# SP Transmission Annual Environmental Report 2022/2023







**Executive Summary** A message from our CEO Sustainable Business Strategy **Commitments Update** Performance Dashboard Key Focus Areas:

> Sustainable Supply Chain 👍 Climate Action Pollution Prevention Action for Nature Circular Economy

Data and Assurance Performance Tables Appendix – Commitments Update



# **Executive Summary**

This SP Transmission (SPT) Annual Environmental Report for regulatory year 2022-23 provides an overview of our performance against key metrics and our ongoing progress to deliver our RIIO-T2 Environmental Action Plan commitments. It sets out our key activities to progress these commitments and gives examples of how we are supporting the societal transition to a low carbon economy whilst ensuring our work delivers positive impacts on the environment.

# Who we are

SP Transmission plc is a wholly owned subsidiary of SP Energy Networks. We are responsible for the transmission of electricity in central and southern Scotland. We take electricity generated from power stations, windfarms and various other utilities and transport it through our vast transmission network, consisting of over 3700 kilometres of overhead lines and under 800 kilometres of underground cables. We have 160 substations and in excess of 100 grid supply points in our network where we take the high voltage supply and reduce it to the low voltage needed for use in the home.

Our system is crucial to the delivery of the Government's renewable energy objectives due to its location in an area of outstanding renewable resource and our geographical location. We have a unique role in connecting renewable generation and bulk transfer of renewable energy from Scotland into England & Wales benefiting stakeholders well beyond our licence area.

**3,700+ kilometres** of overhead lines

under 800 kilometres of underground cables



### Scottish Hydro-Electric Transmission

### SP Transmission

National Grid Electricity Transmission

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# A message from our CEO

I'm delighted to introduce this year's RIIO-T2 Annual Environmental Report. This is a pivotal moment for our environment and the actions we take will make a huge difference. At SP Energy Networks we strive to be a fully sustainable networks business for people and the planet.

As an operator of critical national infrastructure, we must carefully balance our responsibilities. That means maintaining a safe and reliable network, ensuring that the network can facilitate widespread electrification and deliver positive outcomes for the environments and communities in which we operate.

As we enter the third year of this price control period, we are working hard to progress our environmental commitments and demonstrate that we are leading the way to Net Zero Carbon. This Annual Environmental Report highlights the progress across our Transmission business.

Reducing our carbon footprint has been a key focus across our business. As an important step towards our ambitious Science Based Target, we have already reduced our carbon footprint by 54% across scope 1 and 2 emissions (excl. Losses) compared to our 2013/14 baseline. The greatest single contribution to this improvement in 2022/23 has been the successful intervention performed on substation equipment at Torness power station which prevented 115kg of SF<sub>6</sub> being released into the environment. The reduction in  $CO_2$  emissions is equivalent to energising 330 homes for one year.

In the past year, we have supported wider energy system decarbonisation by connecting 534MW of renewable generation to our transmission network. For example, our recently commenced East Coast Onshore Upgrade Project, part of our RIIO-T2 programme, will work in collaboration with other transmission operators to significantly upgrade overhead lines and associated infrastructure enabling increased electricity capacity to be transported to load centres in the South of the UK in support of the low carbon transition.

We are acutely aware that we can't decarbonise without bringing our supply chain along with us. That's why we have been working closely with the Supply Chain Sustainability School to support our suppliers and make sure they have the necessary tools to begin mapping out their own route to Net Zero Carbon. Already, 31% of our priority transmission suppliers are registered members of the Supply Chain Sustainability School. I am proud of the positive impact we are making, and I want our staff to continue to feel empowered by working for a company that takes proactive steps to act on global and local issues. We want to be the trusted partner our communities know have the best interests of people and the planet at heart. We are only at the start of the long journey to Net Zero Carbon, but we will be continuing to work in collaboration with all our partners, while taking bold actions to create a better future for all.



**Vicky Kelsall** CEO, SP Energy Networks

# SP Energy Networks Sustainable Business Strategy

The SP Transmission Network sits at the heart of the UK's Net Zero Carbon transition. As a transmission network operator, we have a clear role to play in developing and maintaining the smart network of the future, which will facilitate the decarbonisation of our society.

Our Sustainable Business Strategy has been developed through several years of collaboration with our stakeholders and is regularly updated in response to internal and external policy developments in order to ensure that our business continues to manage the transition to a low carbon energy system over short, medium and long-term timelines.

#### **Sustainability Principles**

While delivering the electricity network we commit to being:



These principles flow from our SPEN corporate pillars and are at the forefront of our vision, mission and goals.

Develop a safe, secure, and resilient network that's ready for Net Zero Be the trusted partner for our customers communities & stakeholders

Innovate to ready our business for a digital and sustainable future

#### Alignment with The United Nations' Sustainable Development Goals

As part of the global Iberdrola group, we align to the United Nations Sustainable Development Goals (SDGs) and actively use the SDGs to guide the development of our business plans and strategies.

As an electricity network operator, our core reason for being focusses on enabling the connection of clean energy generation to our network and transporting this to end users. Therefore, our greatest contributions are to goals:



However, when considering the breadth of our activities on areas such as net zero carbon work and skills, network construction and maintenance, working collaboratively, diversity and inclusion, digitalisation and customer service we make a significant contribution, directly or indirectly, to the wider SDGs. Through internal and external collaboration, we mapped the SDGs to our key sustainability areas of focus, as can be seen in the diagram below.



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# **Commitments update**

We have numerous, ambitious RIIO-T2 commitments which span across our Key Focus Areas which are summarised below. The progress towards meeting these commitments is highlighted within the relevant sections of this report and more details can be found in the Commitments Update appendix <u>HERE</u>.



Key Focus Area	Commitment	RAG	Status Update
Environmental Management	Achieving the Sustainability step-change		Progress has been made on all commitments and we are confident that v
Supply Chain Sustainability	Supply Chain Sustainability		Our Supply Chain commitments have progressed well this year with 47% meeting our enhanced standards.
Climate Action	Strategic Carbon Reduction		We continue to perform well against our Business Carbon Footprint Targe baseline.
Climate Action	Business Carbon Footprint Scope 1		Transition of operational fleet is behind however we still expect to deliver t period
Climate Action	Business Carbon Footprint Scope 2		We are continuing to deliver our commitment of buildings energy use and Delivery of our substation refurbishment programme is due to begin late 2
Climate Action	Business Carbon Footprint Scope 3		Our scope 3 methodology has been reviewed by Planet Mark and we are commitments.
Climate Action	Climate Change Resilience		All of our Flood Risk Assessments have been completed and remediation commence during 2023.
Climate Action	Net Zero Transition		Our Net Zero Fund is on track with the first round of community workshop round of workshops, feasibility support and funding due in 2023/24.
Pollution Prevention	Pollution Prevention		We continue to progress this group of commitments and are on track to d
Action For Nature	Land & Biodiversity		We are working in collaboration with the other Scottish electricity operation companies on the development and implementation of a Natural Capital unexpected delays in procuring the tool however we still expect to deliver RIIO-T2. Non-Operational Land CVP is behind due to resourcing issues the This project will resume in Year 3.
Circular Economy	Sustainable Resource Use		There have been delays in the area due to the lack of data available from a We have included new requirements within contracts to gather this data a support to review our material use.



we will deliver these during RIIO-T2

of our supply chain by value now

ets with a 54% reduction for a 2013/14

these commitments during the T2

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e on track to deliver these

n works at 4 sites are due to

os delivered in 2022/23 and the next

deliver on schedule.

