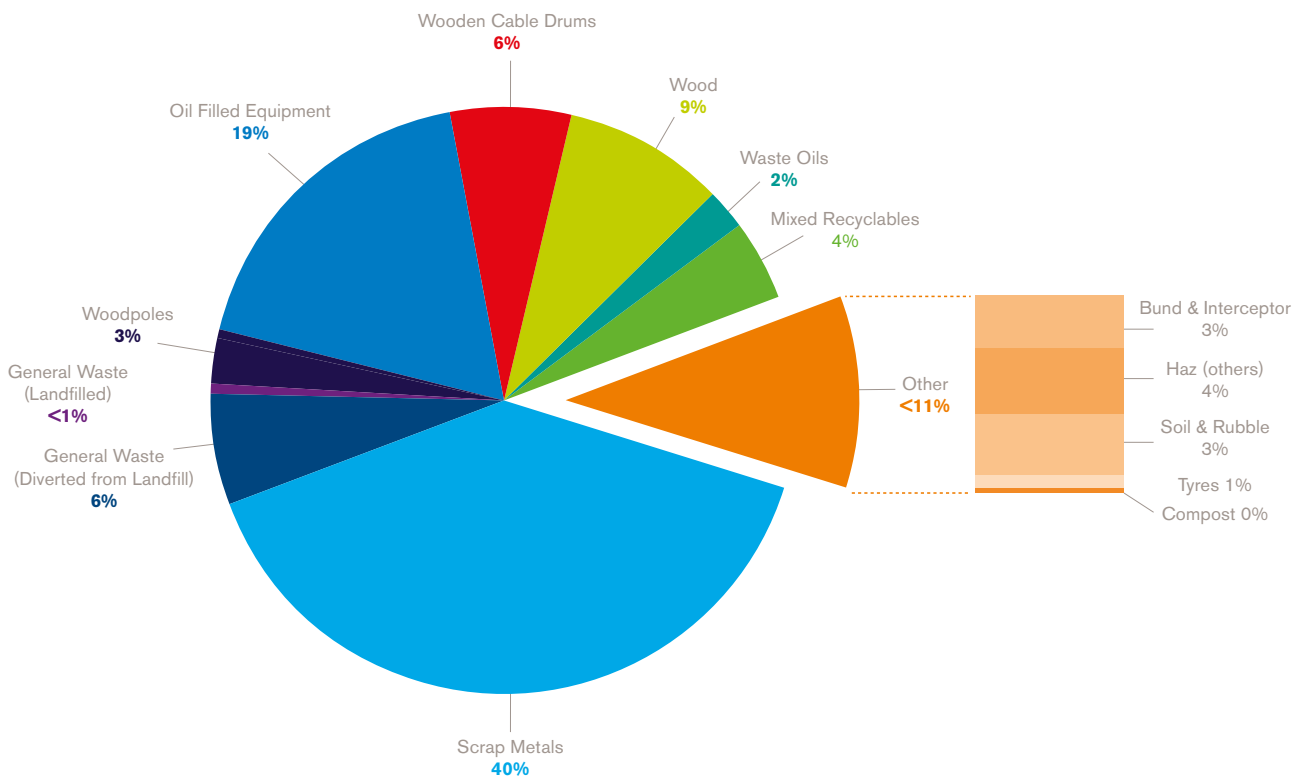
## Waste Statistics (classification and quantities)

In 2021, ESB Networks generated 7,818 tonnes of waste from its business operations, a 9% decrease when compared to 2020. Figure 5 presents a breakdown of the various waste categories. Statistics are compiled based on management information provided by all contracted waste service providers.

General Waste accounted for a total of 7% of all waste generated. However, due to the additional processing, recovery and recycling of waste materials undertaken by ESBN's contracted waste service providers at their facilities, the vast

majority of general waste is diverted from landfill, thereby reducing the overall waste sent to landfill to less than 1% of the total amount of waste generated by ESBN during its business operations.

