SP Transmission
Annual Environmental Report

2023/2024

SP Energy Networks

Contents

A message from our CEO

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

In this, our third Annual Environmental Report for RIIO-T2, we provide an overview of our environmental and sustainability performance and give progress updates on our RIIO-T2 commitments.

At the halfway point of our RIIO-T2 work programme, we continue to plan the development of our network to ensure we deliver value and benefits for people and communities across our licence area, whilst ensuring none of our customers are left behind. We are committed to becoming a fully sustainable networks business and will play our part in enabling societal decarbonisation whilst ensuring our activities have a net positive impact on people and planet.

We have seen improvement in several areas this year including biodiversity enhancement and innovation of sulphur hexafluoride-free (SF_6) assets. We also launched our Year of Sustainability, a fresh approach to internal communication and training to provide all our staff with the knowledge they require to play their part in the sustainability transition.

We are in a climate and biodiversity crisis. We must halt the UK's loss of biodiversity and focus on restoration of the 50% of our plants and animals that have disappeared since the industrial revolution. In 2024 SPEN launched our Action Plan for Nature, recognising our role in delivering Nature Positive by 2030 and detailing our commitment and the actions we plan to deliver through innovation and partnerships.

We are proud to be leading the way towards a Net Zero Greenhouse Gas (GHG) future, and this report highlights our ongoing work to manage the network and its impacts, deliver network improvements and enable the connection of low carbon technologies, whilst demonstrating our progress on all aspects of sustainability.

As a business, we have set validated Science-Based Targets across all scopes to ensure we are reducing our direct and indirect carbon footprint in line with the latest climate science to ensure global warming is limited to 1.5°C above pre-industrial levels.

Our actions to become a fully sustainable networks business are already being recognised, as we achieved Planet Mark certification for the 8th year in a row. We continue to progress our SF_6 reduction commitments and during year 3 of RIIO-T2 procured the first ever commercial order for Hitachi's EconiQ Retrofill system.

We continue to see unprecedented levels of connection applications being made to connect generation and battery storage projects to our network. With over 700GW of contracted capacity currently in the GB-wide transmission and distribution queues, in 2023/24 we connected 48MW of new low carbon generation to the electricity network in support of Net Zero GHG goals.

We are acutely aware that we cannot 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 GHG. Already, 49% 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 the proactive steps we are taking to tackle global and local issues. I look forward to continuing to support the communities we serve to deliver social, environmental and economic benefits and deliver a just transition for all. We are at the start of the long journey to Net Zero GHG, but we will continue to collaborate with all of our partners, taking bold actions to create a better future for all.

Nicola Connelly
CEO, SP Energy Networks

High Level Highlights

Iberdola ESRS Gap Analysis and Double Materiality review

During 2023 we performed a sustainability due diligence and double materiality review in line with European Sustainability Reporting Standards guidance and in conjunction with our parent company Iberdrola SA. This aims to assess our operational impact and financial materiality allowing us to implement mitigations, set objectives and measure our performance.

Planet Mark Validation

This year we achieved Planet Mark Business Certification of our Business Carbon Footprint for the 8th year, in accordance with ISO 14064-3 (2019). 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.

SF_6 Hitachi pilot

To address changing demand and to help meet our Net Zero targets, we are working with Hitachi and their EconiQ high-voltage solutions to upgrade our Hunterston 400 kilovolt (kV) gas-insulated switchgear (GIS) substation. Further details can be found in the Fugitive Emissions section.

Year of Sustainability

In April 2023, we launched our Year of Sustainability campaign with the aim to deliver 12 months of knowledge sharing opportunities, case studies, workshops and challenges to help prepare us for working towards a sustainable future. For further details please go to the Delivering a More Sustainable Network section below.

Net Zero Fund

In December 2023, the fund awarded its first round of grants worth £679k to six charities and organisations to help them decarbonise and reach their net zero targets sooner by introducing innovative net zero technology

Nith Fisheries Project

This year we have worked with The Nith Fisheries Project to develop a pilot that will test our approach to delivering 'No Net Loss' through offsite biodiversity enhancement schemes. This pilot project will focus on Riparian Woodland Creation across 3.2 Hectares of the banks of the River Nith in Dumfries and Galloway.

Global Good Awards 2023

SPEN were delighted to be recognised as a finalist by Global Good Awards for our commitment to supporting regional and national ambitions as well as our own Sustainable Business Strategy. We achieved a bronze award for Sustainable Supply Chain of the Year and for the 2nd year in a row, achieved silver for Climate Action: Race to Net Zero category.

Independent Net Zero Advisory Council

An independent group of energy industry experts that was created by SPEN to bring the voice of customers and stakeholders into the heart of its business marked its first anniversary during 2023.

Purpose of this Report

This SP Transmission (SPT) Annual Environmental Report for regulatory year 2023-24 (1st April 2023 to 31st March 2024) published on 30th September 2024, 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 seeking to minimise our impacts on the environment.

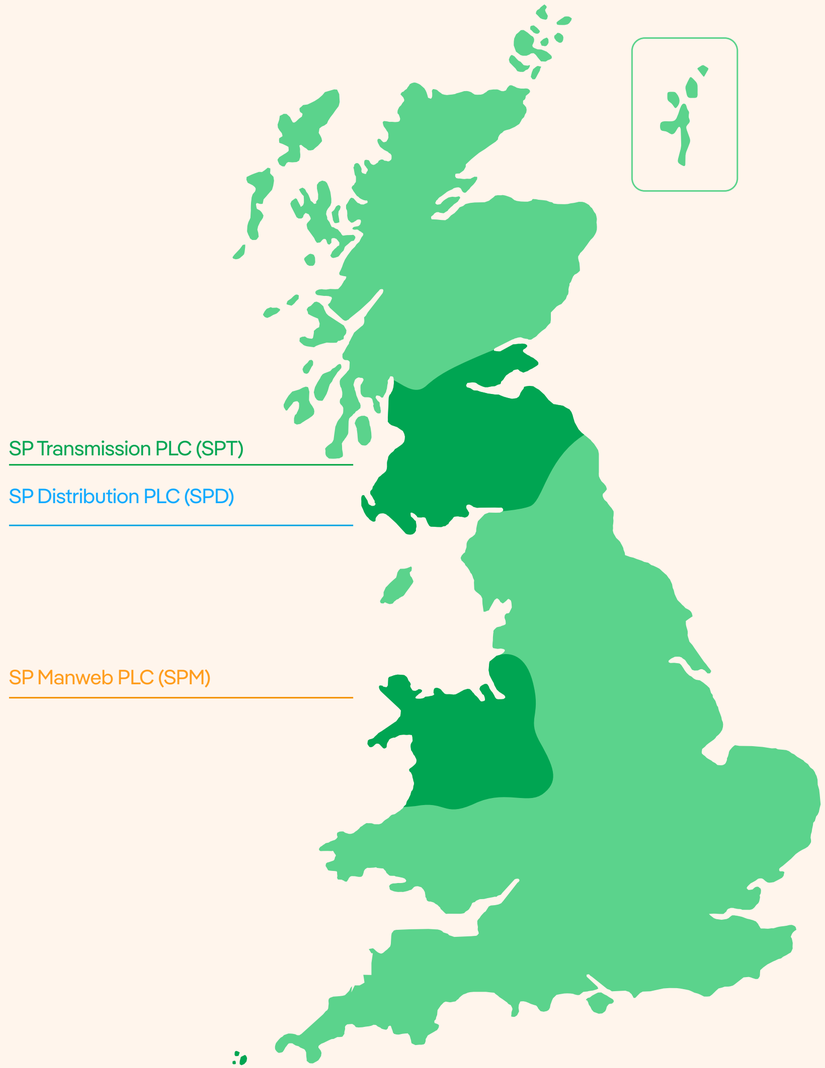
Who we are

SP Energy Networks (SPEN) owns and operates three regulated electricity network businesses in the UK: SP Transmission Plc (SPT), SP Distribution Plc (SPD) and SP Manweb Plc (SPM). Electricity from generators travels across our network to provide power on behalf of energy supply companies through a network of substations, cables and power lines to homes and businesses across Central & Southern Scotland, North Wales, Merseyside, Cheshire and North Shropshire. SPEN is a subsidiary company of ScottishPower UK plc, which is in turn part of the Iberdrola Group, one of the world's largest sustainable utility companies and a Dow Jones Sustainability Index and Global 100 listed company. Please visit our website for more information: What We Do – SP Energy Networks

Metrics

Overhead cables
3,700 km

Underground cables
800 km



Sustainable Business Strategy

Our electricity network connects renewable energy from generators to consumers, so sustainability is built into SPEN's core purpose. This renewable energy facilitates the UK Net Zero GHG ambitions. While building and operating our network to deliver this energy, we must ensure that our own operations are environmentally, socially and economically sustainable.

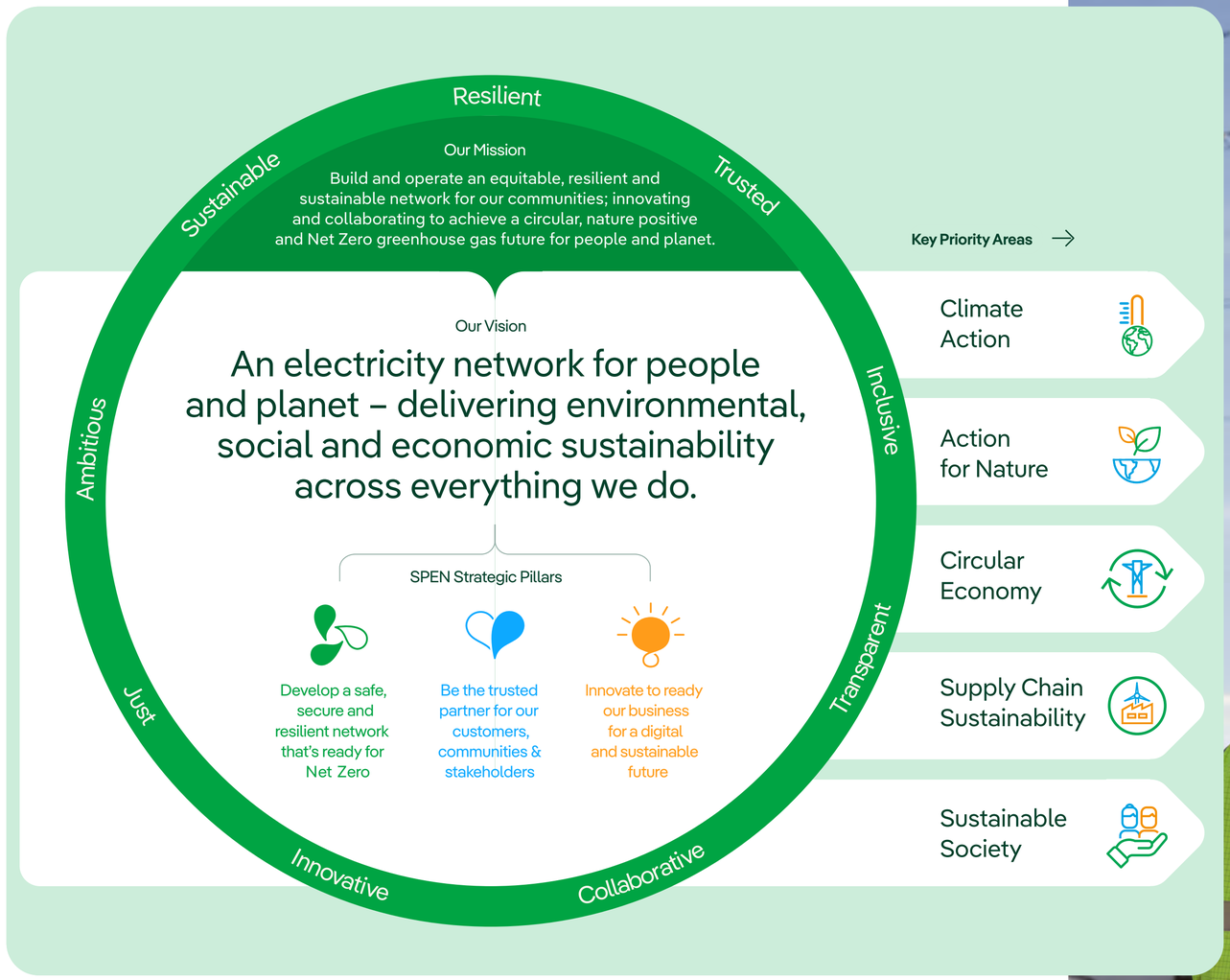
Our Sustainable Business Strategy was developed through years of close collaboration with our stakeholders and is regularly updated in response to internal and external policy developments. This ensures that our business can successfully manage the transition to a low carbon energy system over short, medium and long-term timelines.

Our Sustainability Priorities

We have a clear picture of our sustainability impacts through:

- stakeholder engagement
- the environmental management system
- delivery of actions to date.

From these impacts we have created five priority areas for action, identified by the icons in this graphic.



Our Roadmap to a Sustainable Network

The Roadmap below shows our sustainability goals and targets on our journey to 2040.

T2 (2021 to 2026) is the current Ofgem price control for Electricity Transmission network businesses, (this is the way we are funded to deliver the network). The T2 targets illustrated are outlined in our Transmission Environmental Action Plan.

ED2 (2023 to 2028) is the current Ofgem price control for Electricity Distribution network businesses, the ED2 targets illustrated are outlined in our Distribution Environmental Action Plan.

*carbon is used to refer to all GHG emissions, our metric is CO2e.