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our suppliers and contractors. and have sourced expert external

# **Performance Dashboard**

## **Climate Action**

Long-term GHG Long-term GHG reduction target Scopes 1.2.3 by **2035** accredited by SBTi

**₩35%** 

Reduction in business carbon footprint (excl. losses) from last year

• 45%

**Reduction in** SF<sub>6</sub> emission from last year

Years of continuous certification to the Planet Mark

534  $(\uparrow)$ 

MW Low Carbon Generation **Connections made** this year



investment in innovation supporting decarbonisation

## **Circular Economy**

♦ 93%

Waste diverted from landfill

## **Sustainable Society**

16

**Community Net Zero Carbon** workshops delivered since November 2022

↓ 16.5%

Gender pay gap

Stakeholder 19.4/10 Satisfaction Score

Green arrow Red arrow Up arrow

Down arrow

improvement from prior year deterioration from prior year increase in value reduction in value

SUPPLY CHAIN SUSTAINABILITY Supply Chain

 $(\uparrow)$ 

SCOTTISH **BUSINESS** COLLABORATION

Management



## **Supply Chain Sustainability**



**Sustainability** School partner



Suppliers progressing towards enhanced environmental standards



Development partner for SBCC

# **Environmental**

#### ISO14001 EMS certification

# Delivering a more sustainable network

Our vision is to be a sustainable networks business. We embed the principles of sustainability in our decision-making. We work with our stakeholders to efficiently manage and develop our networks in support of the low carbon transition, and to achieve neutral or positive environmental and social impacts. Our actions to become a sustainable network operator will drive our supply chain and support our customers and communities to become more sustainable. During RIIO-T2 we will continue to drive industry-wide collaboration for the benefit of all customers and will keep engaging our environmental stakeholders through our Sustainability Stakeholder Working Group.





# Achieving the sustainability step-change

We take a systematic approach to reducing our environmental impacts by using a documented Environmental Management System (EMS). At its core is the risk assessment process we use to decide how the environmental impacts of our activities are prioritised for action. This system has been externally certified for over a decade to ISO14001 and is fully embedded in our business processes.

#### Status update

Within our Environmental Action Plan we committed to collaborating with SEPA on a Sustainable Growth Agreement, this was a voluntary formal agreement between SEPA and organisations that focus on practical action to deliver environmental positive outcomes. This commitment was delayed after SEPA suffered a cyber-attack in late 2020. SEPA have now confirmed that they will not be undertaking any SGA development work during 2023/24 as they are reviewing how they work in partnerships with regulated businesses such as our own.

In the other areas we have embedded Initial Environmental Sustainability Reviews into our initial design process and reviewed during the second year of RIIO-T2 to ensure these measures are robust and deliver maximum impact within projects. These provide an early assessment of potential environmental and sustainability risks and opportunities associated with each identified network need. We have reviewed and amended internal approval papers to include an assessment of carbon, biodiversity and natural capital. We are developing measurement tools to better inform these initial assessments. We are continuing to collect and analyse the data that we receive and have been working the supply chain sustainability school to provide training to our staff, contractors and supply chain.



# Commitments

We will maintain and continually improve our ISO14001 certified Environmental Management System to achieve 'beyond compliance' environmental performance.

We will embed a process for Initial Environmental and Sustainability Reviews (IESRs) for all relevant projects, to identify potential environmental issues and opportunities at the earliest stage.

We will improve the quality of environmental data collected and analysed at all stages of the asset lifecycle, investing in enhanced geospatial systems and formalising data sharing collaborations with key stakeholders.

We will continue to ensure that our staff, contractors and supply chain have the skills and knowledge to move beyond compliance and achieve our Sustainability Goals.

We will continue to drive industry-wide collaboration in RIIO-T2 for the benefit of all customers.

We will continue to engage our key environmental stakeholders via our Sustainable Stakeholder Working Group (SSWG), ensuring progress via collaboration activities arising from this engagement.

We will continue to provide transparent reporting of our environmental and sustainability performance publishing an annual report of our progress against all environmental and sustainability commitments (as detailed in our Environmental Action Plan in Annex 7) in line with metrics and a format developed in collaboration with the other TOs.

Year	2021-2022	2022	
ISO14001:2015 certification	Yes	Yes	





# **Supply Chain Sustainability**

Having a strong relationship with our supply chain is essential for the successful delivery of our sustainability plans. Our diverse suppliers offer various services throughout the entire lifecycle of assets, from design to disposal. We strive to collaborate with our suppliers not only to ensure safe, efficient, and compliant works but also to minimize environmental impacts, establish enhanced environmental standards, and promote industry-wide environmental best practice. We are fortunate to have a wide range of expertise and services within our supply chain.

#### **Status update**

This year we have established supply chain performance metrics to evaluate waste reduction, recycled content, and Scope 3 emissions. We use the GoSupply Platform, where we assess the environmental, social and governance (ESG) compliance of our suppliers via a series of scored questions, SmartWaste which is an environmental reporting tool, and Supply Chain Sustainability School, a learning platform, to evaluate our suppliers' sustainability performance. To track compliance with environmental requirements and performance metric targets, we implemented an internal contract management process and reporting system. We operate a disaggregated procurement model and from the beginning of RIIO-T2 have placed contracts with over 550 suppliers and contractors. By value, 47% of our suppliers are compliant with our enhanced environmental requirements and we are on track to deliver our commitment of 80% by value by the end of RIIO-T2.

## **Case study**

Empowering small and medium-sized enterprises (SMEs) through their net zero carbon journey.

Eight large Scottish business, including ScottishPower joined forces to help lead the fight against climate change and accelerate the just transition to a net zero carbon future.

We asked our supply chain to tell us what their barriers to working towards net zero carbon were. Small and medium-sized enterprises highlighted the greatest obstacles were due to capacity, subject knowledge and not knowing where to find support and tools. To better understand the issues raised we partnered with Zero Waste Scotland and South of Scotland Enterprise to carry out further consultation with the supply chain, resulting in a call for support **K** ScottishPower and a one-stop-shop to help navigate the overwhelming amount of information available.

Each of the 7 businesses have provided funding, with the Scottish Government funding 50% to build the Scottish Business Climate Collaboration (SBCC) Climate Action Hub for SMEs. SPEN among other partners have led the development of the SBCC Climate Action Hub for SMEs. This is a platform that SMEs across all industries in Scotland can access for free. The Hub offers a variety of resources over 12 e-learning modules that cover topics from climate science to calculating their business carbon emissions and creating a carbon reduction plan.



# Commitments

We will introduce consideration of environmental sustainability in our procurement processes in line with ISO20400 Sustainable Procurement Standard, including a carbon metric as a minimum.

We will work in collaboration with our suppliers and industry peers to develop a suite of targets and impact metrics designed to drive environmental improvements throughout our value chain.

We will further enhance environmental management standards and KPIs within contract specifications and supplier codes of conduct (including requirements for public disclosure of metrics) and cascade to all relevant suppliers.

We will target more than 80% of RIIO-T2 suppliers (by value) meeting these enhanced environmental standards.

We will report on the actual percentage of suppliers (by value) meeting these standards.

We will engage with suppliers throughout the duration of their contracts to continue to reduce impacts and optimise benefits

We will increase our internal supply chain management resources to enable the collection and analysis of enhanced data and a greater level of collaborative working.

We will become a Supply Chain Sustainability School Partner, requiring contractors and suppliers for all new contracts to become members and undertake relevant sustainability and environmental training.

We will engage with suppliers early in the development of projects to enable them to propose environmental improvements at concept and design stages



Percentage of suppliers (by value) meeting our enhanced environmental standards



Percentage of suppliers (by value) that have their own sustainability metrics or KPIs (SBT)





# Climate Action

The development and maintenance of our infrastructure as a key enabler for energy security and the Net Zero Carbon transition has never been more important. The most effective way for us to mitigate climate change is by connecting low carbon technology to decarbonise society. While we do this, we must also reduce the carbon footprint of our business operations, and make sure our network is resilient to the effects of climate change.

Our targets for decarbonising our network are deliberately challenging. To achieve them, we will need transformation at every level of our business. To determine the most cost-efficient interventions, we identify the options available and consider the costs against the quantity of carbon reduction. This has allowed us to achieve the carbon savings at the lowest cost to the customer.





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## **Climate action**

# **Supporting the Net Zero transition**

The energy generation system is changing, moving from a traditional centralised model reliant on fossil fuels, to a decentralised Net Zero model focused on low carbon renewable generation.

Demand for electricity is also changing, with the UK and Scottish Governments setting ambitious targets to decarbonise sectors such as transport and heat. Our network must be prepared for these changes in demand and generation. While we drive this transition, we must ensure that none of our customers are left behind, recognising that those communities and customers who are least likely to have access to low carbon vehicles or

society.

We have developed our plans to align with the Scottish Government's Energy Strategy and ensure we are playing our part in meeting the ambition for Net Zero greenhouse gas emissions by 2045.