Figure 6 – Breakdown of waste and retired material



- Notes:
- Statistics do not include construction and demolition waste generated from major construction projects where appropriately permitted and licenced operators are appointed for waste disposal as part of overall project management.
  - Scrap metals, wood poles, oil filled equipment, and wooden cable drums, accounted for 68% of all waste collected during 2021.



Table 2 - Compares tonnage quantities for the principal waste categories for 2019, 2020 and 2021.

Waste Stream / Retired Material	Tonnes Per Year		
	2019	2020	2021
Scrap Metals	2,641	2,913	3,087
Woodpoles	167	1,220	196
Oil Filled Equipment	1,523	1,111	1,460
Wooden Cable Drums	668	789	505
Wood	599	762	711
General Waste (Diverted from Landfill)	416	511	487
General Waste (Landfilled)	133	58	48
Waste Oils	259	407	169
Mixed Recyclables	350	313	338
Wasterwater Bund & Inceptor Waste	252	210	218
Hazardous Waste (Others)	136	125	274
Soil & Rubble	233	80	253
Tyres	46	48	53
Compost	50	33	20
<b>Total</b>	<b>7,473</b>	<b>8,580</b>	<b>7,818</b>

**Note:**

**Hazardous Waste Others includes:** Creosote Contaminated Consumables, Contaminated Soil, Oil Filters, Solid Oily Waste, Batteries, WEEE, Chemicals, Paints, Empty Paint Containers, Mixed Fuels, Resins, Silica Gel, Inorganic and Organic Waste

# Waste Disposal Trends














-  **Woodpoles**
-  **Wooden Cable Drums**
-  **Wood**
-  **General Waste**
-  **Waste Oils**
-  **Compost**
-  **Scrap Metals**
-  **Oil Filled Equipment**
-  **Mixed Recyclables**
-  **Wastewater, Bund & Interceptor Waste**
-  **Hazardous Waste (Others)**
-  **Soil & Rubble**
-  **Tyres**