ED2 — Electricity Distribution price control

T2 — Electricity Transmission price control

T3 - Electricity Transmission price control

2023

- Divert 95% of waste from landfill
- Just Transition Strategy published
- *Carbon neutrality for Distribution emissions beginning 2023 (excluding losses)

2024

- Set Circular Economy targets

2025

- Elimination of PCBs from our network

2026

- 80% of Transmission suppliers meet our enhanced environmental standards

2027

2028

- Top 5 ranking UK companies in Institute of Customer Services Benchmark
- No net loss of biodiversity across our activities
- 80% Distribution suppliers set Science-based targets (or equivalent)

2029

2030

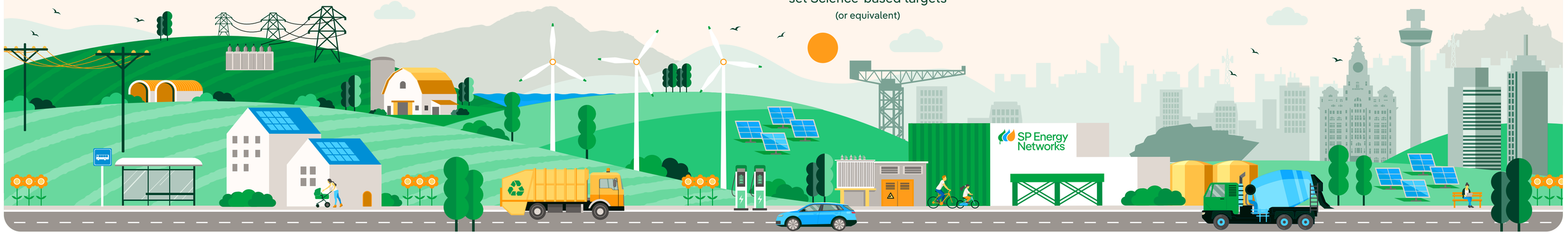
- 100% of waste reused or recycled
- Nature Positive for direct impacts
- Decarbonise 100% of our cars and vans
- Buy and use 50% low emission steel
- 80% reduction in our business carbon footprint (excluding losses)

2035

- Science-based Net Zero greenhouse gases

2040

- Zero Waste business



UN 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:

When considering the breadth of our activities on areas such as Net Zero greenhouse gas 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 priorities, at the centre of our SDG wheel. The long SDGs on the infographic represent our direct contribution, the shorter indirect. As our supply chain contributes to each of the 4 priority areas in the infographic, it has not been mapped separately. Our supply chain accounts for many of the indirect contributions.

The mapping exercise also identified areas of opportunity to enhance our contribution to the SDGs:

- Climate change resilience: integrated in our Climate Action and Action for Nature Priorities
- Water efficiency and protection: integrated in our Circular Economy and Action for Nature Priorities
- Sustainable Society and Circular Economy: distinct priority areas.

SDG & Key Priority Area Mapping

Commitments update

We have numerous, ambitious RIIO-T2 commitments which span across our Key Priority 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 HERE.


Sustainable Society


Supply Chain Sustainability


Climate Action


Action for Nature


Circular Economy

Key Priority Area	Commitment	RAG	Status Update
Sustainable Society	Achieving the Sustainability step-change	G	Progress has been made on all commitments and we are confident that we will deliver these during RIIO-T2.
Supply Chain Sustainability	Supply Chain Sustainability	G	Our Supply Chain commitments have progressed well this year with 71% of our supply chain by value now meeting our enhanced standards.
Climate Action	Strategic Carbon Reduction	G	We continue to perform well against our Business Carbon Footprint Targets; however our emissions rose this year compared to last year due to an exceptional SF_6 leakage event explained further within the Climate Action section.
	Business Carbon Footprint Scope 1	A	During the year there was an 'exceptional' SF_6 leakage event which occurred at Hunterston Conversion Station. This incident led to 226kg of SF_6 being lost to the atmosphere. We procured the first ever commercial order for Hitachi's EconiQ Retrofill system (see Climate Action section). The transition of our operational fleet is behind our RIIO-T2 target. Due to availability of suitable vehicles, we will be unable to meet our target of 72 cars and vans transitioning to EV during RIIO-T2. We are continuing to work with suppliers to pilot various solutions, as well as rolling out our EV charging infrastructure programme.
	Business Carbon Footprint Scope 2	A	We are continuing to deliver our commitments on buildings energy use and losses reduction programmes. Whilst we are behind on delivery of our substation building refurbishment works, the contract was awarded late 2023 and we are now on-track to complete all works during the RIIO-T2 period.
	Business Carbon Footprint Scope 3	G	We are continuing to develop our approach to Scope 3 carbon reduction and delivery of our commitments in this area. During this year of the RIIO-T2 price control we developed a digital version of the carbon product calculator, in collaboration with our supply chain and external stakeholders to further streamline and progress our data collection in this area. Our Truly Sustainable Substation Project developed a benchmark for emissions associated with typical substations and looked at opportunities to reduce emissions – which outlines a route by which we can significantly reduce our overall Scope 3 emissions.
	Climate Change Resilience	G	All of our Flood Risk Assessments have been completed and remediation works at 4 sites are due to commence during 2024. These works will be undertaken by our new Agile Project Unit which has been created to deliver high volume, low complexity programmes of work.
	Net Zero Transition	G	In December 2023, the Net Zero Fund, established to aid vulnerable communities in Central and Southern Scotland on their path to net zero GHG emissions, awarded its first round of grants to six charities and organisations to help them decarbonise and reach their net zero GHG targets sooner by introducing innovative net zero technology. The projects ranged from installation of solar panels and heat pumps to the purchase of electric vehicles and retrofitting listed buildings to increase energy efficiency.
Action for Nature	Pollution Prevention	A	We continue to progress this group of commitments and are on track to deliver these during RIIO-T2. Whilst we are behind on the delivery of our bunding programme, the contract for this programme of works was awarded late 2023 and these works are being delivered by our new Agile Project Unit to ensure delivery during the price control period.
	Land & Biodiversity	A	During the year we have undertaken biodiversity surveys to ascertain the biodiversity net loss on projects associated with our Use It or Lose It (UIOLI) funding. We will deliver biodiversity enhancement projects during years 4 and 5 to achieve no net loss in line with our commitment. Our Customer Value Proposition (CVP), maximising benefit of non-operational land, was reviewed this year due to the volume of new connections that we will need to supply and the resultant reduction in availability of non-operational land. We will now be delivering the CVP with a mix of community projects and microgrants. There continues to be delays with the Natural Capital tool, however we are working with the other TOs and linear infrastructure organisations to pilot the latest version on several projects.
Circular Economy	Sustainable Resource Use	G	During the year we recruited a circular economy specialist to focus and drive change in this area. We continue to face challenges with the data collection required, however during years 4 and 5 will implement new tools and strategies to allow the commitments in this area to be delivered.

Performance Dashboard

Climate Action

67% Long-term GHG reduction target Scopes 1,2,3 by **2035** accredited by SBTi

↑ **98%** Increase in Scopes 1 & 2 (excl. Losses) from last year

↓ **5%** Decrease in Scopes 1 & 2 (incl. Losses) from last year

↑ **141%** Increase in SF_6 emission from last year

PlanetMark **8** Years of continuous certification to the Planet Mark

↓ **48MW** Low Carbon Generation Connections made this year

↑ **£2.89M** Investment in innovation supporting decarbonisation

Supply Chain Sustainability

GOLD SUPPLY CHAIN SUSTAINABILITY SCHOOL — Supply Chain Sustainability School partner

↑ **71%** Suppliers meeting enhanced environmental standards

↑ **66%** Suppliers who have set Science-Based Targets

SCOTTISH BUSINESS CLIMATE COLLABORATION — Development partner for SBCC

— **2** Reportable environmental incidents

Sustainable Society

16 Community Net Zero Carbon workshops delivered since November 2022

£679k Net Zero Fund awarded to charities during Round One

↓ **14.79%** Gender pay gap

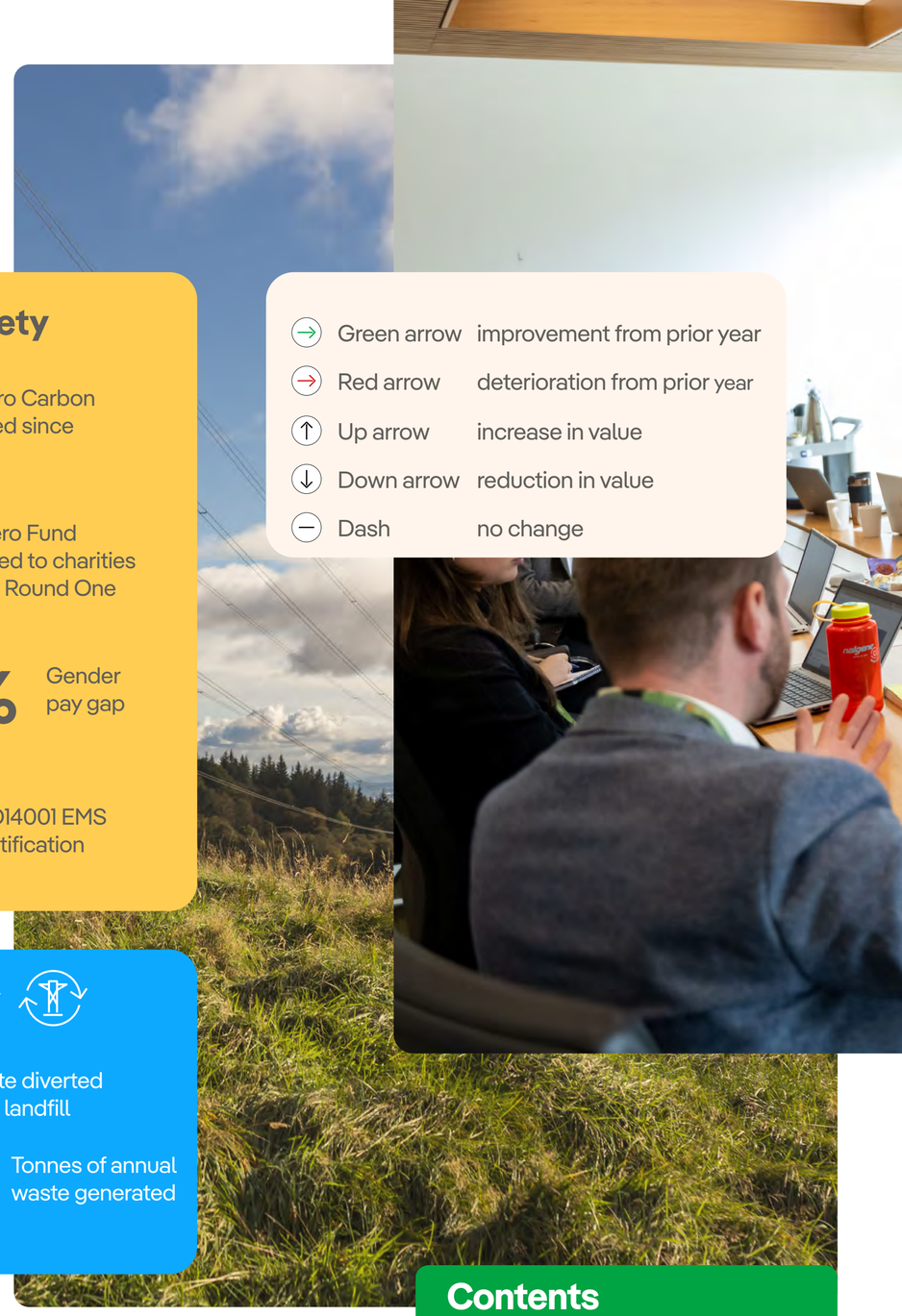
bsi. ISO 14001 Environmental Management — ISO14001 EMS certification

Circular Economy

↑ **98%** Waste diverted from landfill

↑ **52.49k** Tonnes of annual waste generated

→ Green arrow	improvement from prior year
→ Red arrow	deterioration from prior year
↑ Up arrow	increase in value
↓ Down arrow	reduction in value
— Dash	no change



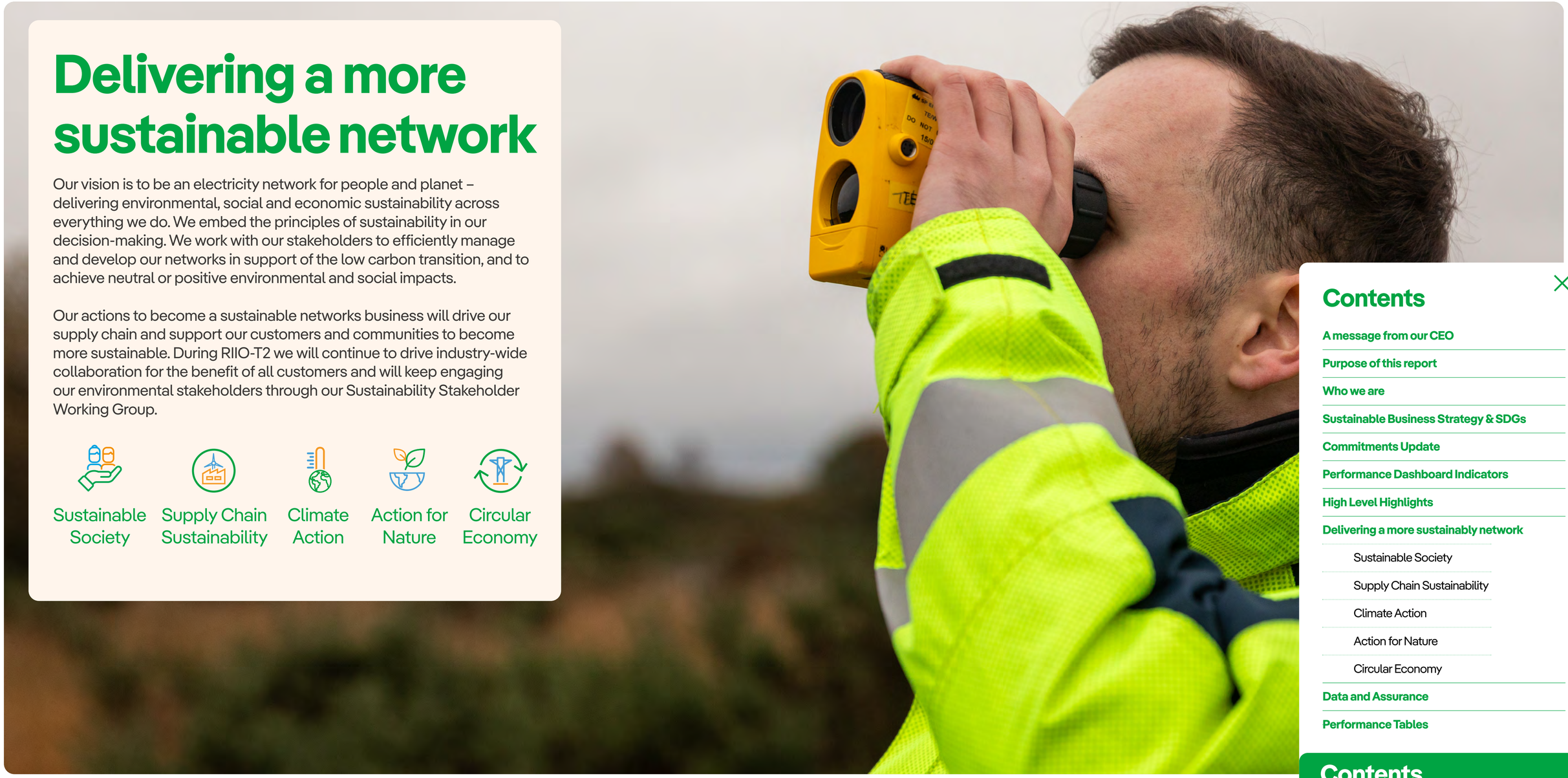
Contents

Delivering a more sustainable network

Our vision is to be an electricity network for people and planet – delivering environmental, social and economic sustainability across everything we do. 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 networks business 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.