#### heating will frequently also be the most vulnerable in

# Case study Net Zero Fund

SP Energy Networks' Transmission Net Zero Fund was launched in August 2022 to provide advice and support to vulnerable communities on their journey to Net Zero. The fund operates in three phases:

- 1. Community workshops delivering general and tailored community workshops to help local communities develop their net zero plans
- 2. Project Planning and Feasibility Support supporting development of formal project plans
- 3. Funding Support providing funding support to eligible net zero community projects

The first general net zero workshop was delivered in January 2023 with the aim to demystify Net Zero for attendees. The event introduced attendees to net zero options that they can consider on their decarbonisation journey. The event was well subscribed with 62 stakeholders registered to attend - 58 have attended the live event, while 18 have watched the on-demand recording post-event.

As part of the first two rounds of the tailored community workshops, 16 workshops have been delivered since November 2022. Over 130 community representatives have attended these tailored workshops.

The first round of Project Planning and Feasibility Support took place from July to August 2023 to enable six eligible applicants to formalise their project plans.

Funding support opened for applications in June 2023. Successful applicants will be awarded funding in November/December 2023.

To mark the launch of funding, we hosted a Net Zero Day at Dumfries and Galloway college to bring school pupils' vision for net zero to life. The event was fronted by the star of BBC Scotland's Landward, Dougie Vipond, and delivered in collaboration with SmartSTEMs, who are experts in school STEM engagement. Local school pupils were introduced to net zero through a tour of low carbon technologies and workshops designed to help them imagine a net zero future for their communities.

The £5 million fund has been created to support communities and ensure no one is left behind on the country's journey to net zero emissions. It will support projects that are contributing to decarbonisation efforts within the SP Transmission areas across Central and Southern Scotland.

## Commitments

Introducing our Net Zero Fund

In our RIIO-T2 business plan, we have proposed a Net Zero Fund to ensure local communities are supported to maximise the social, environmental and economic benefits of local energy solutions.



# **Connecting Low Carbon Generation**

#### Status update

We continue to see unprecedented levels of connection applications being made to connect generation and battery storage projects to our network.

We are fully engaged with ESO Connections Reform project, as well as the ENA Strategic Connections Group which is focussed on distribution and cross boundary challenges and solutions.

We are also working closely with UK and devolved governments and regulators to address challenges that are ancillary but closely connected to this challenge, specifically planning and consenting challenges, together with supply chain sustainability.



	Units	2021-2022
New low carbon generation connections	MW	186
Low Carbon Share of Generation %	%	88.5%
Average time to issue connection offer	Days	68.86
Connection offers accepted	Number	74
Quality of Connections ODI score	1-10	8.3
Quality of Connections ODI target	1-10	8.3

2022-2023	
534	
89.5%	
74	
219	
8.2	
8.4	



# Innovation



## **Case study**

## **Network Innovation** Allowance (NIA) **Project - Landslide Protection Asset**

Landslides or landslips are a relatively rare event, but their impact can be catastrophic. In the recent past Scotland has experienced landslides which have had a serious impact on infrastructure.

During the year a desk study was undertaken to identify a potential site for further investigation. Site visits to the identified area were then undertaken with findings indicating a low risk of damage from a potential landslide.

The key benefit of this project is the reduced likelihood of damaged overhead line assets, reducing outages and supply interruptions in the process.

The project is scheduled to finish in March 2024. In the meantime, assessments will be carried out to identify towers with a high risk of landslide damage. After that, a hierarchy of methods to reduce landslide risk will be developed, prioritising nature-based solutions.



Annual investment in ongoing innovation activities that are primarily supporting decarbonisation and/or protecting the environment.



# **Business Carbon Footprint**

We first published our business carbon footprint (BCF) in 2013/14. Our BCF includes key emissions which we directly control or have the most influence over.

In 2022 we went a step further, setting validated Science Based Targets (SBT) for all direct and indirect emissions. Our reduction targets are aligned to what the latest climate science deems necessary to meet the goals of the Paris Agreement –pursuing efforts to limit warming to 1.5°C. Our SBT includes all scopes outlined below.

The greatest reduction has been in SF<sub>6</sub> emissions; a reduction of 5,382 tCO<sub>2</sub>e from last year. This reduction can be attributed to the refurbishment of Torness 400kV Gas Circuit Breaker X320 resulting in significant emissions savings. However, SF<sub>6</sub> still makes up 73% of our total BCF (Scope 1 & 2 excluding Losses).

Looking beyond these SBTs, we will be a Net Zero Carbon networks business across Scopes 1, 2 and 3 by 2035, reviewing our approach annually as global Net Zero Carbon definitions evolve.

#### Status update

In 2022/23 we recorded our lowest business carbon footprint (Scopes 1 & 2 excluding Losses) to date achieving a total carbon reduction of 54% since 2013/14. We have achieved our 'Short Term' target set in 2013/14 and are on course to achieve the 'Medium Term' reduction target of 80% reduction by 2029/30.

Scope 1:	Direct emissions associated with fuel used, SF <sub>6</sub> and other refrig from assets we own or control
Scope 2:	Indirect emissions associated with either energy consumed in a electricity lost as we transport electricity from supply to our cus
Scope 3:	All other emissions which occur as a result of our activities. Thes predominantly associated with our supply chain.

Emissions in tCO <sub>2</sub> e	Specific Area	2018/19	2021/22	2022/23
Scope 1 - Operational Transport	Road	433	518	584
Scope 1 - Fugitive emissions	SF	19,184	12,085	6,703
	HVAC	0	170	2
Scope 1 - Fuel combustion	Generator diesel & LPG	0	9	100
Scope 1 - Building energy use	Building gas	21	47	45
Scope 2 - Building energy use	Buildings electricity	540	92	57
	Substation electricity	1,439	1,505	1,849
Scope 2 - Electricity losses		202,371	132,554	165,625
Total excluding losses		21,616	14,425	9,340
Total including losses		223,987	146,979	174,966

#### gerant gas leakage which occur

assets we own or control, and stomers

ese are upstream emissions



# Scopes 1&2 (excluding Losses)



)31-32 )32-33 )32-33 )33-34 )34-35					
	2031-32	2032-33	2033-34	2034-35	



# **Business Carbon Footprint** Scope 1 & 2 excl Losses



Generator Fuel & Buildings Gas Use





## Commitments

We will implement processes for carbon management in relevant business activities, aligned with PAS 2080 Carbon Management in Infrastructure.

We will adopt a science based target for scope 1\*, 2\* & 3 carbon reduction.

We will identify, and subsequently monitor, metrics to track progress towards our science-based carbon reduction targets.

## **Case study**

# Planet Mark Validation

This year we achieved Planet Mark Business Certification of our Business Carbon Footprint for the 7th year, in accordance with ISO 14064-3 (2006). Planet Mark's Code of Practice adheres to the highest of recognised standards and is administered by an independent Advisory Panel composed of leading academic and industry experts.

Planet Mark is partnered with Cool Earth, the award-winning charity helping rainforest communities to protect nearly 100,000 hectares of biodiversity rich rainforests across three continents.

In 2022/23, we received the Planet Mark Award for 'Best Company', recognising our continuous commitment to - and role in - the green energy transition, and outstanding results in reducing our carbon footprint in all aspects of our processes.



## **Operational Transport**

We are committed to decarbonising our fleet vehicles. In September 2019, our parent company Iberdrola signed up to The Climate Group's EV100 initiative. The agreement will see Iberdrola electrify the bulk of their vehicle fleet (subject to local market conditions) by the end of 2030.

### **Status update**

We have replaced three combustion vehicles with electric vehicles since the start of RIIO-T2. This is less than projected due to issues with the availability of electric vehicle supply, which has resulted in delays to our electric fleet roll out. However, we are working towards fully electrifying our cars and vans by the end of RIIO-T2 and we have installed four 22kWh chargers at our substations as we prepare for the electric vehicle transition. In addition to the infrastructure necessary to support this transition, we are working on innovative solutions to operating a network in rural areas and during blackout events with a decarbonised fleet







## Commitments

We aim to decarbonise our operational fleet by replacing 100% of our 72 cars and vans with electric alternatives by the end of RIIO-T2.