Table 3 - Environmental Incidents

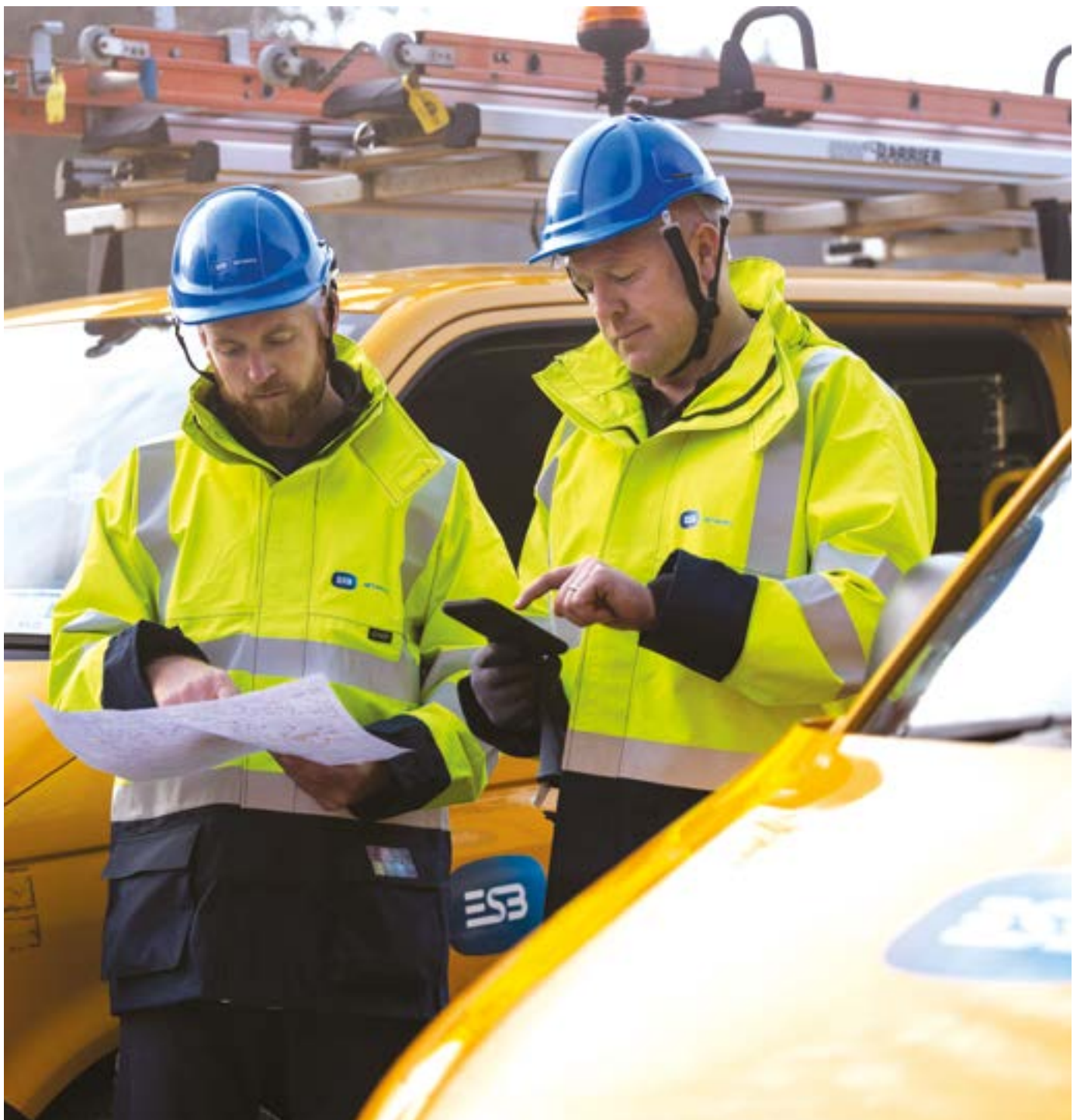
Reported Environmental Incidents	Incidents per year		
	2019	2020	2021
Air Emissions/breaches (excluding F - gases)	1	-	-
Dust nuisance	-	-	-
Ecology, Flora and Fauna (Including invasive species)	5	6	15
Environmental Complaint (External)	-	-	2
Environmental monitoring/abatement equipment malfunction or breakdown	-	1	-
Explosion	-	-	-
F - Gas leak/storage/handling (excluding SF6)	-	-	1
Flooding (Environmental impact)	4	-	1
Fluid filled cable leaks	-	-	-
Impact on Conservation area (SACs/SPAs/NHAs) and national monument/heritage sites.	10	14	7
Land - Contaminated land or soil	1	1	-
Land - General land damage	-	-	-
Leaks/uncontrolled discharges/spillages of chemicals, oils or fuels	32	21	39
Noise nuisance/emissions	-	5	2
Odour	2	-	-
SF6 gas leak/handling/storage	186	112	81
Timber Cutting	-	-	-
Visual (LitterGraffiti) (3rd Party)	11	1	1
Waste - Unauthorised disposal (3rd Party)	22	6	5
Waste management (Internal)	2	2	4
Water & Discharges - Emissions/breaches/leaks to water bodies	1	-	4
<b>Totals</b>	<b>276</b>	<b>170</b>	<b>165</b>

Note:  
In 2021, ESB updated the way in which it categorises environmental incidents. The incident categories listed in previous reports differ from those in Table 3. The environmental incidents from 2019 and 2020 have been accommodated within the updated incident categories within this report to facilitate comparison across the years.

ESB Networks uses appropriately licenced and permitted environmental incident response contractors, and environmental consultant services, and liaises with relevant regulatory authorities in connection with

environmental incident management as necessary. Spill response training is delivered to staff engaged in oil and oil-filled equipment handling and a range of related ESB Networks' Guidelines have been developed and are available.

Spill kits and associated consumables are also available in depots, stores, HV stations and in fleet and equipment vehicles as required.







NETWORKS

**ESB NETWORKS**

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

Tel 1800 372 757 or +353 21 2386555  
Email [esbnetworks@esb.ie](mailto:esbnetworks@esb.ie)

**[esbnetworks.ie](http://esbnetworks.ie)**