Sustainable Society | Supply Chain Sustainability | Climate Action | Action for Nature | Circular Economy



Contents

Sustainable Society

Achieving the sustainability step-change

Activities to improve our sustainability build on a strong foundation of environmental management and compliance. We are committed to environmental compliance and preventing pollution and have embedded processes to ensure this in our business activities. Our ongoing certification to the International Standard for environmental management, ISO14001, which we have held for over a decade, provides evidence of this.

Status update

During regulatory year 2023/24 SPEN maintained our certification of ISO14001 with an external surveillance audit of our Environmental Management System. We are continuing to embed the recommendations and opportunities from this report into our internal systems. In addition, within SPT Major Projects we have implemented a new contractor registration process which requires ISO14001 as a minimum standard for all our contractors.

This year, we have continued to make progress on our commitments and have begun developing an environmental data and reporting strategy. This strategy outlines our vision for data collection and analysis, as well as the necessary tools and timelines to achieve our goals. More details can be found in the Data and Assurance section at the end of the report.

We developed and implemented our sustainability stakeholder engagement plan, that aligns with both our SP Transmission stakeholder engagement plan and wider SPEN business engagement goals.

The Independent Net Zero Advisory Council (INZAC), an independent group of energy industry experts created by SPEN to bring the voice of customers and stakeholders into the heart of our business has marked its first anniversary this year. The INZAC brings together 15 external experts to provide challenge and specialist knowledge to both the distribution and the transmission sides of the business - a first for the industry.

Case Study - Year of Sustainability >

Commitments & Metrics

Contents

Sustainable Society

Year of Sustainability

In April 2023, we launched our Year of Sustainability campaign. The aim of this campaign was to deliver 12 months of knowledge sharing opportunities, case studies, workshops and challenges to help prepare us for working towards a sustainable future.

This innovative approach to our internal communications targeted all employees and focussed on what roles each of us must play. The campaign gave our employees the tools and information to continue their journey towards building the necessary skills to embed sustainability best practice into their daily work and current and future projects.
Highlights of the Year of Sustainability include:

- The number of employees upgrading their vehicles to electric vehicles (EVs) through our EV Salary Sacrifice Scheme tripled
- A 37% increase in the number of employees registering to the Supply Chain Sustainability School, accessing a wealth of information
- An increase in the number of volunteering days inside working hours of 136 days, with further sessions in the pipeline
- New ways of working, improved practices and new collaboration platforms set up, including on the ground knowledge sharing and collaboration sessions with the SPEN executive team and environmental professionals, and further enhanced sustainability and environmental internal engagements.

Legacy of the campaign

Though the Year of Sustainability campaign is over, our work to embed sustainable practices throughout our organisation is continuing.

The way we work with our supply chain, plan our projects and design our processes are rapidly changing. The legacy of this campaign will be continued through sharing sustainability knowledge and tools across the company.

YEAR OF SUSTAINABILITY
S23
Accept the challenge

Year of Sustainability >
Legacy of the campaign >
Commitments
Navigation

Sustainable Society

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to provide challenge and specialist knowledge to both the distribution
and the transmission sides of the business - a first for the industry.

Commitments

We will maintain and continually improve our ISO14001 certified Environmental Management System to achieve 'beyond compliance' environmental performance.	G
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.	A
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.	G
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.	G
We will continue to drive industry-wide collaboration in RIIO-T2 for the benefit of all customers.	G
We will continue to engage our key environmental stakeholders via our Sustainability Stakeholder Working Group, ensuring progress via collaboration activities arising from this engagement.	G
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.	G

Metrics

Year		2021-2022	2022-2023	2023-2024
ISO14001:2015 certification	Certification	Yes	Yes	Yes
Training Plan Delivery	Completion %	94%	61%	98%
Stakeholder Engagement Plan delivery	% of Engagement plan target	-	-	100%

Year of Sustainability >
Legacy of the campaign >
Commitments
Navigation

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

We are continuing to work with our supply chain to improve the sustainability of our projects and programmes of work and ensure consistent reporting across all our supply chain.

During this regulatory year we reviewed our suppliers and contractors to determine those with the greatest impacts and created our priority suppliers list. These 113 priority suppliers account for 90% of all our suppliers by value. This allows us to focus on the suppliers with the greatest impact on our business while allowing our smaller contractors to benefit from the upskilling support we provide through the Supply Chain Sustainability School (SCSS) and Scottish Business Climate Collaboration (SBCC). The SBCC is a platform that small to medium sized enterprises (SMEs) across all industries can access for free. The Climate Action Hub offers a variety of resources. Over 12 e-learning modules cover topics from climate science to calculating their business carbon emissions and creating a carbon reduction plan.

Creating our priority suppliers list has focused our reporting; 71% of our priority suppliers are compliant with our enhanced environmental requirements. These requirements include a review of our supply chain using:

- GoSupply Platform where we assess the environmental, social and governance (ESG) compliance and ambition of our suppliers via a series of scored questions.
- Supply Chain Sustainability School, a learning platform, to evaluate our suppliers' sustainability performance.

Our improved reporting now includes whether our supply chain has publicly committed to, or has achieved, validation of their GHG reduction target by the Science-Based Targets Initiative (SBTi) (or other equivalent external validation process). We are using this as our metric to determine if a supplier or contractor has their own sustainability KPI (as per our T2 Commitment). In regulatory year 2023/24 66% of our supply chain have committed to or have a validated SBT.

We will continue to engage and work in collaboration with our supply chain to further progress the implementation of our enhanced environmental standards over the remainder of RIIO-T2.

Case Study: Contractor Roles and Responsibility >

Commitments & Metrics

Contents

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Contractor Roles and Responsibilities

Within SP Transmission, we are committed to supporting and managing our contractors and suppliers through the key stages of the supply chain, from contract development and framework rollout, through to monitoring and overall management.

In our SP Major Projects department of SP Transmission, we have created a new contactor registration process. This process was developed in collaboration with our contractors and aims to streamline the on-boarding process for all our contractors and ensure that they meet our health, safety, environmental and sustainability standards. During the on-boarding process contractors are required to provide evidence that they have met certain environmental and sustainability standards, such as providing progress meeting/reports and data points, signing up to the Supply Chain Sustainability School, performing regular audits and reporting key sustainability goals. Should a contractor not meet the minimum requirements, then we will work with that supplier to create a pathway that will allow them to upskill and meet our required standards.

When a contractor has successfully completed the registration process they will be able to tender for works for two years. After those 2 years, they will go through the registration process again to ensure that key documentation remains current and correct.

The aim is to have clarity on the process and to have an effective feedback loop, reducing the burden of tendering on both SPT and contractors by reducing the number of documents required and volume of TQ's during the tender process.

Case Study: Contractor Roles and Responsibility >

Commitments & Metrics

Navigation

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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.	G
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.	G
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.	G
We will target more than 80% of RIIO-T2 suppliers (by value) meeting these enhanced environmental standards.	G
We will report on the actual percentage of suppliers (by value) meeting these standards.	G
We will engage with suppliers throughout the duration of their contracts to continue to reduce impacts and optimise benefits.	G
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.	G
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.	G
We will engage with suppliers early in the development of projects to enable them to propose environmental improvements at concept and design stages.	G

Metrics	2022/23	2023/24
Percentage of suppliers (by value) meeting our enhanced environmental standards	47%	71%
Percentage of suppliers (by value) that have their own sustainability metrics or KPIs (SBT)	57%	66%

Case Study: Contractor Roles and Responsibility >

Commitments & Metrics

Navigation

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 GHG model focused on low carbon renewable generation. The development and maintenance of our infrastructure is a key enabler for energy security and achieving Net Zero GHG emissions.. During this time of unprecedented network growth, 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 and to achieve them, we will need transformation at every level of our business. We must determine the most cost effective interventions by identifying the options available and considering their costs against the quantity of carbon reduction. Thus ensuring that we achieve carbon savings at an efficient cost to our customers.

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 heating will frequently also be the most vulnerable in society.

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

Contents

Net Zero Fund

In August 2022, SP Energy Networks launched the £5 million Net Zero Fund to aid vulnerable communities in Central and Southern Scotland on their path to net zero GHG emissions. The fund, which supports community organisations with decarbonisation goals, operates in three phases: workshops, project planning and funding.

Net Zero Workshops

The Net Zero Fund offers two different types of workshops: general workshops which target a broader audience and tailored community workshops which focus more locally. The first general net zero workshop held in January 2023, introduced over 70 stakeholders to net zero solutions. Additionally, the fund has delivered 16 tailored community workshops since November 2022. Over 130 community representatives have attended these workshops where they explored local challenges and routes to net zero.

Workshop was a breath of fresh air and gave us the knowledge to move the project forward
– Community Workshop Attendee.

Project Planning and Feasibility Support

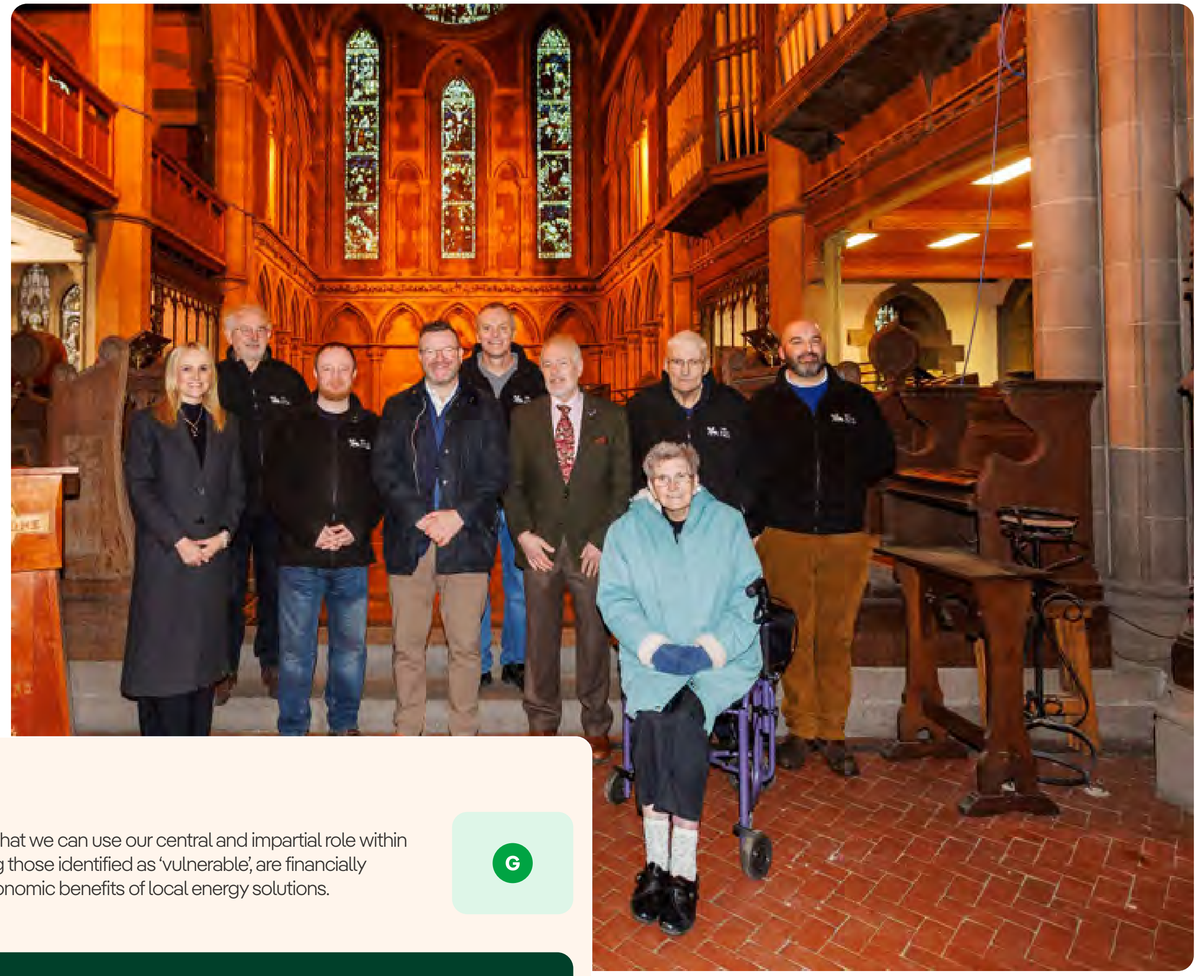
This phase offers additional support to local communities to develop their net zero ideas and projects. From July to August 2023, expert support was provided to six eligible applicants to firm up their ideas and formalise their project plans to get their projects ready for delivery.

Funding Support

In December 2023, the fund awarded its first round of grants to six charities and organisations to help them decarbonise and reach their net zero targets sooner by introducing innovative net zero technology. The projects ranged from installation of solar panels and heat pumps, to the purchase of electric vehicles, and retrofitting listed buildings to increase energy efficiency.

- Food Train's Stewartry branch offering essential food deliveries to older people across Dumfries and Galloway have been awarded £100,000 to upgrade and electrify its fleet of delivery vehicles
- An Ardrossan Scout group has been awarded £93,000 to carry out extensive sustainable upgrades to a community hall with low carbon technology - set to reduce emissions by nearly 400%
- Govan Heritage Trust have been awarded £150,000 from the Net Zero Fund. This historic church will be heated using clean energy harnessed direct from the River Clyde - reducing carbon emissions by over 90% and saving 20% in energy bills.

The second funding round opened in February 2024, with a significant increase in applications due to media coverage. The Net Zero Fund will conclude in January 2026, all projects must be completed by then. The next set of successful applicants will be awarded by August 2024.



Commitments

For RIIO-T2 we have proposed a £5m Net Zero Fund so that we can use our central and impartial role within the energy system to ensure local communities, including those identified as 'vulnerable', are financially supported to maximise the social, environmental and economic benefits of local energy solutions.

G

Metrics	Round one
Funding awarded	£679,000
Tailored community workshops	16
Community representatives present	130

Contents

Connecting Low Carbon Generation

Status update

Similar to our Annual Environmental Report 2022/23, we continue to see unprecedented levels of connection applications being made to connect generation and demand projects to our transmission network. With over 700GW[1] of contracted capacity currently in the GB-wide transmission and distribution queues, there continues to be a pressing case for significant reforms to the existing connections process. We therefore continue to be fully engaged in the Electricity System Operator (ESO) and Ofgem led Connections Reform work. SPT is working closely with Ofgem, Government, the ESO, other network operators and industry, ensuring full SPT representation on the key working groups which are considering and driving forward these necessary industry changes: these key working groups include the Connections Delivery Board, the Connections Process Advisory Group, the ENA's Strategic Connections Group and the connections reform code working groups CMP434 and CMP435.