We will strive to lead the decarbonisation of fleet vehicles, working with suppliers and other fleet operators to pilot technically viable alternatives to drive technical advancements and early adoption.



## **Case study**

# Preparing for our EV transition

In 2022/23 we piloted four 22kWh electric vehicle charge points at different substations in order to understand the type of charger which provides the best value and ease of use.

The four substations selected for the pilot included Lagorig, Eccles, Kilmarnock South and Coalburn. The charge points will allow SPT staff to charge vehicles as they undertake critical work on our substations. This 'charge while working' approach will reduce the need to use public chargers and ensures working time is not lost to vehicle charging. Following successful trials, we will roll out approximately 400 charge points across our network.





# **Fugitive emissions**

 $SF_6$  is a colourless and odourless gas used for both insulation and arc interruption in switchgear applications. It has exceptional insulating properties that allow safe, compact and low-cost switchgear solutions. Although it causes no detectable impact on the immediate environment if released, it is a highly potent greenhouse gas with a global warming potential of 23,500 times that of CO<sub>2</sub>.

#### Status update

We continue to work with industry and our supply chain to support the implementation of  $SF_6$  free solutions with a view to adopting suitable alternatives on our network wherever practicable, including tendering exclusively for non- $SF_6$  equipment where possible.

Numerous factors, including faults and asset age, play a role in annual emissions. Overall, the SPT Insulation and Interrupting Gas (IIG) leakage rate for regulatory period 2022/2023 was 0.23%. As evidenced through a recurring year-on-year downward emissions trend our RIIO-T2 SF<sub>6</sub> repair plan has been making a significant impact on reducing SF<sub>6</sub> leaks. The repair plan was derived from thorough analysis of SPT's SF<sub>6</sub> filled equipment with a wide range of interventions considered to ensure any leaking assets were either fully refurbished or, if this cannot be achieved, replaced. Our biggest success story, so far, has been the refurbishment of Torness 400kV Gas Circuit Breaker X320 resulting in significant emissions savings. This asset has consistently been the highest leaking asset on the SPT network and several interventions have been attempted, including a secondary collar around the leaking flange. In early 2022 the original equipment manufacturer completed a full refurbishment of seals and gaskets on the leaking area with no further leaks recorded since.

Furthermore, in line with commitments made in the RIIO-T2 business plan, we have utilised alternative IIG circuit breakers on the 132kV network for both new connections and asset replacement projects. The global warming potential of gas technology used in these breakers is notably lower than  $SF_6$ , further contributing to our overall reduction in emissions. At higher voltages, where the technology is not as

mature, we continue to work with suppliers on SF<sub>6</sub> alternatives for several new GIS installations and hope to provide an update on this in the near future.

We have a commitment to offset SF<sub>6</sub> emissions from a failed repair on a leaking asset until its replacement, therefore we have developed a carbon offsetting approach focussed on carbon removal in line with The Oxford Principles for Net Zero Carbon Aligned Carbon Offsetting. This ensures a high probability of 'Additionality' and low probability of 'Reversibility'. To date we have secured 3,000 tonnes of verified pending issuance units (PIU). Pending issuance units are effectively a 'promise to deliver' a Woodland Carbon Unit in future, based on predicted sequestration. During this regulatory year we secured 2,200 tonnes verified PIUs through our partner Forest Carbon relating to new native woodland created at Saline Hill in Fife, Scotland.

	Unit	Baseline 2018-2019	Year1 2021-:
SF, emissions*	tCO,e	20,103	12,196
Leakage rate	%	0.86	0.45

 $*SF_6$  emissions as stated in the BCF are as per the Ofgem RRP guidance and based on the BEIS conversion factors (in line with Greenhouse Gas Protocol) of 22,800kgCO<sub>2</sub>e for SF<sub>6</sub>. However, for IIG Incentive reporting Ofgem require us to convert using 23,500kgCO<sub>2</sub>e in line with the latest UN IPCC report. Were we to convert using the UN IPCC rate within the BCF, this would increase our carbon footprint by 206tCO<sub>2</sub>e for the current reporting year

 Year2

 2022
 2022-2023

 6,839

 0.23



# **Carbon Offsetting**

Saline Hill is a native woodland creation project on a farm in Central Scotland. A mixture of species will be planted to ensure that the new woodland provides a rich and diverse habitat for local wildlife.

Being situated in a part of the country that is predominantly agricultural, this project will make an important contribution to increasing the overall connectivity of woodland habitats in the area.

The scheme also has areas of designed open ground, allowing walkers to access the woodland to enjoy the space and shelter it provides.

#### Saline Hill - New Native Woodland

Country	Scotland
Location	Fife, nr. Saline
UK grid reference	NT045925
Project completion date	April 2018
Total gross planted area (hectares)	23.10
Anticipated CO, capture (tonnes)	8,549
Approximate trees planted	41,530
Species planted	Alder, Downy Bircl
	Silver Birch, Sycan
Meets UK Forestry Standard	Yes
Woodland Carbon Code status	Registered

## Commitments

We will continue to require manufacturers to provide equipment with an SF <sub>6</sub> leakage rate which is half that of the internationally recognised standards, where technically viable.	
We will continue to carefully monitor and manage our assets to minimise SF <sub>6</sub> leakage, repair leaks quickly, and where this is not possible, replace the asset before its anticipated end of life.	
Where a repair to a leaking asset proves ineffective and the asset requires to be replaced, we will offset the SF <sub>6</sub> emissions from that asset until its replacement via a Carbon Offsetting partner.	
We will use alternatives to SF <sub>6</sub> insulating gas for all new circuit-breakers and GIS installations where there are technically feasible market-ready solutions.	
We will drive the development and adoption of SF6-free technologies, collaborating with supply chain and industry peers and piloting new technologies where technically viable	

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#### SP Energy Networks



### h, Hawthorn, Hazel, Oak Rowan, nore, Willow





## Buildings energy usage

Since September 2019, we have purchased green electricity through a 100% UK-based renewable energy tariff backed by Power Purchase Agreements (PPA) for the majority of our buildings and substations. All energy used under this tariff has a carbon emissions factor of zero, significantly reducing the carbon footprint of the energy we use at our depots and substations.

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## **Status update**

The planning phase of our RIIO-T2 building refurbishment programme has been completed and we are due to start refurbishment works of 48 of our substations in Autumn 2023. In collaboration with Edinburgh Napier University, we have identified specific substations that due to their age and condition will produce maximum benefit from refurbishment.

Edinburgh Napier University have installed monitoring devices in 15 of our substations to collect data during 2023. This will allow us to track the effectiveness of our refurbishment programme across a variety of different substation structure archetypes, age groups, geographic locations, and roof types.





# **Energy Use in Offices, Depots and Substations**





SP Energy Networks







# Commitments

We will implement energy efficiency measures as part of our RIIO-T2 building refurbishment programme at 48 substations (representing around 1/3 of our sites) with the aim of reducing energy consumption by more than 1000MWh per year.

# Case study

## Monitoring Energy Use in Unmetered Substations

In substations, energy is typically consumed for heating and lighting, dehumidification and cooling equipment, oil pumps, air compressors and battery chargers. This is required to maintain secure network operation and resilience. Energy is typically derived from secondary windings (coils) on 33 kV neutral earthing transformers and may be unmetered, which means we do not have an accurate understanding of energy consumption.

In collaboration with Edinburgh Napier University, a study was undertaken to pilot a method for monitoring substation energy consumption using LoRa technology in our one of our substations. LoRa is low energy use, long range wireless technology for data transmission. The pilot was successful and will be rolled out in Autumn 2023 to the remaining substations.





# **Network Losses**

Losses are an inevitable consequence of transferring energy across electricity networks, from generation to demand. Transmission losses are due to the heating of various network components. We have committed to implementing a losses reduction strategy which will reduce losses by an estimated 14,500MWh (c.3%) over the price control period, thereby limiting losses to a lower level than would otherwise be the case.

#### **Status update**

Aging equipment such as transformers, shunt and series reactors and overhead lines are replaced by new lowerloss equipment. To date, asset replacement has been completed on a number of transmission circuits, saving in the order of 400MWh in losses per year, if it is assumed that the circuit loading follows the same pattern as before the replacement work was carried out. This is a small amount relative to the target, but future asset replacement works are expected to yield higher loss reductions. As the size, complexity and loading of our network increases, our losses are also expected to increase. This has been demonstrated by the increase in losses this year which are due to increased renewable generation in the North and higher North to South flows generally as a result. The decarbonisation of losses will be principally driven by the decarbonisation of the UK energy mix. While we have little control over the decarbonisation of energy markets, we will ensure that we connect renewable energy sources to the grid as soon as possible, and that we will continue developing the smart grid of the future, which will also enable the decarbonisation of heat and transport.



	Units	Baseline 2018-19	Y 2
Electricity losses	tCO <sub>2</sub> e	202,371	13
Annual losses	TWh	0.72	0
Share of total electricity	%	n/a	1.

## Commitments

We will implement our RIIO-T2 Losses Reduction Strategy to reduce losses on the network by an estimated 14,500 MWh (circa 3% of 2018/19 losses), thereby limiting losses to a lower level than would otherwise be the case, where this is economic and provides benefit to customers.

#### **SP Energy Networks**







**SP Energy Networks** 

- Cat 1 Purchased Goods & Servs SPT
- Cat 2 Capital Goods SPT
- Cat 3 WTT Fuel and Energy SPT
- Cat 4 Upstream Trans. & Dist. SPT
- Cat 5 Waste SPT
- Cat 6 Business Travel SPT
- Cat 7 Employee Commuting SPT



#### Status update

We have set Science Based Targets for Scope 3 and we continue to improve the way we measure emissions and reduce our impacts, particularly in the categories where we have most control.

The accurate reporting of Scope 3 emissions is a significant challenge, particularly measuring impacts relating to products and services which we procure, given complexity and diversity of our global supply chain.

In 2022/2023, we worked with Planet Mark to develop recommendations for how we can improve our Scope 3 emissions measurement. Planet Mark have

reviewed our methodology against the guidance of World Business Council for Sustainable Development (WBCSD) and World Resources Institute (WRI) Greenhouse Gas (GHG) Protocol (2004), the 'GHG Protocol' and made recommendations for how we can continue to improve Scope 3 measurement in line with best practice.

We have worked to include a number of Planet Mark's recommendations including updating the factors and methodology used to calculate Categories 1 & 2. A summary of our reporting process and level of reporting maturity are outlined below.

Scope 3 Category	tCO <sub>2</sub> e	%	Data Completeness / Accuracy
Purchase Goods & Services (C1)	30,761	33%	
Capital Goods (C2)	19,472	21%	
Fuel and Energy Related Activities ( C3)	39,969	43%	•
Upstream Transportation & Distribution (C4)	1,057	2%	
Waste Generated in Operations (C5)	37	0%	•
Business Travel (C6)	474	1%	
Employee Commuting (C7)	372	0%	•
Total Scope 3	92,142		

## Case study

## Employee Commuting

Although employee commuting accounts for a relatively small proportion of our Scope 3 emissions, it is an area we can positively influence by supporting our staff to travel more sustainably. In 2022/23 we continued to implement our cycle to work scheme and introduced our employee EV scheme, supporting our employees to transition to an electric vehicle by offering electric vehicles through salary sacrifice.



# **Business Travel**

Emissions associated with business travel include indirect emissions associated with using vehicles not owned by SP Energy Networks, e.g., employees own cars, rental vehicles and use of public transport and planes. Greenhouse gas emissions associated with business travel have reduced significantly since we started measuring our footprint which is largely due to an increase in remote working and the introduction of our Business Travel policy to limit short haul flights in favour of other, less carbon intensive forms of transport, such as rail.

The last two years of business travel emissions were artificially low due to Covid-19 restrictions. This year's emissions have increased by 28% from last year. However, this is 13% lower than the baseline and a positive direction of travel.



# **Case study** Employee Commuting

Since the implementation of our Business Travel Policy in 2018/19, the way we use public transport for business travel throughout the UK has changed. In 2018/19 the split between business trips taken by train and plane were approximately the same. In 2022/23 plane journeys only account for 6% of this split. Because trains emit significantly less carbon emissions per passenger journey than planes, our business carbon footprint is around 10tCO<sub>2</sub>e lower as a result if we compared to the 2018/19 profile.



Business Travel
(excluding contracto
business travel)

Unit	2018-19
tCO <sub>2</sub> e%	547
mi	2,119,675
kgCO <sub>2</sub> e/mi	0.258

# Capital Carbon & Carbon Management in Infrastructure

Capital carbon refers to the emissions associated with the creation, refurbishment and end of life treatment of an asset (e.g., a substation or overhead line). It includes the embodied carbon of materials and items of equipment used to develop our infrastructure.

In order for us to reduce our carbon footprint in line with Scope 3 carbon reduction targets, we must embed whole life carbon management principles into our business processes and decision making, and work in partnership with our supply chain to support them to decarbonise.

#### Status update

We continue to collaborate with other transmission network operators through the Reduction of Capital Carbon in Infrastructure Transmission Group (RoCCIT), which shares best practice and data to support the development of tools. This collaboration has developed a carbon measurement tool, which allows electrical suppliers to provide information in a streamlined way. Further work is needed to fully embed embodied carbon measurement tools within our project delivery processes, however, this is anticipated to be complete by the end of 2023.

We also continue to collaborate with our supply chain including recent work with BEAMA, the UK trade association for manufacturers and providers of energy infrastructure technologies and systems, on the challenges of measuring capital carbon emissions.



# Commitments

We will work collaboratively with our stakeholders, including th Transmission Operators, throughout RIIO-T2 with the aim of as and managing capital carbon on our projects, driving efficience throughout our supply chain, and sharing best practice.

We will, in collaboration with the other Transmission Operators introduce a measurement tool for embodied carbon in new proorder to establish a baseline and set a reduction target.

We will collaborate with our supply chain and other Transmiss Operators to drive scope 3 and embodied carbon footprint re

We will collaborate with our supply chain to implement sustain sites to reduce carbon and other impacts, for example energy diesel use, re-use of materials and reducing impact of transport

#### SP Energy Networks

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nable project efficiency, rtation.	

## **Case study**

We have assessed the capital carbon on 8 new RIIO-T2 projects listed below.

- AU Route Cable Civils
- South Kyle Windfarm Civils
- Harting Rig Civils
- Sandyknowe
- Coylton
- Elderslie Feeder Station
- WLTI
- Cumberhead

The first chart below shows the total carbon emissions from each project. The assessment included upfront embodied carbon associated with the capital development of each project. Emissions are classified into the following life cycle stages:

Al-A3 impacts include raw materials extraction, transport to manufacturing plant, manufacturing, and fabrication. Al-A3 emissions generally account for the majority of capital carbon emissions in new transmission projects. The materials representing the highest proportion of carbon across all projects include; In Situ Concrete, Concrete, Ancillaries, Earthworks, and Main equipment.

These materials provide significant opportunity for reducing carbon impacts on future projects and will require engagement across our supply chains to understand future reduction opportunities and pilot alternative low carbon products. A4 impacts include emissions associated with transporting goods and materials to site. Transport emissions generally account for a smaller proportion of emissions than A1-A3. Opportunities for reduction include mandating the use of low carbon transport and ensuring materials are sourced locally to our sites.

A5 impacts include emissions associated with construction and installation process on site. A5 emissions are variable across projects, and in some cases, account for the majority of project emissions.

Better data is required to understand emissions associated with construction / installation processes in order to identify opportunities for reduction – but it is likely this will include reducing site energy use and reducing diesel use in site vehicles.

The second chart shows carbon emissions per project spend. By assessing carbon emissions against project cost, we can baseline project performance and monitor project performance. Results show performance across projects is variable – between 0.02 - 1.02 kgCO2e per pound. SPT will continue to monitor embodied carbon projects against spend to track improvements and measure performance.

![](_page_34_Picture_18.jpeg)

![](_page_35_Picture_0.jpeg)

![](_page_35_Figure_1.jpeg)

![](_page_35_Figure_2.jpeg)

#### Carbon Emissions per project cost (kgCO<sub>2</sub>e/£)

**SP Energy Networks** 

kgCO2e

Total Carbon Emissions (kgCO2e) as a proportion of project emissions

![](_page_35_Figure_6.jpeg)

# **Climate Change Impact**

![](_page_36_Picture_1.jpeg)

## Commitments

We will undertake detailed Flood Risk Assessments at our remaining 10 high risk sites and implement identified measures to mitigate the risk to the network from flooding.