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

Metrics

Year		2021/22	2022/23	2023/24
New low carbon generation connections	MW	186	534	48
Low Carbon Share of Generation %	%	88.5%	89.5%	89.7%
Average time to issue connection offer	Days	69	74	71
Connection offers accepted	Number	74	219	220
Quality of Connections ODI score	1-10	8.3	8.2	8.3
Quality of Connections ODI target	1-10	8.3	8.4	8.6

[1] ENA Connections Dashboard: Connections Data – Energy Networks Association (ENA)

Contents

Innovation

Network Innovation Allowance (NIA) Project - Truly Sustainable Substation NIA Project (TruSS) The TruSS Project provides a blueprint for best practice in sustainable substation design, including benefits analysis, an implementation roadmap and an opportunities register, focussing on the principles of circular design, whole life carbon reduction and nature-based solutions.

The projects key aims are to:

- Minimise the carbon emissions of the substation across its lifetime
- Reduce raw material usage and waste throughout the full life cycle
- Enhance biodiversity and Natural Capital, and improve the resilience of substations to climate change by using nature-based solutions.

A summary of findings is shared below for each area:

Whole Life Carbon and Net Zero:

The whole life carbon assessments identified several carbon hotspots within substation designs. The study also identified several opportunities for reducing whole life carbon emissions. These are mainly attributed to materials in construction, but other opportunities to consider operational efficiency and replacement will be explored as next steps.

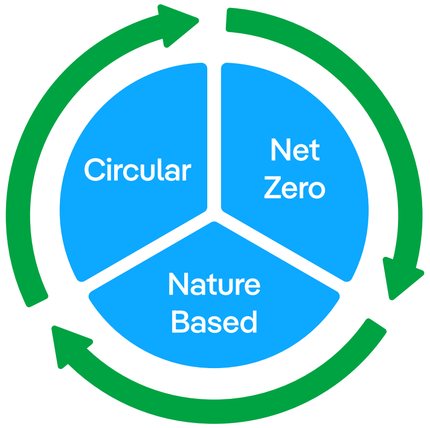
Circular Economy:

Review of the substation designs identified opportunities to increase the overall circularity of substations, including material procurement options and specification. Based on the baseline analysis, all substation types assessed have the potential for increased circularity without compromising the function of the substation itself.

Nature-based Solutions:

Current design standards for substations have limited, to no integration of Nature-based Solutions. However, the study identified some opportunities to revise engineering design standards to increase biodiversity provision within substation design and highlighted solutions which may be taken forward as a pilot.

Substation lifecycle



Metrics	Baseline	2018/19	2022/23	2023/24
Ongoing innovation activities that are primarily supporting decarbonisation and/or protecting the environment	£0.25m	£2.76m	£2.62m	£2.89m

Contents

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 (excludes losses).

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.

Scope 1: Direct emissions associated with fuel used, SF_6 and other refrigerant gas leakage which occur from assets we own or control.

Scope 2: Indirect emissions associated with either energy consumed in assets we own or control, and electricity lost as we transport electricity from supply to our customers.

Scope 3: All other emissions which occur as a result of our activities. These are upstream emissions predominantly associated with our supply chain.

Status update

In 2023/24, our annual BCF (excluding losses) was 18,481 tCO_2e. This is 9% lower than in 2013/14 when we first started measuring our BCF, and 15% lower than our 2018/19 RIIO-T2 baseline.

Our 2023/24 annual BCF emissions increased from the previous year principally due to an 'exceptional' SF_6 leakage event which occurred at Hunterston Conversion Station in June 2023. This incident led to 225.8kg of SF_6 being lost to the atmosphere. The event was caused by a disruptive failure of cable termination leading to the loss of insulating and interruption gas (IIG) from the associated gas-insulated switchgear (GIS) gas compartment. This was recognised as an 'Exceptional Event' by our regulator, Ofgem, who agreed that the event could not have been reasonably foreseen and prevented. This event led to an increase of 5,311 tCO_2e which accounts for 29% of this year's Business Carbon Footprint (excl. Losses). The majority of the rest of the leaks were caused by our older gas insulated switchgear at Torness. We expect to have the majority of known leaks repaired within the next two years.

We continue to make progress in fixing known leaking assets, through our repair programme and robust fault processes, and we anticipate that we will get back on track for the remainder of RIIO-T2 and continue to decrease our BCF in line with our targets, pending any further exceptional SF_6 leakage events.

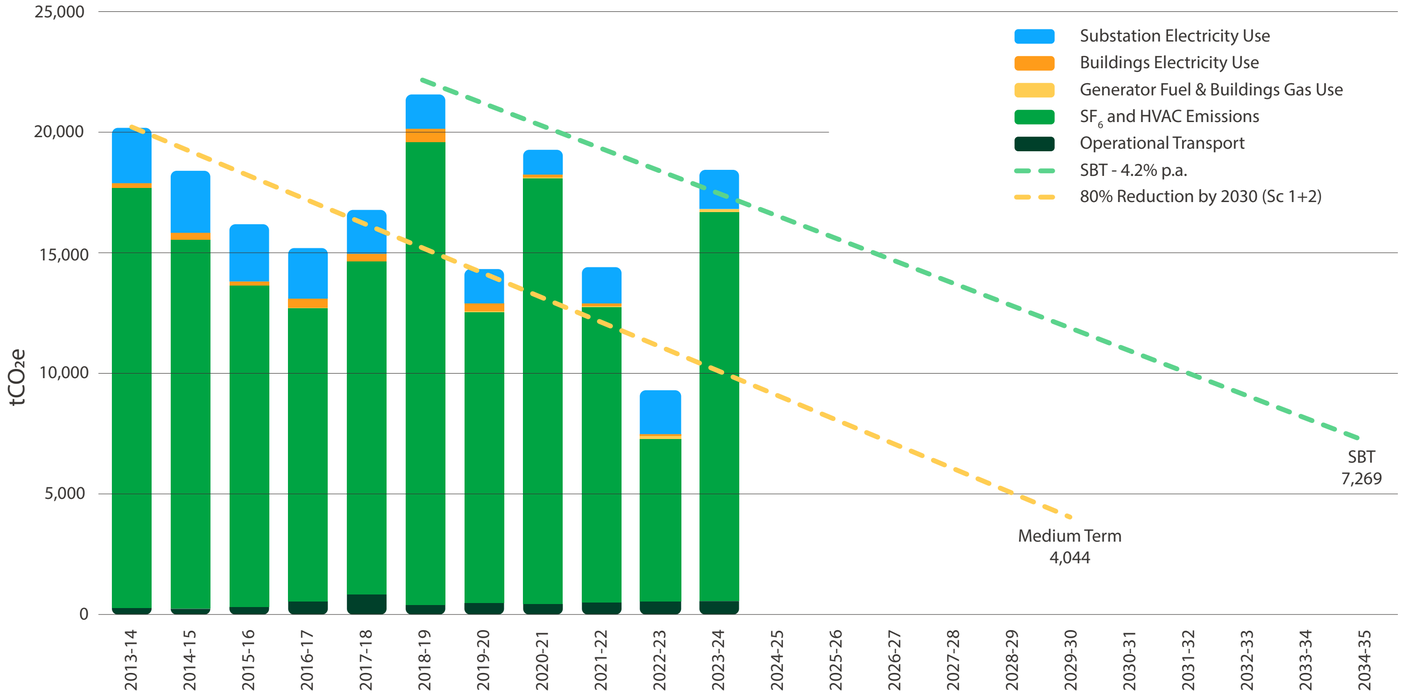
Scopes 1&2 BCF Charts >

Case Study: Planet Mark Validation >

Commitments & Metrics >

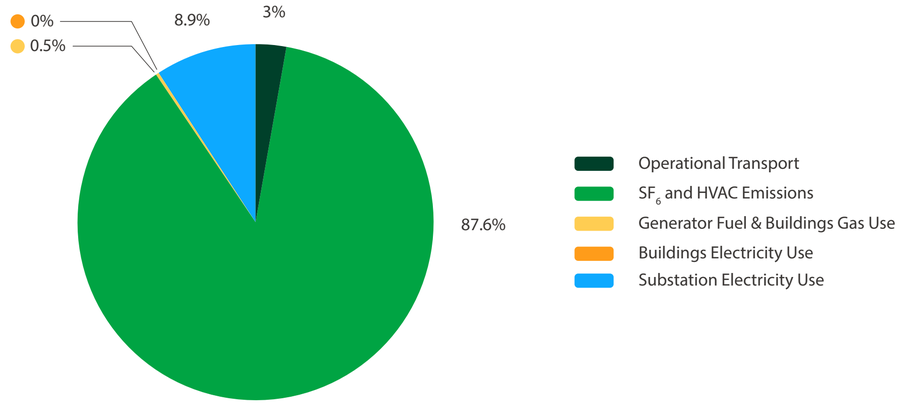
Contents

Scope 1&2 Business Carbon Footprint (excl. Losses)



The medium term target of 80% reduction by 2030 relates to Scopes 1 and 2 only. The Science-based Target (SBT) also includes Losses in the overall percentage reduction

2023/24 Business Carbon Footprint by category



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Planet Mark Validation

This year we achieved Planet Mark Business Certification of our Business Carbon Footprint for the 8th year, in accordance with ISO 14064-3 (2019). 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.

PlanetMark

Scopes 1&2 BCF Charts >
Case Study: Planet Mark Validation >
Commitments & Metrics >
Navigation

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Commitments

We will implement processes for carbon management in relevant business activities, aligned with PAS 2080 Carbon Management in Infrastructure.	G
We will adopt a science-based target for scope 1*, 2* & 3 carbon reduction.	G
We will identify, and subsequently monitor, metrics to track progress towards our science-based carbon reduction targets.	G

Metrics

Emissions in tCO_2e	Specific area	Baseline 2018/19	Year 1 2021/22	Year 2 2022/23	Year 3 2023/24
Scope 1 - Operational Transport	Road	433	518	584	558
Scope 1 - Fugitive emissions	SF_6	19,184	12,085	6,703	16,180
	HVAC	0	170	2	0
Scope 1 - Fuel combustion	Generator Diesel & LPG	0	9	100	29
Scope 1 - Building energy use	Buildings gas	21	47	45	59
Scope 2 - Building energy use	Buildings electricity	540	92	57	0
	Substation electricity	1,439	1,505	1,849	1,653
Scope 2 - Electricity losses		202,371	132,554	165,625	148,177
Total excluding losses		**21,617**	**14,425**	**9,340**	**18,481**
Total including losses		**223,988**	**146,979**	**174,966**	**166,658**

Scopes 1&2 BCF Charts >
Case Study: Planet Mark Validation >
Commitments & Metrics >
Navigation

Operational transport

In September 2019, our parent company Iberdrola signed up to The Climate Group's EV100 initiative. The agreement will see Iberdrola electrify vehicle fleet (subject to local market conditions) by the end of 2030. Our RIIO-T2 target is to decarbonise our operational fleet by replacing 100% of our 72 cars and vans* with electric alternatives by the end of T2.

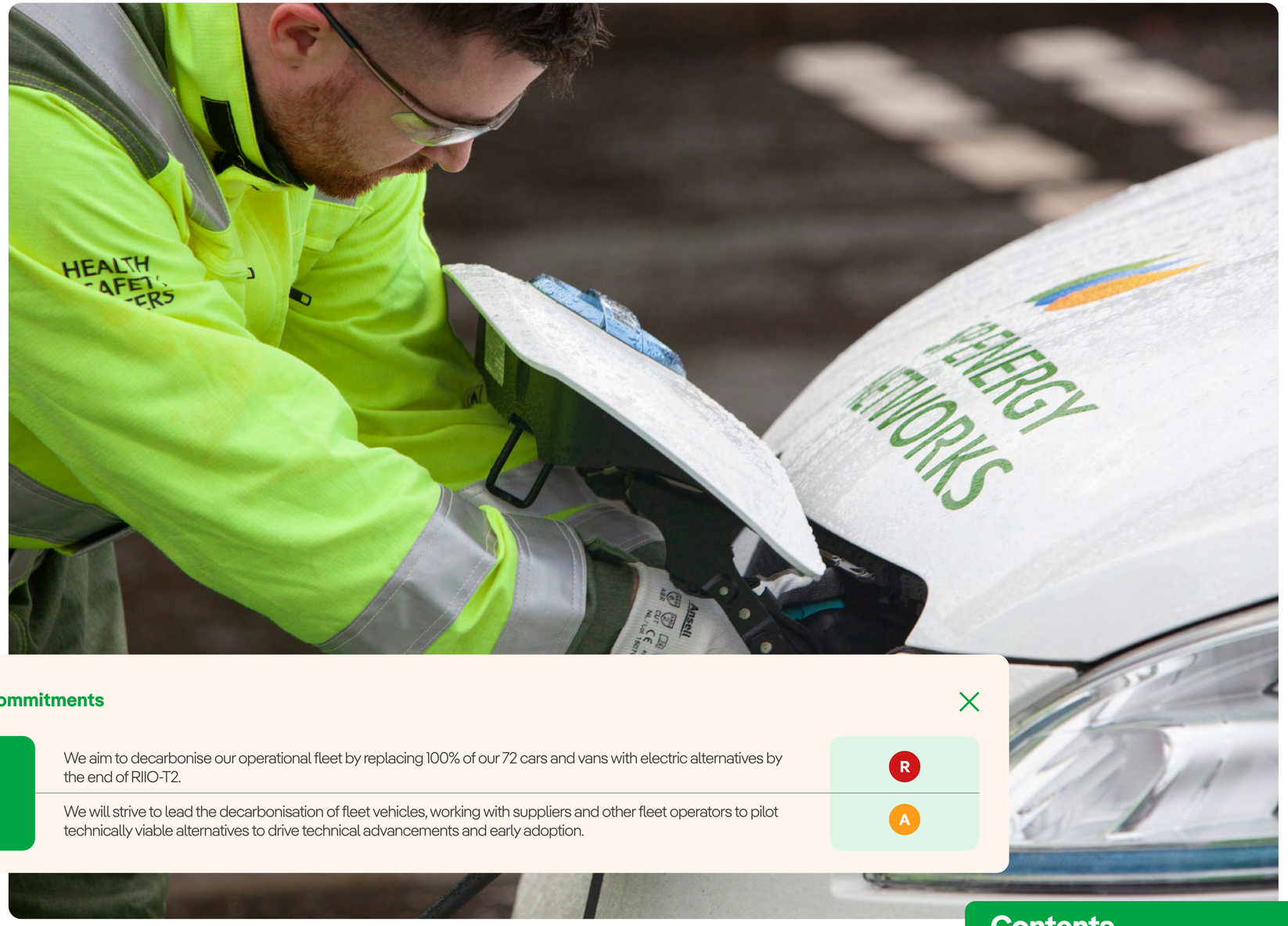
Status update

We have replaced four combustion vehicles with electric vehicles since the start of RIIO-T2. This is less than our target. We are forecast to electrify all cars and small vans by the end of RIIO-T2, this represents 21% of our fleet when compared to the original target of 72. However, we are unlikely to achieve our ambitious target of fully electrifying medium and large vans and 4x4s by the end of RIIO-T2. This is due to a combination of market availability and performance issues related to range and payload. To address these issues, we continue to work with the industry to support the development of new vehicles. Initial trials of 4x4 and similar Light Commercial Vehicle applications are being pursued, with two model lines identified as suitable for applications within our Transmission business.

After our successful pilot of several models of 22kWh electric vehicle charging points within four different substation environments, we have selected a preferred option which will now be rolled out to our strategic substations during the final two years of RIIO-T2.

We have also identified the need for worksite charging within substation compounds and are working with our engineering teams to develop a new specification for electric vehicle charging infrastructure within substations that will see additional capacity realised to support fleet vehicle charging adjacent to plant.

We are continuing to work with teams across the business to develop the standards and specifications required to ensure that new build Transmission substations will have the provision for 'ultra-fast EV chargers' at strategic locations.



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.	R
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.	A

*Vans = small, medium and large vans and 4x4's.

Contents

Fugitive emissions

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, 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 2023/2024 was 0.54%. However, this includes 226kg of SF_6 lost as a result of a disruptive failure at our Hunterston Converter Station. The failure of a cable termination combined with the design of the switchgear meant all contained gas was immediately vented into the atmosphere. This was an exceptional event under Special Condition 4.13.12 in our licence.

Our older gas insulated switchgear at Torness, which made up the bulk of the rest of the leaks, will have the majority of known leaks repaired within the next two years and we are actively looking into innovative approaches to allow repairs at full working pressure to aid with any future leaks. In addition to our SF_6 repair plan our operational department have continued to diligently monitor all SF_6 and other gas filled equipment to anticipate problems, analyse issues and repair any leaking assets, without undue delay. Currently all circuit breakers that have been identified as emitting gas previously, that are not in the T2 SF_6 repair plan, are on a register with an agreed intervention, ranging from enhanced monitoring to repairs facilitated by the original equipment manufacturer.

SPT are continuing to plan for new alternative IIG assets being installed on the network ensuring we have the right equipment and training for all gas mixtures and types.

Case Study – Hitachi SF_6 free EconiQ >

Commitments & Metrics >

Contents

Fugitive emissions

Hitachi SF_6 free EconiQ

During year three of the price control SPT worked with Hitachi Energy to place the first-ever commercial order for EconiQ retrofill. This project also includes the delivery of four new Gas insulation Switchgear bays to expand the Hunterston substation's overall capacity.

SPT is set to upgrade its Hunterston 400 kV gas-insulated switchgear (GIS) substation with Hitachi Energy's innovative EconiQ high-voltage technology by 2025. The Hunterston GIS substation, built in 2016, is a crucial grid connection in the Scottish transmission network.

This project represents a significant step in helping SP address the changing demand characteristics while meeting future regulatory net zero targets. Innovative solutions and new technologies like the Hunterston project are critical components for SP Energy Networks to achieve this transition.

EconiQ is Hitachi Energy's eco-efficient portfolio for sustainability. It uses game-changing technology containing no sulphur hexafluoride proven to significantly reduce carbon footprint throughout the entire lifecycle.

The reconfiguration of over 350 metres of SF_6 Gas insulated pipework and removal of over two tonnes of SF_6 gas is a clear demonstration of Scottish Power's commitment to a greener future delivering a robust supply to our customers.

The project is complex in nature, but we have an excellent project team and working together with Hitachi we are confident we can be ready for 2025.

Case Study – Hitachi EconiQ >

Commitments & Metrics >

Navigation

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Commitments

We will continue to require manufacturers to provide equipment with an SF_6 leakage rate which is half that of the internationally recognised standards, where technically viable.	G
We will continue to carefully monitor and manage our assets to minimise SF_6 leakage, repair leaks quickly, and where this is not possible, replace the asset before its anticipated end of life.	G
Where a repair to a leaking asset proves ineffective and the asset requires to be replaced, we will offset the SF_6 emissions from that asset until its replacement via a Carbon Offsetting partner.	G
We will use alternatives to SF_6 insulating gas for all new circuit-breakers and GIS installations where there are technically feasible market-ready solutions.	G
We will drive the development and adoption of SF_6-free technologies, collaborating with supply chain and industry peers and piloting new technologies where technically viable.	G

Metrics

Year	Unit	Baseline 2018-2019	Year1 2021-2022	Year2 2022-2023	Year3 2023-2024
Total IIG emissions	tCO_2e	20,103	12,196	6,839	16,291
SF_6 emissions	tCO_2e	20,103	12,196	6,839	16,291
Other (IIG) emissions	tCO_2e	0	0	0	0
Leakage rate	%	0.86%	0.45%	0.23%	0.54%
Interventions per annum	Number	0	0	0	0
Estimated impact of interventions	tCO_2e avoided/ abated	0	0	0	0

The figures in the IIG table above are taken from the E1.4 RRP table. There are slight differences in the reporting between the Business Carbon Footprint and the IIG table due to two factors:

1. SF_6 emissions as stated in the BCF are as per the Ofgem RRP guidance and based on BEIS/DEZNES conversion factors (in line with GHG Protocol) of 22,800kgCO_2e for 2021/22 and 2022/23. However, for IIG Incentive reporting Ofgem require us to convert using 23,500kgCO_2e in line with the latest UN IPCC report.

2. the timing of table production, any differences will be reconciled and compensated in the following years tables/reports.

Carbon Offsetting

We have a commitment to offset SF_6 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 5,300 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.

In 2023/24, SP Energy Networks supported the Lauder Hill Project by purchasing 2,300 tCO_2e of pending issuance units (approximately a quarter of the total project).

Lauder Hill is a new mixed woodland creation project around the lower parts of Lauder Common in the Scottish Borders. A mixture of species have been planted which will enhance biodiversity, protect watercourses and sequester carbon dioxide.

The project was developed by Tweed Forum (Scottish Borders based environmental charity) working closely with Scottish Borders Council and the Lauder Common Good Fund Committee. The approval of the project followed extensive consultation under the Community Empowerment Act. The woodland forms part of the Queen's Green Canopy, a tree planting project that celebrated the late Queen's platinum jubilee.

Pending issuance units are expected to mature into woodland carbon units as the woodland matures and, in time, this is expected to offset the emissions associated with SF_6 leakage from any failed repairs in 2023/24.

Lauder Common - New Native Woodland

Country	Scotland
Location	Lauder, Scottish Borders
UK grid reference	NT514486
Project completion date	Autumn 2021
Species planted	Aspen, Birch, Cherry, Blackthorn, Alder, Hawthorn, Hazel, Holly, Oak, Rowan, Scots Pine, Willow, Norway Spruce & Juniper
Meets UK Forestry Standard	Yes
Woodland Carbon Code Status	Validated

Commitments & Metrics >

Contents

Scope 2 emissions

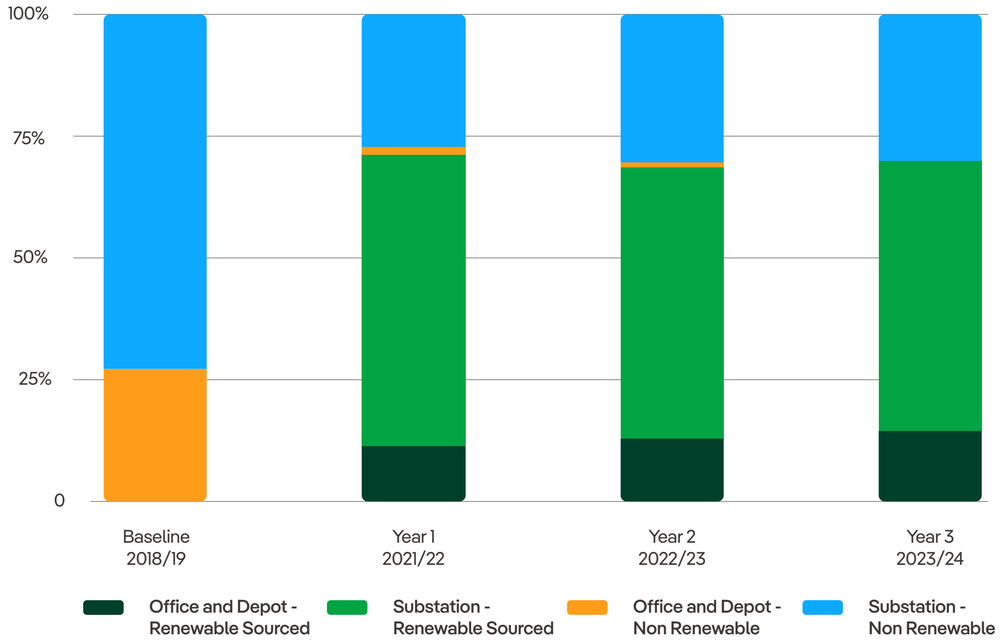
Buildings energy usage

Since September 2019, we have purchased green electricity through a 100% UK-based renewable energy tariff backed by Power Purchase Agreements (PPA) for our depots and offices. All energy used under this tariff has a carbon emissions factor of zero, significantly reducing the carbon footprint of the energy we use. In addition to our depots and offices, we source PPAs for all metered substations and we are continuing to progress our RIIO-T2 substation building refurbishment programme.

Status update

The planning phase of our RIIO-T2 building refurbishment programme has been completed and the framework for the refurbishment works of 48 of our substations was agreed late 2023. These works are behind in delivery however, we have created a new Agile project unit within our SP Transmission Major Projects area, to deliver these high volume, low complexity works. We are confident that we will be able to meet our commitments in this area during the RIIO-T2 period.

Energy Use in Offices, Depots and Substations



Commitments & Metrics >

Contents

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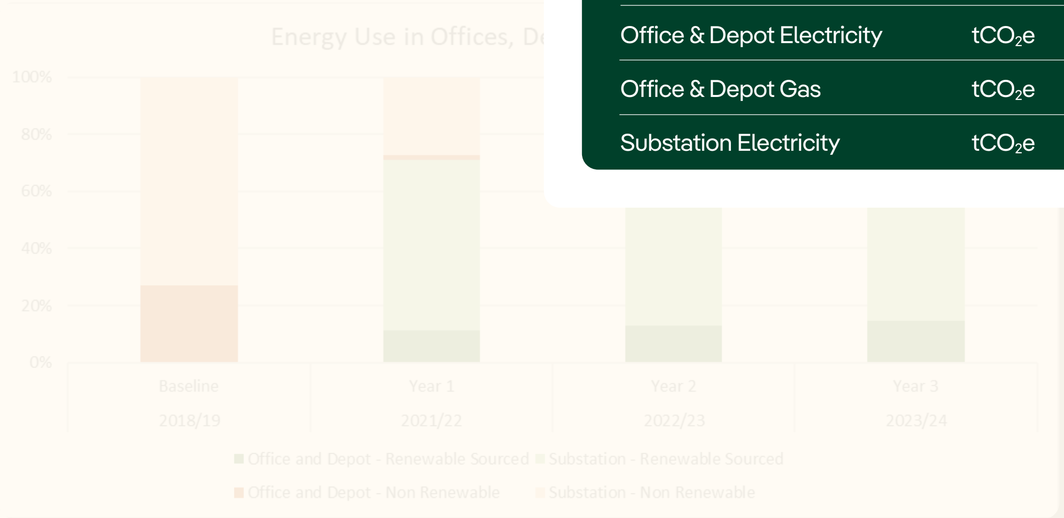

Commitments

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.

A

Metrics

Year	Unit	Baseline 2018-2019	Year 1 2021-2022	Year 2 2022-2023	Year 3 2023-2024
Office & Depot Electricity	tCO_2e	540	92	57	0
Office & Depot Gas	tCO_2e	21	47	45	59
Substation Electricity	tCO_2e	1,439	1,505	1,849	1653

Commitments & Metrics >

Navigation

Scope 2 emissions

Network Losses

Losses are an inevitable consequence of transferring energy across electricity networks, from generation to demand. Transmission losses are mainly due to the heating of various network components. We have committed to reducing 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 lower loss equipment. To date, asset replacement has been completed on a number of transmission circuits, saving in the order of 400MWh in losses per year, (assuming 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 reduction and we expect to reach our target by the end of RIIO-T2.

As the size, complexity and loading of our network increases, our losses are also expected to increase, due primarily 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.

Commitments & Metrics >

Contents

Scope 2 emissions

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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.

A

Metrics

Year	Unit	Baseline 2018-2019	Year 1 2021-2022	Year 2 2022-2023	Year 3 2023-2024
Electricity losses	tCO_2e	202,371	132,554	165,625	148,177
Annual losses	TWh	0.72	0.637	0.856	0.716
Share of total electricity	%	n/a	1.75	2.39	2.09

Commitments & Metrics >

Navigation

Scope 3 emissions

Scope 3 emissions account for approximately 39% of our overall carbon footprint. These emissions include upstream impacts largely associated with our supply chain. Scope 3 emissions are classified into categories in accordance with the Greenhouse Gas Protocol.

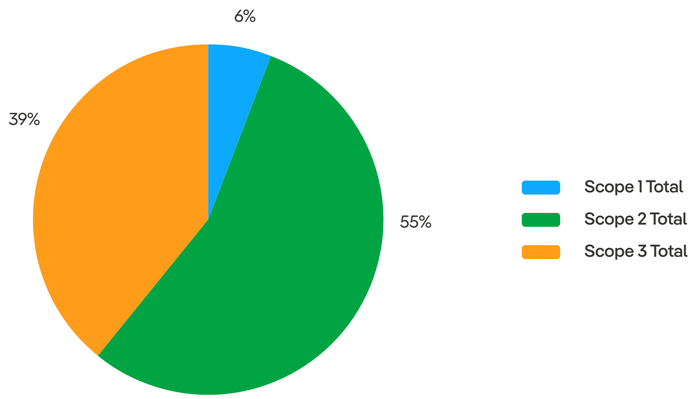
Emissions in Categories 1 & 2 (associated with the goods and services we purchase) account for almost two thirds of our scope 3 emissions. Ongoing work indicates that the majority of emissions within this category are associated with the development of infrastructure. Managing the carbon emissions associated with infrastructure development by aligning to the principles of PAS 2080 and developing a better understanding of embodied carbon are key in reducing these emissions streams.