We will publish a report in line with the 3rd Round of Adaptation Reporting under the Climate Change Act, in line with the Energy Networks Association work to produce a sector report.

![](_page_36_Picture_5.jpeg)

Scotland's changing climate presents risks to the reliability of our network and we must act to ensure on-going resilience.

This requires:

- weather
- change on our network

As climate predictions evolve, we carry out work to ensure that our assets are resilient to the effects of climate change, including the potential for increased flooding and higher temperatures.

Initially, a desktop study carried out using SEPA flood maps and SPEN GIS data identified 26 possible substations at risk from flooding. Detailed assessments of the electrical plant and buildings at these sites reduced the list of sites at risk of flooding to 10. AECOM were commissioned to conduct Flood Risk Assessments for these 10 sites, which consisted of detailed hydrological modelling, consideration of future climate change projections and recommendations on the flood mitigation works required to mitigate the risk to the substations. As a result of these assessments 4 sites were identified to require flood mitigation works. These works will be undertaken during years 3 and 4 for the RIIO-T2 period.

• Seeking to understand our existing resilience to

• Understanding the potential impacts of climate • Embedding adaptation within our business processes and investment decisions.

![](_page_37_Picture_0.jpeg)

# Pollution **Prevention**

While we deliver the low carbon transition and reduce our own carbon impact, we must also prevent pollution, protect and enhance biodiversity, use resources sustainably and encourage our supply chain to optimise their environmental impacts. Protection of the environment is a key component of how we operate our business.

#### **Status update** Incidents

SP Transmission have reported two incidents to the Environmental Regulator, SEPA, in the reporting period.

In May 2022, following investigation of an oil leak at Coylton 132kV substation it was found the separator was faulty and no longer contained oil. Following a wider search of the surrounding area, oil was found to have entered a small burn. 99% of the lost oil had been captured and inspections continued daily until it was confirmed no further contamination was present. Further checks were performed downstream of the burn and no signs of oil were found.

In July 2022, there was a significant transformer failure at Torness nuclear power station resulting in significant loss of oil due to a transformer fire. Oil entered the site drainage system with oil discharged to the marine environment. The marine environment was

monitored by shoreline clean-up teams and all oil was subsequently cleaned up. An internal investigation is ongoing and as a result we have implemented a new emergency response framework.

No enforcement actions or undertakings resulted from the two incidents notified to the regulator

#### **Pollution Prevention Plans**

All major projects within the transmission area now include a Pollution Prevention Plan. This forms part of the risk management process to ensure that environmental risks from the projects are managed appropriately to avoid impacts such as from construction water run-off, in normal and abnormal situations. These plans ensure that risks are identified, appropriate controls are implemented and resources

## **Commitments**

are identified to deliver a suitable level of risk management.

- storage/assessments).
- bentonite clay.
- A wet weather protocol.

We will target zero environmental regulatory interventions and notifi

We will deliver our RIIO-T2 programme of mitigation measures (oil co pollution prevention, developed via a condition-based asset risk ass

We will implement Pollution Prevention Plans for all future projects f beyond.

We will implement a programme to identify, risk assess and address contamination.

We will eliminate Polychlorinated Biphenyls (PCBs) from our networ with the relevant legislation and in line with the industry approach ag Environmental Regulators.

```
Typical requirements or areas of focus are:
```

Protection of the water environment including watercourses and drainage systems through surface water management, spill response etc. Management of dewatering activities. Fuel delivery, fuel storage, fuel management and refuelling of plant, machinery etc. Management of COSHH materials (use/ Use of materials such as concrete and

Management of soils (excavation/storage) and

able breaches	
ontainment) for sessment process.	
or RIIO-T2 and	
high risk legacy land	
rk in compliance greed with the	

![](_page_38_Picture_0.jpeg)

#### **PCB removal**

Work is progressing on the planned removal of PCB contaminated (or potentially contaminated sealed) assets to ensure that we meet the deadline of 31 December 2025 for the removal of those assets from our Transmission network. Several assets are still to be sampled and a plan is being worked through to ensure that we sample and assess all the assets in time to enable decontamination, or replacement if it is needed.

#### **Oil Top-Ups**

SPT have continued to regularly monitor our entire oil-filled asset base for leaks, future risk, and oil purity. In doing so we can remain confident that they are fit for service and will cause no adverse effects to the surrounding environment.

Consistent with previous year's results the majority of oil top ups have related to Transformers, inclusive

of faults and regular maintenance activities. Over the 22/23 regulatory year, SPT have seen a reduction in the overall volume of oil being replaced on the network. One of the main factors in this drop in volume, compared to previous results, is a lower number of interventions required on our fleet of 400kV Transformers. These assets tend to contain larger volumes of oil in comparison to our Grid Transformers. Top up figures only include oil top ups resulting from loss of oil. Routine maintenance involving oil flushing is recorded however is not included in these figures as no oil has been lost.

To further mitigate any leakage, aside from repairing and replacing assets, SPT are continuing to deliver the RIIO-T2 oil bund and drainage system refurbishment programme ensuring our primary and secondary containment systems remain fit for purpose and protect the surrounding environment

Unit	2021-22	2022-23
Litres	8,516,712	8,525,310
Litres	268,000	268,000
Litres	8,784,712	8,793,310
Litres	3,307 (1.2%)	5805 (2.2%)
Litres	34,375 (0.4%)	22,553 (0.3%)
	Unit Litres Litres Litres Litres Litres	Unit2021-22Litres8,516,712Litres268,000Litres8,784,712Litres3,307 (1.2%)Litres34,375 (0.4%)

![](_page_38_Picture_11.jpeg)

![](_page_39_Picture_0.jpeg)

# **Action for Nature**

We mitigate biodiversity loss most significantly through our actions to maximise the utilisation of our network and connect low carbon generation for societal decarbonisation. This leads to benefits in terms of climate change mitigation, avoidance of additional land use and reductions in pollution.

While we do this, we also protect and enhance the ecosystems we operate within, mitigating the ecological impacts of construction by aiming for 'no net loss' and avoiding the introduction or spread of invasive non-native species.

#### Status update

We have committed to work collaboratively with the other UK electricity Transmission Network Operators to develop our approach to natural capital and biodiversity assessment and enhancement. A consistent approach will ensure decisions are made to assess biodiversity consistently across the network.

Working with other linear infrastructure operators, a biodiversity tool for use by the Transmission Operators in Scotland has been developed. This tool is based on the DEFRA V.2 tool and adapted for Scottish habitats and environments.

During Year 2 we have the identified projects that this

tool will be used on during the RIIO-T2 period in line with our Use it or Lose It Environmental Enhancement funding. We are working with local and national nature organisations to deliver biodiversity enhancement across this portfolio of projects.

During Year 2 we collaborated with the Nith Fisheries trust to present our biodiversity plans at the Fisheries Management Conference 2023. Engagement such as this allows us to ensure that we are meeting stakeholder expectations and delivering biodiversity benefits to the communities that we work in.

The three TOs undertook a review of existing Natural Capital tools over an 18 month period to identify one that best fits the requirements of each organisation and of Ofgem, which is to provide a quantified account of electricity transmission sector land assets. We also required a tool that could work with existing GIS systems, be used by non-experts and be used for high level baselining and optioneering with the capability to carry out more accurate analysis as site data matures. We are currently testing a tool, developed in collaboration with AECOM, EcoUplift, to meet the electricity network sector needs and envisage this be procured and a baseline assessment carried out in 2023/2024.

![](_page_39_Picture_11.jpeg)

![](_page_40_Picture_0.jpeg)

![](_page_40_Picture_1.jpeg)

![](_page_40_Picture_2.jpeg)

## **Case Study**

## **Falkirk Lowland Raised Bog Restoration Project**

At SP Energy Networks, we are committed to working with local communities to ensure we are protecting and enhancing biodiversity across all our projects.

Invertebrates are facing an extinction crisis now more than ever. The rate of extinction in insects is eight times faster than that of birds, mammals and reptiles! There are 26,000 invertebrates in Scotland and more than 85% of ALL Scottish biodiversity are bugs. Invertebrates provide us with a myriad of services such as maintaining our water quality, waste, and soil management to pollination.