The other significant source of scope 3 emissions is fuel and energy related activities, this is primarily associated with the upstream production of electricity which is lost as we transport electricity along our network. Emissions are expected to reduce as the UK electricity grid continues to decarbonise.

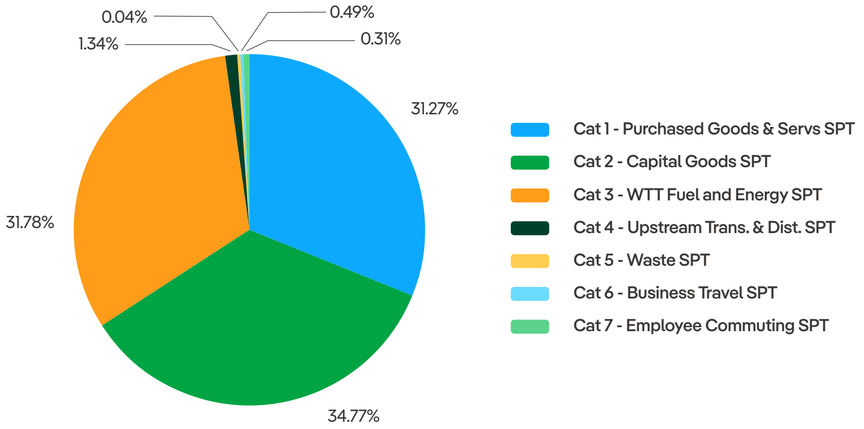
Status update

We have set Science-based Targets for Scope 3 and we continue to improve the way we measure emissions. The accurate reporting of Scope 3 emissions is a significant challenge, particularly measuring impacts relating to products and services which we procure, given the complexity and diversity of our global supply chain.

SPT Carbon Footprint



Scope 3 Baseline Breakdown by Category



Case Study – Product Carbon Calculator Tool >

Contents

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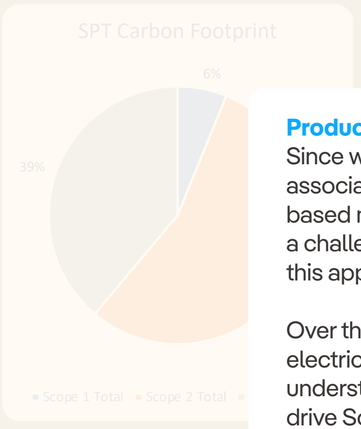
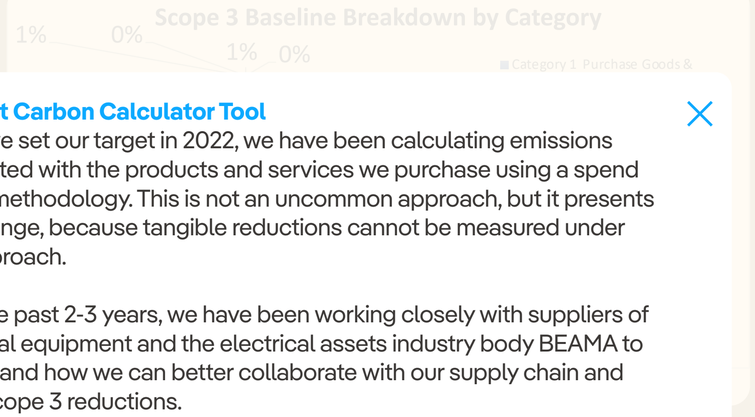




Product Carbon Calculator Tool

Since we set our target in 2022, we have been calculating emissions associated with the products and services we purchase using a spend based methodology. This is not an uncommon approach, but it presents a challenge, because tangible reductions cannot be measured under this approach.

Over the past 2-3 years, we have been working closely with suppliers of electrical equipment and the electrical assets industry body BEAMA to understand how we can better collaborate with our supply chain and drive Scope 3 reductions.

In 2023/24 we developed a digital Product Carbon Calculator Tool. This measurement tool enables electrical equipment suppliers to submit the carbon footprint of any electrical equipment supplied to us.

The focus for next year will be working with suppliers to use the tool and collaborate with the industry to push for a common methodology when requesting this information from our supply chain.

Sustainability Tool
measuring performance

Business Travel
Case Study – Product Carbon Calculator Tool >
Commitments & Metrics >
Navigation

Business Travel

Status update

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 since we started measuring our footprint. In the first year of RIIO-T2, emissions were low due to COVID-19 pandemic. Although we have seen a rise in business transport emissions since last year, this is due to an increase in overall miles travelled. The overall emissions per mile have decreased slightly which is partly due to a decrease in transport emissions factors and because of different travel choices (e.g., higher use of electric vehicles for business travel).

Metrics

Year	Unit	Baseline 2018-2019	Year1 2021-2022	Year2 2022-2023	Year3 2023-2024
Business Travel (excluding contractor business travel)	tCO_2e	547	369	474	517
	Miles	2,119,675	1,373,064	1,903,919	2,087,380
	$kgCO_2e$/mile	0.258	0.269	0.249	0.248

Case Study – Product Carbon Calculator Tool >

Commitments & Metrics >

Contents

Embodied Carbon & Carbon Management in Infrastructure

Embodied carbon is defined by the UK Green Buildings Council Guidance as the emissions generated to produce a built asset. We have interpreted this as including all product stage, transport related and construction related emissions associated with the production of our infrastructure. To meet our 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.

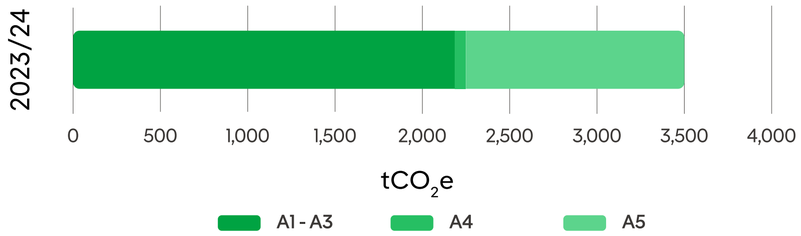
Links to sections will only be available on digital version. PFD does not have this functionality.

Status update

Working with the other Transmission Operators, we have developed a common methodology for reporting embodied carbon. Further information can be found in Appendix A.

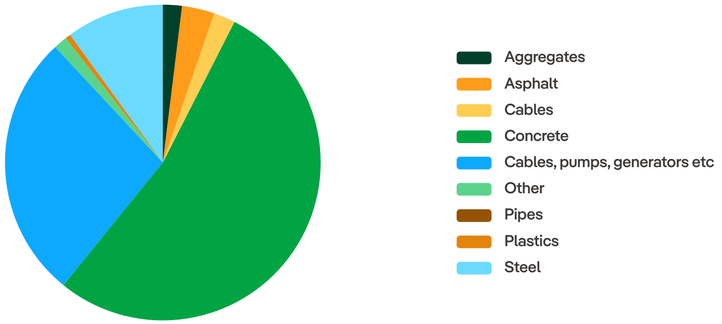
Developing Embodied Carbon Assessments from Final Designs

Embodied carbon has been estimated using final design information. The chart below shows the embodied carbon breakdown by lifecycle stage for 3 linear infrastructure and 4 civils projects completed during the year. Embodied carbon has been estimated using final design information. The majority of emissions are associated with the products used to develop our network.



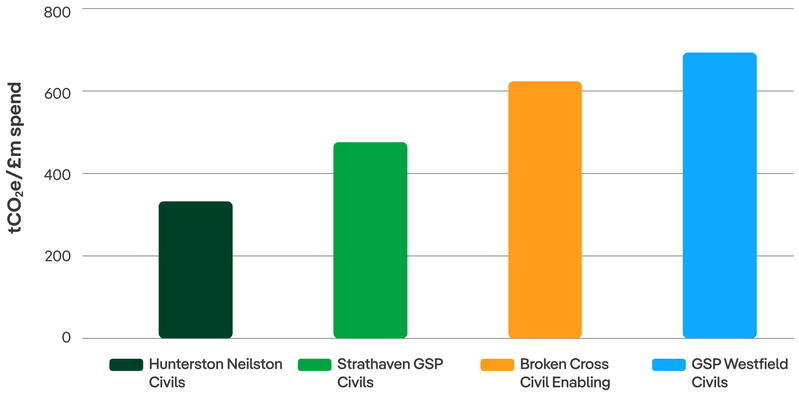
A1-A3 – embodied carbon of materials and products represents the largest source of emissions.
A4 – transport emissions associated with moving materials and products to site accounts for a relatively small source of emissions.
A5 – site energy use, including diesel used in plant and generators is estimated to account for a significant proportion of emissions.

Breakdown of A1-A3 emissions by resource type.



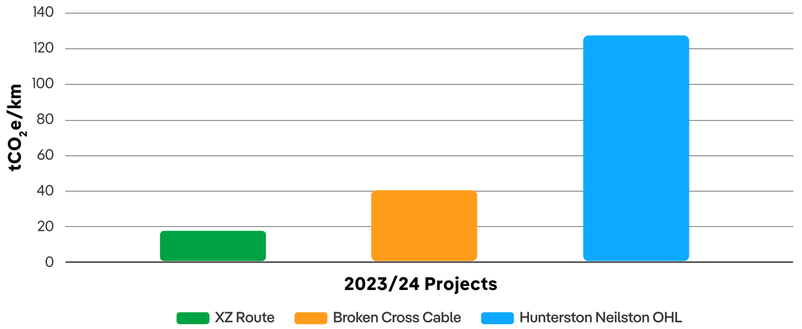
Approximately half of the A1-A3 emissions across all projects is associated with concrete and concrete related products which represents a significant opportunity for reduction in civil works.

Embodied carbon for civil projects per £m spend.



The total emissions of each civil project ranged from 333tCO_2e per £ million projects spend, to 695tCO_2e per £m project spend.

Embodied Carbon per km of Linear Infrastructure

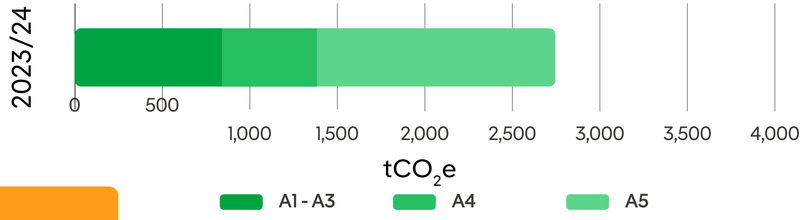


The chart above shows the embodied carbon per km for Overhead Line and Cable projects

The total emissions of each project ranged from approximately 14 tCO_2e per kilometre, to 127 tCO_2e per kilometre.

Developing Embodied Carbon Assessments from Final Build

We also collected embodied carbon data from our construction contractors on 29 projects. This data, gathered from construction sites, represents the annual As Built emissions, rather than full projects. It's important to note that our method of collecting this data is still evolving. As a result, the data may not be as comprehensive as estimates based on final design information. In this context, A5 emissions seem to be the most prevalent. However, this is primarily because a larger number of contractors are reporting fuel usage compared to material consumption. Next year we will explore new and innovative ways of collecting, analysing and reporting data from our site operations.



Case Study – Setting an Embodied Carbon Baseline for Transmissions Substations >

Commitments >

Contents

Setting an Embodied Carbon Baseline for Transmissions Substations

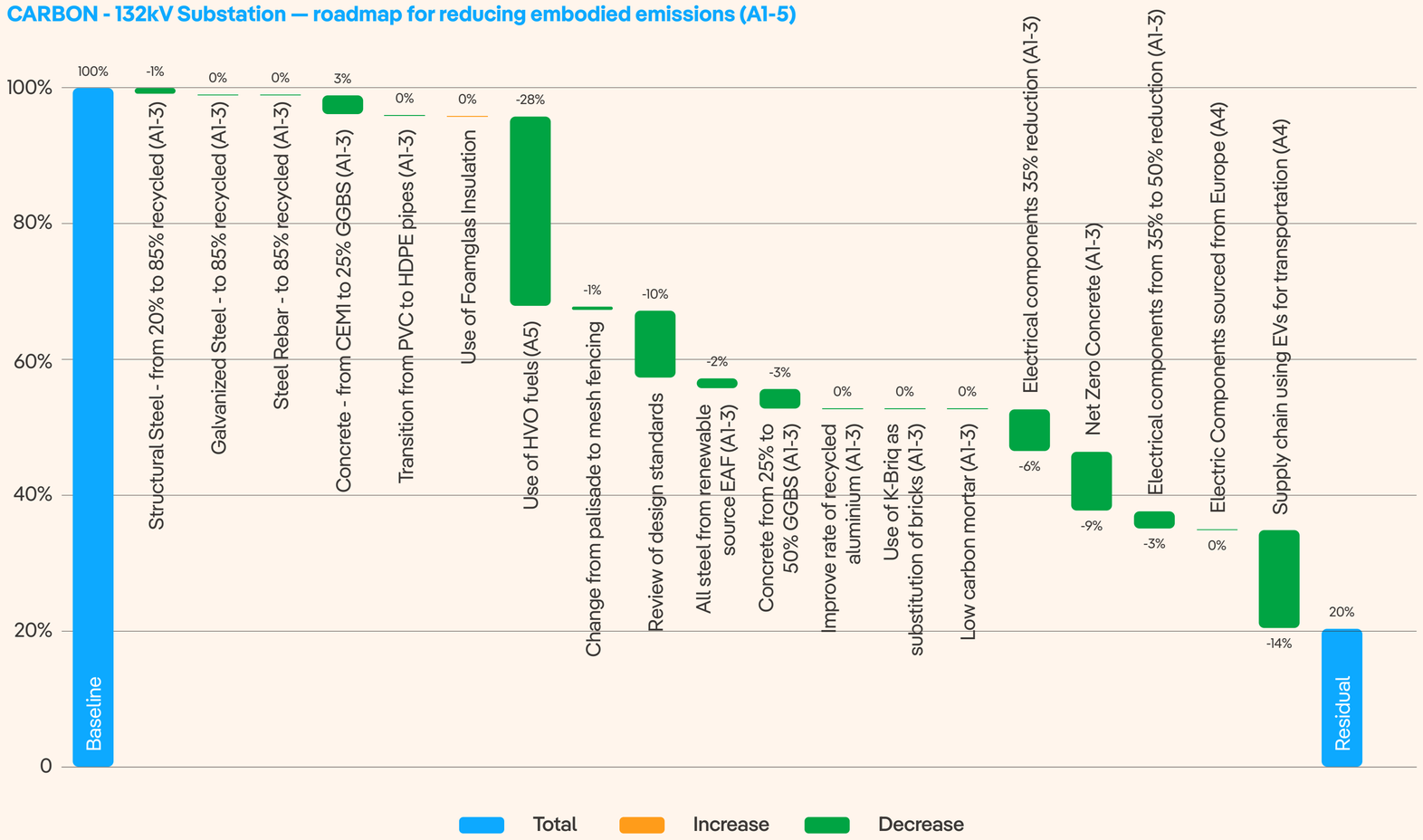
One issue with setting an embodied carbon baseline is the diversity and complexity of electrical infrastructure projects. Each project is unique, which makes direct comparability challenging. One of the key aims of the 'Truly Sustainably Substation Project' (see Innovation Section) was to understand the carbon hotspots within a substation and focus on the opportunities to reduce these hotspots. The waterfall graph below shows the emissions in grey (on the left) – which is the estimated embodied carbon associated with a 'typical' substation. Each opportunity (X axis) has the potential to decrease the emissions. Green represents opportunities that could be implemented in the short term and shows the magnitude of reduction. Amber represents opportunities which can be implemented in medium / longer timescales. Overall, the study suggests embodied carbon could be reduced by up to 80% in the future if low carbon materials and products are used.