Since 2016, SPEN have been supporting Buglife, an invertebrate conservation trust, to restore more than 260 hectares of ancient and damaged lowland raised bogs at nine locations near Falkirk across the Slamannan Plateau to improve habitats for bugs.

The Slamannan Plateau consists of isolated patches of peatland and farmland, surrounded by lowlands. The lowland raised bogs have suffered from various harmful practices over the years, such as burning, draining, mining, planting trees

and overgrazing. Restored peatland provides significant benefit to the environment because it stores huge amounts of carbon (1,620 megatons in Scotland) which helps to reduce carbon emissions and it stores water which helps prevent flooding; as well as healthier habitats for biodiversity. So far, 116 hectares of the site has been restored, and another 114 hectares planned.

By working in partnership with Buglife, the project delivered an additional suite of environmental benefits. These included:

 Bringing nine sites into conservation management schemes. Decreased carbon dioxide and greenhouse gas emissions and net carbon sequestration across all restored sites. Stabilised hydrology across all sites with less risk of local flooding events and improved local water quality. Improved ecological coherence and connectivity of bog habitat across the Slamannan Plateau. Improved habitat for rare bog-dwelling species and other peatland wildlife.

![](_page_41_Picture_0.jpeg)

## Commitments

We will work collaboratively with our stakeholders, including the other Transmission Operators, throughout RIIO-T2 to develop and pilot a common approach and robust methodologies for delivering Biodiversity Net Gain alongside Natural Capital assessment and enhancement.

We will pilot these biodiversity and natural capital assessment methodologies and associated tools on selected RIIO-T2 projects

We will embed these biodiversity and natural capital assessment methodologies and associated tools in our business decision making processes for projects and the management of existing sites.

We will identify, and subsequently monitor and annually report, metrics to baseline and track the levels of biodiversity and value of natural capital on our sites and the achievement of our targets.

We will work with our local communities, landowners and other stakeholders to deliver 'no net loss' in biodiversity and identify options for delivering 'net gain'.

We will work with our local communities, landowners and other stakeholders to deliver a net positive impact in natural capital across our existing sites.

We will release unused non-operational land to local community energy projects, allowing them to use sites for free to generate and deliver energy to their local communities.

#### Maximising environmental benefit from non-operational land

#### **Status update**

SP Energy Networks are committed to delivering positive effects for biodiversity across our network and are actively developing plans to maximise benefits for the environment across our estate.

As an active member of the communities we operate in, we are seeking opportunities to 'matchmake' community environmental conservation groups with non-operational land that we own, to deliver biodiversity enhancement projects. Not only will this deliver environmental benefits, it will also further enhance our community relations, and help deliver tangible social benefits such as community cohesion and empowerment. During this regulatory period, we have identified a number of sites with potential, and have kicked off internal processes to work towards releasing the land. We have also engaged with environmental stakeholders, national and local, to develop potential land use proposals.

We have also engaged with consultants to develop a list of potential enhancements that would be appropriate for sites.

![](_page_42_Picture_0.jpeg)

# Enhancing visual amenity

![](_page_42_Picture_2.jpeg)

# Commitments

Where supported by visual amenity assessment and stakeholder engagement, and when cost effective to do so, we will deliver visual amenity mitigations for those existing assets not identified for upgrade or refurbishment during RIIO-T2.

![](_page_42_Picture_5.jpeg)

Visual amenity is considered in the planning of new assets or replacement works, but in some cases, pre-existing transmission infrastructure has a direct visual impact upon the surrounding environment and the stakeholders who access it. This can be because settlements have developed around existing assets, because people are accessing landscapes in new or different ways, or simply because visual amenity was not seen as a priority when certain historical assets were installed.

## Status update

We developed the VIEW project during the TI period considering visual enhancement around our existing infrastructure in the Loch Lomond and the Trossachs National Park. We worked directly with communities and other stakeholders to identify potential candidate sites. Following discussions between SPT and Ofgem, there is potential to recommence stakeholder engagement on this project in 2024 with a view to having a defined scheme for potential delivery in 2025. This will be dependent on a number of factors, including engagement with key stakeholder, landowners and communities.

![](_page_42_Picture_10.jpeg)

![](_page_43_Picture_0.jpeg)

# **Circular Economy**

As a sustainable networks business we are committed to incorporating circular economy principles into our policies, procedures and project delivery. We work collaboratively to improve the circularity of our resources, recognising the value of keeping them in use for as long as possible and retaining their value. In line with this, we have set challenging business targets to divert 100% of our waste from landfill by 2030, excluding compliance waste.

#### Status update

Our parent company, Iberdrola, is certified to ISO20400 Sustainable Procurement Standard. During year 2 of the price control period, we have undertaken a gap analysis against this standard to identify areas for improvement. The output of this analysis has allowed us to create an action plan to embed circular economy principles into our business processes. Our first step has been to include circular economy principles within our procurement requirements.

We are continuing to use the SmartWaste reporting tool to collect resource use data including material reuse, as well as landfill and recycling rates. During the remainder of RIIO-T2 we will continue to improve materials data including the % recycled content of materials being used on our projects.

![](_page_43_Figure_6.jpeg)

The waste tonnage, including depot and construction waste for calendar year 2022 was 25,428 tonnes\*. This is lower than previous years due to a difference in the timing and type of construction projects underway during this period. There will also be a lag as new projects under the RIIO-T2 price control are initiated. Our waste Reused percentage increased from 67% to 78% during the period, mainly due to the reuse of soils and stones in our projects. The diversion from landfill percentage for 2022 was 93.1%, and we are on target to meet our 95% landfill diversion target by the end of 2023.

\*excluding compliance waste

Recycle	e or use <del>of waste -</del>	Zer	o waste by 2050
by 2	2030		
2030			2040
ndfill	-	Target	
ear 202 structio	22 was on proie	25,428 ects unc	tonnes*. This is Jerway during

![](_page_44_Picture_0.jpeg)

## **Case Study**

A recent example of how we have avoided waste and re-used assets is our work at the Mossmorran 132kV switchgear replacement project. Following an inspection, the concrete foundations were found to be in a condition that they could be refurbished and re-used. The concrete foundations were cleaned, repaired, and treated with Sikaguard, an epoxy layer which provides shielding from the elements adding around 40 years to the lifespan of the concrete. This avoided the need to demolish and transfer the waste off site, reducing the potential carbon emissions from the works. By refurbishing the existing assets 247m3 of concrete was reused and 106 tCO<sub>2</sub>e was saved, this is equivalent to the running of 39 households for one year.

## Commitments

We will embed circular economy principles where relevant throughout our business processes, considering whole life cycle environmental impacts.

We will divert 95% of our waste from landfill.

As part of our revision of design processes, we will include considerations of operational and end of life stages with the aim of designing out waste.\*

We will require project Waste Management Plans for all new projects in RIIO-T2 and beyond.

We will implement metrics to measure the sustainability of our resource use, with the aim of establishing a baseline to enable target setting during RIIO-T2.

We will set targets for recycled/reused materials as a % of total input materials to be achieved by end RIIO-T2, 2030 and 2050.

We will continue our work to minimise the environmental impacts of our use of aggregates (soils and stones) via collaboration with other TOs, our supply chain and membership on infrastructure resource optimisation groups\*\* with the aim of identifying and implementing solutions to reduce the use and disposal of aggregates, including increased use of secondary aggregates.

We will continue to collaborate with environmental / waste regulators, other infrastructure companies\*\* and our supply chain to drive sustainable resource use and waste minimisation in order to meet our RIIO-T2 and Sustainability Goals.

\*See related commitment to align with PAS2080 in Decarbonising our network and assets and supply chain collaboration commitments in Supply Chain Sustainability, which also encourage resource use reduction and waste minimisation.

\*\* Via the Scottish Infrastructure Circular Economy Forum and Major Infrastructure Resources Optimisation Group.