Using this study as a benchmark, our key focus will be reducing embodied carbon associated with concrete, steel, diesel and electrical equipment.

Key Opportunities

1. Use of low carbon concrete mixes
2. Use of low carbon steel (e.g. from Electric Arc Furnace)
3. Use resource exchange mechanisms for recycling aggregates
4. Limiting diesel use on sites through HVO use and other low carbon fuels / technologies
5. Work with suppliers to aim for a -35% reduction in embodied carbon from electrical equipment and cables

We are using the outcomes of this innovation project to aim for a 50% reduction in embodied carbon by 2031



132kV Substation | 275KV Substation

Contents

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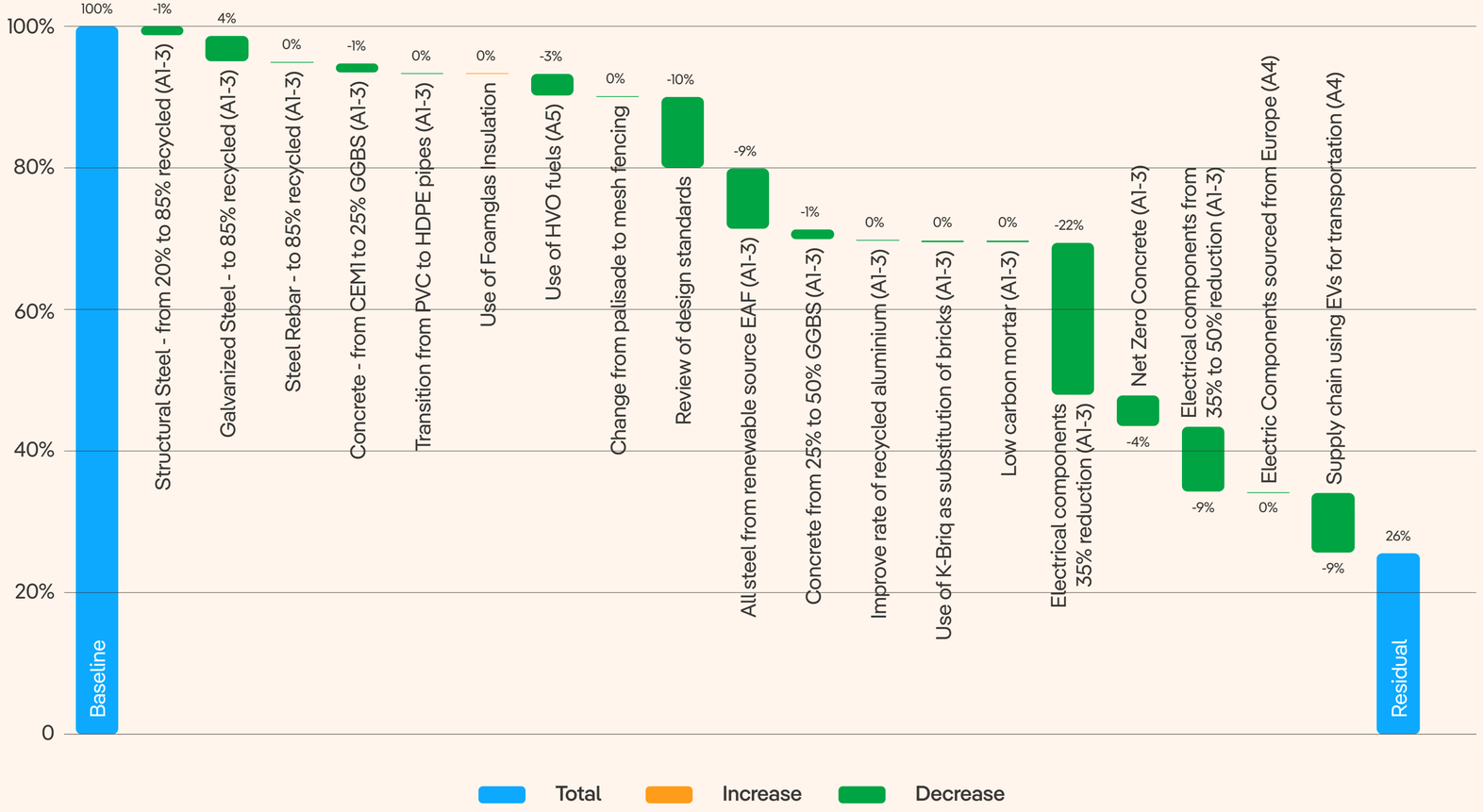
CARBON - 275KV Substation — roadmap for reducing embodied emissions (A1-5)



132kV Substation | 275KV Substation

Contents

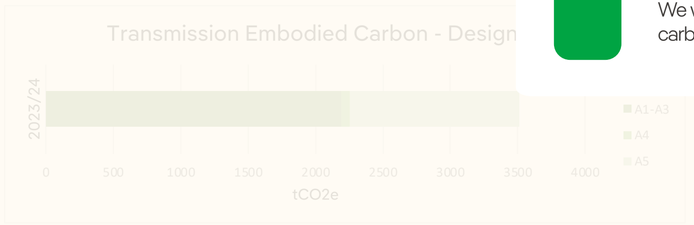
Embodied Carbon & Carbon Management in Infrastructure

Using the UK Green Building Council Guidance: Embodied Carbon: Developing a Client Brief, which was adopted by Ofgem as a reference in the AER guidelines, embodied carbon refers to the emissions generated to produce a built asset. We have interpreted this as including all product stage emissions, transport related emissions and construction related emissions associated with the production of our infrastructure. 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 n
partnership with our supply chain to support them to

Status update

We have calculated the embodied carbon of all civil w
RIIO-T2 'Major Projects', which have been completed i
Embodied carbon has been estimated using final des
Further information on the methodology for reporting
is included in Appendix A.

The chart below shows the embodied carbon breakd
carbon by lifecycle stage. The majority of emissions a
the products used to develop our network.



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A4 – transport emissions associated with moving materials and products to site accounts for a relatively small source of emissions.
A5 – site energy use, including diesel used in plant and generators is estimated to account for a significant proportion of emissions.

Commitments

We will work collaboratively with our stakeholders, including the other Transmission Operators, throughout RIIO-T2 with the aim of assessing and managing capital carbon on our projects, driving efficiencies throughout our supply chain, and sharing best practice.	G
We will, in collaboration with the other Transmission Operators, introduce a measurement tool for embodied carbon in new projects, in order to establish a baseline and set a reduction target.	A
We will collaborate with our supply chain and other Transmission Operators to drive scope 3 and embodied carbon footprint reductions.	G
We will collaborate with our supply chain to implement sustainable project sites to reduce carbon and other impacts, for example energy efficiency, diesel use, re-use of materials and reducing impact of transportation.	G
We will identify, and subsequently monitor and report, metrics to track progress towards our Scope 3 science-based carbon reduction target.	G

Case Study – Setting an Embodied Carbon Baseline for Transmissions Substations >

Commitments & Metrics >

Navigation

Climate Change Resilience

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

This requires:

- Seeking to understand our existing resilience to weather
- Understanding the potential impacts of climate change on our network
- Embedding adaptation within our business processes and investment decisions.

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.

All our Flood Risk Assessments have been completed and remediation works at 4 sites are due to commence during 2024, the contract for these works was awarded during year 3 of the RIIO-T2 period. These works will be undertaken by our new Agile Project Unit which has been created to deliver high volume, low complexity programmes of work.

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.	G
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.	G

Metrics

Flood Risk Assessments (FRA) completed – **10**

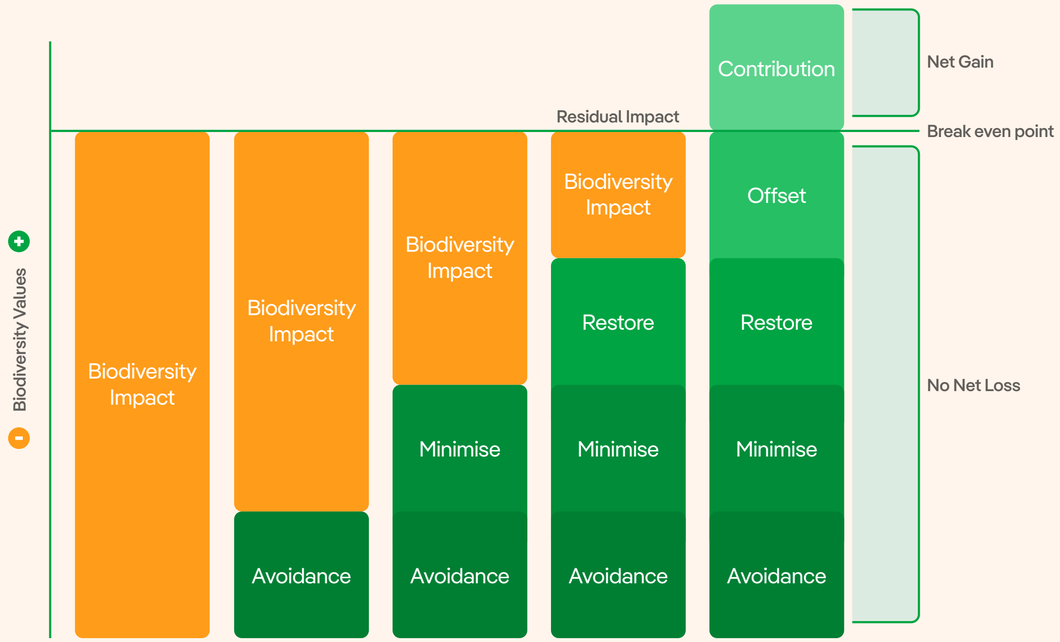
Implementation in **2024-2026**

Contents

Action for Nature

Across our Transmission business we work to protect and enhance the ecosystems our network operates within. We are committed to applying the principles of the biodiversity mitigation hierarchy across our operations, avoiding and reducing the impacts of our construction works where possible, and restoring and compensating for any residual impacts to achieve 'No Net Loss' of biodiversity across the RIIO-T2 period.

In 2024 we launched our Action Plan for Nature which details our vision for delivering a sustainable and nature positive network.



Contents

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. Both related to oil leaks from buried fluid filled cables (FFC). In April 2023, following investigation of a low oil level pressure alarm on a fluid filled cable, an oil leak was investigated and identified in Edinburgh which was then sealed in July 2023. This resulted in 5,858 litres of oil lost to ground.

A separate leak occurred on a separate fluid filled cable supply for Edinburgh which began leaking in Q3 2023 and was then sealed in Q1 2024. This leak resulted in the loss of 24,161 litres of oil.
The investigation into any potential clean-up of the oil is on-going for both incidents.

Neither leak has resulted in oil contamination of water courses, and no enforcement actions or undertakings resulted from the two incidents which were notified to the regulator.

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 are identified to deliver a suitable level of risk management.

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/ storage/ assessments).
- Use of materials such as concrete and bentonite clay.
- Management of soils (excavation/storage) and
- A wet weather protocol.

Transmission Operations manages approximately 200 substations across Scotland, each in their own environmental setting with different sensitivities. Over the past year we have been mapping out each of their drainage plans, including where the valves, separators and outfalls are. These have been printed along with the Pollution Prevention Plan and are pinned inside each control room.

PCB removal

Work is progressing on the planned removal of PCB contaminated (or potentially contaminated and sealed) assets. We are aiming to meet the deadline of 31 December 2025 for the removal of those assets from our Transmission network, however we do have a small number of assets that are at risk of not being removed before the deadline due to outage and project timelines. 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.

As part of a minor capital scheme that our Operations business are managing, we have removed/replaced 101 units which were suspected to contain PCBs so far in the RIIO-T2 period. On review of the results following disposal a total of 8 units were found to contain oil with greater than 50ppm PCB.

This year we have replaced 6 assets as part of a named RIIO-T2 scheme and noted on completion that 5 had a confirmed value over 50ppm.

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 2023/24 regulatory year, SPT have seen a significant increase in fluid added to fluid filled cables on our network. The main factor in this increase was due to a leak on the Gorgie to Telford Road 132kV FFC supply to Edinburgh. This leak was sealed in Q1 2024 after a significant challenge in identifying the leak location and other complicating factors. This cable is in the process of being replaced during RIIO-T2. Fluid filled cable leaks can be a challenge to locate, particularly in densely urbanised areas. 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.

Legacy Land Contamination.

We are continuing the programme to investigate the site conditions at our known sites and have added further site assessments in 2023/24, now including the Westfield site as a legacy contaminated site. All our identified sites are at various stages of assessment using the standard land contamination phased approach and we will continue to assess, and where required remediate the sites to ensure that the risk to the environment from these sites is low risk.

Commitments & Metrics >

Contents

Pollution Prevention

Commitments

We will target zero environmental regulatory interventions and notifiable breaches	R
We will deliver our RIIO-T2 programme of mitigation measures (oil containment) for pollution prevention, developed via a condition-based asset risk assessment process.	A
We will implement Pollution Prevention Plans for all future projects for RIIO-T2 and beyond.	G
We will implement a programme to identify, risk assess and address high risk legacy land contamination.	G
We will eliminate PCBs from our network in compliance with the relevant legislation and in line with the industry approach agreed with the Environmental Regulators.	A

Metrics	Unit	2021-22	2022-23	2023-24
Oil in service (main transformers)	Litres	8,516,712	8,525,310	15,980,361*
Oil in service (FFCs)	Litres	268,000	268,000	268,000
Oil in service (total)	Litres	8,784,712	8793310	16,248,362
Cable oil top ups (% of oil in service)	Litres	3,307 (1.2%)	5805 (2.2%)	38,728 (14.5%)
Transformer oil top ups	Litres	34,375 (0.4%)	22553 (0.3%)	23,329 (0.14%)

*Difference in Oil in Service in main transformers relates to improvements in data reporting

Maximising environmental benefit from non-operational land

Status update

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

For RIIO-T2 we have a Customer Value Proposition (CVP) to release unused non-operational land to local community groups for biodiversity projects, allowing them to use sites for free to deliver biodiversity enhancements in local communities.