![](_page_44_Picture_14.jpeg)

![](_page_44_Picture_15.jpeg)

![](_page_45_Picture_0.jpeg)

	Baseline 2018	Year 1 2021	Year 2022
Reduce			
Reused		61.6	19.8
Recycled	44.2	28.4	3.4
Recover		0.4	0.5
Landfill	51.0	1.9	1.8
Total waste	95.2	92.3	25.4
(thousands of tonnes)			

% of waste - fate	Baseline 2018	Year 1 2021	Year 2022
Reduce	0.0%	0.0%	0.0%
Reused	0.0%	66.7%	77.7%
Recycled	46.4%	30.7%	13.4%
Recover	0.0%	0.4%	2.0%
Landfill	53.6%	2.1%	6.9%
% Diverted from Landfill	46.4%	97.9%	93.1%

![](_page_45_Picture_4.jpeg)

# Data and Assurance

#### Scope

Our RIIO-T2 plan and commitments are designed to quickly build on our current performance, using our established process for achieving data maturity. This starts with identifying and collecting initial data, progresses to identifying metrics and baselines then culminates in setting and delivering targets and ongoing tracking. This process is highlighted on our Data Maturity Matrix overleaf, where we list our Key Focus Areas and rank them based on their current level of data maturity. There's still some work to be done to get to where we wanted to be at this stage on a few areas, however, this year we continued to improve our data maturity:

- Embodied Carbon we collaborated with the other TO's through the RoCCIT group and with BEAMA on carbon measurement tools.
- Natural Capital progressed with the testing of AECOM Eco-uplift tool for high level baselining and optioneering
- Sustainable resource use utilised the SmartWaste reporting tool to collect resource use data including material reuse, as well as landfill and recycling rates

![](_page_46_Picture_7.jpeg)

#### Quality

We follow our internal assurance framework to meet the Data Assurance Guidance (DAG) Licence Requirement. The overarching aim of the DAG is to reduce the risk to customers and other stakeholders of any inaccurate reporting or misreporting by Licencees, and therefore the Data Assurance Activity should be proportionate to the risk of the submission. In line with Licence requirements this submission has passed the following assurance gateways prior to final Director sign off:

- Risk Assessment
- Method Statement
- Second Person Review
- Senior Manager Sign-off

The framework ensures accuracy and completeness, which gives confidence on the robustness of the submission prior to Director sign-off. Our Business Carbon Footprint is subject to an independent external assurance verification and certification by Planet Mark. Planet Mark is an internationally recognised sustainability certification, awarded annually to businesses that are committed to reducing their carbon emissions.

A link to the SPEN Certification Statement can be found <u>HERE</u>.

![](_page_46_Picture_17.jpeg)

# **Data Maturity Matrix**

![](_page_47_Figure_1.jpeg)

# **Performance Tables**

			<b>Baseline Year</b>	Year 1	Year 2
Report Section	Metric	Units	2018/10	2021/22	2022/22
		0/	2010/17		
Performance Dashboard	Long-term GHG reduction target Scopes 1,2,5 by 2035 accredited by SB11	%	n/a	6/%	6/%
Performance Dashboard	Change in business carbon tootprint (excl. losses) from last year Okan we in 254 antiosians from loston an	%	+36%	-25%	-35%
Performance Dashboard	Change in SF6 emissions from last year	%	+51%	-52%	-45%
Performance Dashboard	rears of continuous certification to the Planet Mark	rears	3	6 10 (	/
Performance Dashboard	Low Carbon Generation Connections made this year	IMIVV	139	186	534
Performance Dashboard	Investment in innovation supporting decarbonisation	£m	0.25	2.8	2.6
Performance Dashboard	Waste diverted from landfill	%	46%	98%	93%
Performance Dashboard	Community Net Zero Carbon workshops delivered since November 2022	Number	n/a	n/a	16
Performance Dashboard	Gender pay gap	%	20.06%	16.33%	16.50%
Performance Dashboard	Stakeholder Satisfaction Score	out of IO	8.5/10	8.1/10	9.4/10
Performance Dashboard	Suppliers progressing towards enhanced environmental standards	%	n/a	n/a	4/%
Performance Dashboard	Reportable environmental incidents	Number	0	3	2
Achieving the sustainability step-chang	e ISO14001:2015 Certification	Y/N	Yes	Yes	Yes
Supply Chain Sustainability	Percentage of suppliers (by value) meeting licensee's supplier code	%	n/a	n/a	47%
Supply Chain Sustainability	Percentage of suppliers (by value) that have their own sustainability metrics or KPIs (SBT)	%	n/a	n/a	57%
Connecting Low Carbon Generation	New low carbon generation connections	MW	n/a	186	534
Connecting Low Carbon Generation	Low carbon share of generation	%	n/a	88.5%	89.5%
Connecting Low Carbon Generation	Average time to issue connection offer	Days	n/a	68.86	74
Connecting Low Carbon Generation	Connection offers accepted	Number	n/a	74	219
Connecting Low Carbon Generation	Quality of Connections ODI score	Score (1-10)	n/a	8.3	8.2
Connecting Low Carbon Generation	Quality of Connections ODI target	Score (1-10)	n/a	8.3	8.4
Innovation	Annual investment in ongoing innovation activities that are primarily supporting decarbonisation and/or protecting the environment	£m	0.25	2.76	2.62
Business Carbon Footprint	Scope 1 - Operational Transport	tCO2e	433	518	584
Business Carbon Footprint	Scope 1 - Fugitive emissions - SF6	tCO2e	19,184	12,085	6,703
Business Carbon Footprint	Scope 1 - Fugitive emissions - HVAC	tCO2e	0	170	2
Business Carbon Footprint	Scope 1 - Fuel combustion	tCO2e	0	9	100
Business Carbon Footprint	Scope 1 - Building energy use - Gas	tCO2e	21	47	45
Business Carbon Footprint	Scope 2 - Building energy use - Building Electricity	tCO2e	540	92	57
Business Carbon Footprint	Scope 2 - Building energy use - Substation Electricity	tCO2e	1,439	1,505	1,849
Business Carbon Footprint	Scope 2 - Electricity losses	tCO2e	202,371	132,554	165,625
Business Carbon Footprint	Total BCF excluding losses	tCO2e	21,616	14,425	9,340
Business Carbon Footprint	Total BCF including losses	tCO2e	223,987	146,979	174,966
Fugitive Emissions	IIG emissions	tCO2e	20,103	12,196	6,839
Fugitive Emissions	Leakage rate	%	0.86%	0.45%	0.23%
Network Losses	Electricity losses	tCO2e	202,371	132,554	165,625
Network Losses	Annual losses	TWh	0.720	0.637	0.856
Network Losses	Share of total electricity	%	n/a	1.75%	2.39%
Oil Top Ups	Oil in service (transformers)	litres	n/a	8,516,712	8,525,310
Oil Top Ups	Oil in service (FFCs)	litres	n/a	268,000	268,000
Oil Top Ups	Oil in service (total)	litres	n/a	8.784.712	8.793.310
Oil Top Ups	Cable oil top ups	litres	n/a	3.307	5.805
Oil Top Ups	Transformer oil top ups	litres	n/a	34.375	22.553
Circular Economy	Reduce	Tonnes (thousands)	0.0	0.0	0.0
Circular Economy	Reused	Tonnes (thousands)	0.0	61.6	19.8
Circular Economy	Recycled	Tonnes (thousands)	44.2	28.4	34
Circular Economy	Recovery	Tonnes (thousands)	00	04	0.5
Circular Economy	landfill	Tonnes (thousands)	510	19	18
Circular Economy	Total tonnes of waste	Tonnes (thousands)	95.2	923	254
Circular Economy	Total weight of waste produced - Reduce	ردین اندی (۱۳۵۵ (۱۳۵۵) م	0.0%	0.0%	0.0%
Circular Economy	Total weight of waste produced - Reused	70 9 <u>/</u>	0.0%	6.070	777%
	Total weight of waste produced - Recycled	/0 0/	0.0% AK AV	20.7 % Z0 7%	17.770
	Total weight of waste produced - Necycleu	/0 0/		0.7 <i>/</i> 0	0. <del>4</del> ∕₀ 2 ∩%
	Total weight of waste produced - Recovery	/o 0/	0.0 % 57 40/	0.4%	Z.U /0 Z 00/
	Total % of words divorted from londfill	/o 0/	00.00/0 A L A0/	Z.1/0 070%	0.7 /0
		70	40.4 %	71.7%	73.1%