We have reviewed this CVP due to the volume of new connections that we now need to supply and the availability of non-operational land being heavily constrained. We will now be delivering the CVP with a mix of community nature volunteering projects within the vicinity of our assets and microgrants for community groups to enhance nature in our neighbourhoods.

Contents

Land and Biodiversity improvement

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 delivering enhancement. A consistent approach will ensure decisions are made to assess biodiversity consistently across the network.

NatureScot has commenced the development of a Scottish Biodiversity Metric for use by developers. This tool, to be released in 2025, will be based on the DEFRA V3.1 metric and will be adapted for Scottish habitats and environments. As part of the Scottish Linear Infrastructure Environmental Group, we are a key stakeholder in the development of this tool and guidance. Whilst we await the Scottish metric, SPT will continue to use the SSENT adapted metric on our projects to assess biodiversity loss and deliver net gain. During the year, using the SSENT metric, we have been able to run data gathered from surveys on the list of projects selected to deliver 'No Net Loss' through our Use It or Lose It fund to calculate the number of biodiversity units required to meet this commitment. Results from these assessments were returned at the end of the year, with the data being processed in year 4 of RIIO-T2.

With limited scope to deliver enhancements for biodiversity within our project boundaries, we are committed to working collaboratively with local communities, stakeholders and landowners to deliver habitat creation and improvement schemes. This year we have engaged with a number of stakeholders, including Nature Scot and Fisheries Management Scotland to discuss our 'No Net Loss' objectives, develop our approach to delivering enhancement projects, and start to build a pipeline of investible schemes. We will deliver biodiversity enhancement projects from this list during years 4 and 5 to achieve 'No Net Loss' in line with requirements.

Natural Capital Baseline

The three TOs undertook a review of existing Natural Capital tools over an 18 month period to identify one that best fits Ofgem baseline requirements and network priorities., to provide a quantified account of electricity transmission sector land assets. We also needed 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 the EcoUplift tool, developed in collaboration with AECOM. There continues to be delays with this tool, however we are working with the other TOs and linear infrastructure organisations to pilot the latest version on several projects The next steps will be for SPT to carry out natural capital assessment on network developments by the end of RIIO-T2.

Case Study – Nith District Salmon Fisheries Board >

Commitments & Metrics >

Contents

Land and Biodiversity improvement

Status update

We have committed to work collaboratively with the other UK electricity Network Operators to deve approach to natural capital assessment and delivering consistent approach will er are made to assess biodive across the network.

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Nith District Salmon Fisheries Board

At SP Energy Networks, we are committed to working with local communities to ensure we are protecting and enhancing biodiversity across all our projects. This year, as part of our 'No Net Loss' Use It or Lose It project being delivered throughout RIIO-T2, we have been engaging with key stakeholders in the vicinity of development projects including the Nith District Salmon Fisheries Board (The Nith).

SPT have worked this year with The Nith to develop a pilot project that will test our approach to delivering 'No Net Loss' through offsite biodiversity enhancement schemes.

As developers of linear infrastructure, SPT are interested in delivering enhancement projects that improve connectivity of nature. These are known as 'Nature Networks' - areas of good quality habitat connected physically or ecologically, that act as corridors for pollinating insects, bird and small mammals.

This pilot project will focus on Riparian Woodland Creation across 3.2 Hectares of the banks of the River Nith in Dumfries and Galloway. Potential biodiversity uplift of the project has been assessed using the SSENT Toolkit, and the project should deliver an estimate of at least eight biodiversity units.

This scheme will be delivered during the 2024 autumn/winter planting season, and progress will be reporting in the subsequent annual environmental report.

Case Study – Nith District Salmon Fisheries Board >

Navigation

Land and Biodiversity improvement

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 delivering enhancement. A consistent approach will ensure decisions are made to assess biodiversity consistently across the network.

NatureScot has commenced the development of a Scottish Biodiversity Metric for use by developers. This tool, to be released in 2025, will be based on the DEFRA V3.1 metric and will be adapted for Scottish habitats and environments. As part of the Scottish Linear Infrastructure Environmental Group, we are a key stakeholder in the development of this tool and guidance. Whilst we await the Scottish metric, SPT will continue to use the SSE adapted metric on our projects to assess biodiversity loss and deliver net gain. During Year 3, using the SSENT metric, we have been able to run data gathered from surveys on the list of projects selected to deliver 'No Net Loss' through our Use It or Lose It fund to calculate the number of biodiversity units required to meet this commitment. Results from these assessments were returned at the end of Year 3, with the data being processed in year 4.

With limited scope to deliver enhancements for biodiversity within our project boundaries, we are committed to working collaboratively with local communities, stakeholders and landowners to deliver habitat creation and improvement schemes. During Year 3 we have engaged with a number of stakeholders, including Nature Scot and Fisheries Management Scotland to discu
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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.	G
We will pilot these biodiversity and natural capital assessment methodologies and associated tools on selected RIIO-T2 projects.	A
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.	A
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.	G
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'.	A
We will work with our local communities, landowners and other stakeholders to deliver a net positive impact in natural capital across our existing sites.	A
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.	G

Case Study – Nith District Salmon Fisheries Board >

Navigation

Enhancing visual amenity

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.

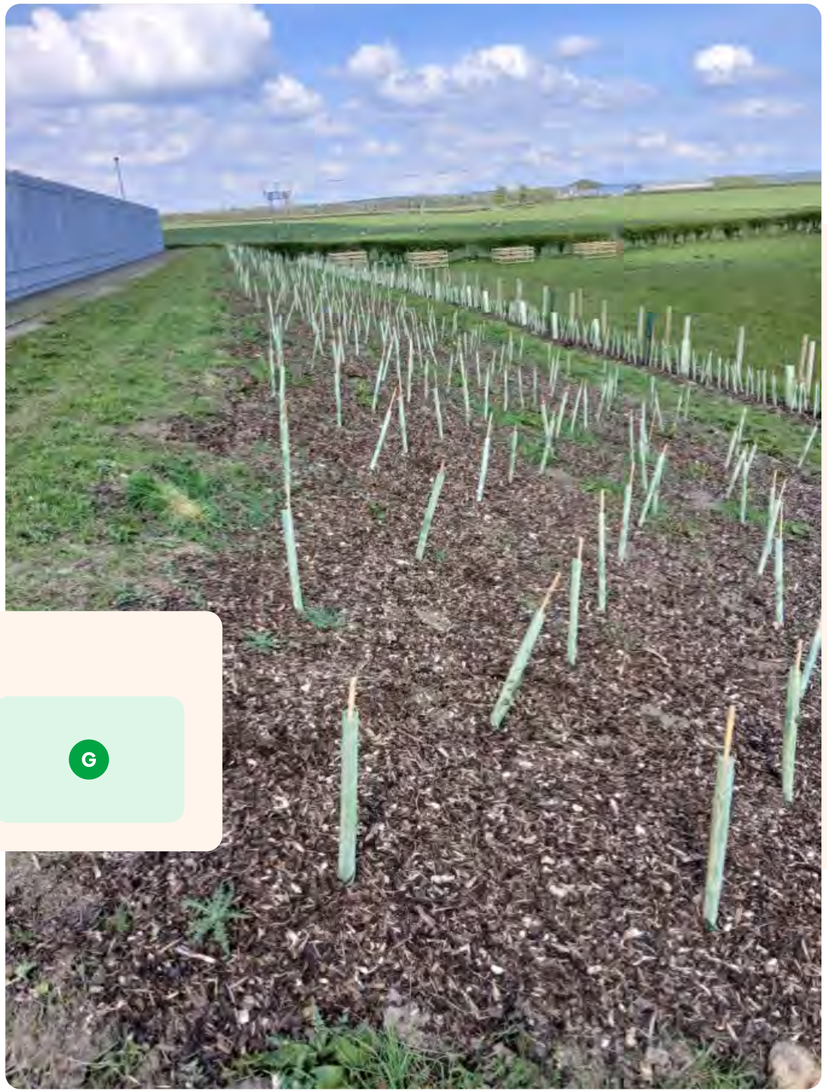
Status update

We developed the VIEW project during the T1 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.

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.

G



Case Study - Gretna Site Visual Amenity Planting

In line with our vision for a sustainable network, we are working towards enhancing visual amenity on our sites where possible. One recent site that has begun this work, is near the Gretna Substation, where we have begun planting 12 species of trees, shrubs, and hedges, working to enhance and connect existing hedgerows, woodland trees, and the nearby watercourse.

The planting provides screening for local residents and the view from the road, allowing the substation to better blend into its surroundings, this will continue to improve as the trees and shrubs become established.

Connecting the new and existing planting areas to the watercourse, means our site is part of a nature corridor which bridges the gap between habitats that would otherwise be small and isolated. These corridors can be used by wildlife to travel, hunt, or nest.

Along with areas returning to agricultural use, the Gretna site also has new areas designated for uncut grass and meadows. This will further enhance the wildlife corridor as a steppingstone and will slow down run off, improving flood prevention, and decreasing the risk of pollution of the nearby watercourse.

Contents

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 reuse or recycle 100% of our waste by 2030, excluding compliance waste.

Status update

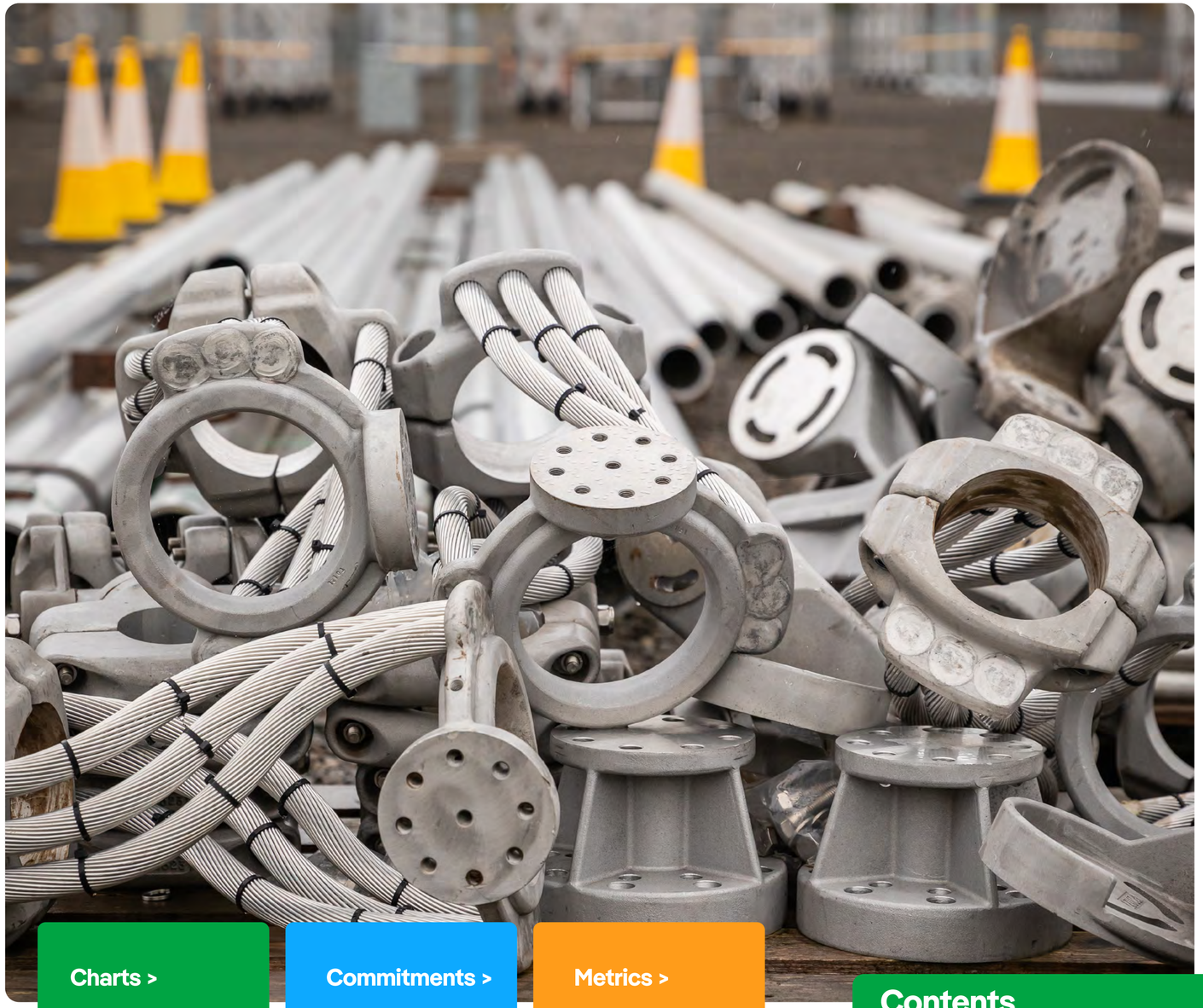
Waste data has improved in the first few years of RIIO-T2 but there remains challenges including gathering data for materials. During the remainder of RIIO-T2 we will continue to improve materials data including the % recycled content of materials being used on our projects.

In order to do this, we will explore new and innovative ways of collecting, analysing and reporting resource use data from our site activities.

The waste tonnage for the calendar year Jan 23 to Dec 23 was 52,489 tonnes, of which 98% was diverted from landfill. This is 27,061 tonnes higher than the previous year due to a difference in the timing and type of construction projects underway during this period. The tonnage of waste can vary from year-to-year dependant on number and type of construction projects that are ongoing. However, despite the increase in overall waste, our waste reused percentage increased from 78% to 91% during the period, mainly due to the reuse of soils and stones on our projects. This demonstrates our commitment to increase our landfill diversion and reuse rates.

We have seen our landfill diversion rate increase to 98% this year, which demonstrates we have achieved and exceeded the target of 95%. This shows our commitment to reaching our overall SPEN target of 100% of waste reused or recycled by 2030. Our future challenge lies in influencing our supply chain and its ability to eradicate the remaining 2% of landfill. The majority of which originates from our operations rather than our projects (see T-Ops graph). We will work to identify the waste types being landfilled and support and engage with our waste contractors to ensure this is a priority area of diversion.

We are working on an engagement plan to facilitate collaboration with our supply chain to ensure we embed circular economy thinking and that standards can be implemented. This is a process that is driven by whole life cycle thinking and therefore requires planning and intervention at the beginning of projects. Delivery has been delayed due to the complexity, however the planning that SPEN are doing to engage with the supply chain and our work on engineering design and standards will drive this forward to get the target date back on track.



Charts > | Commitments > | Metrics > | Contents

Circular Economy

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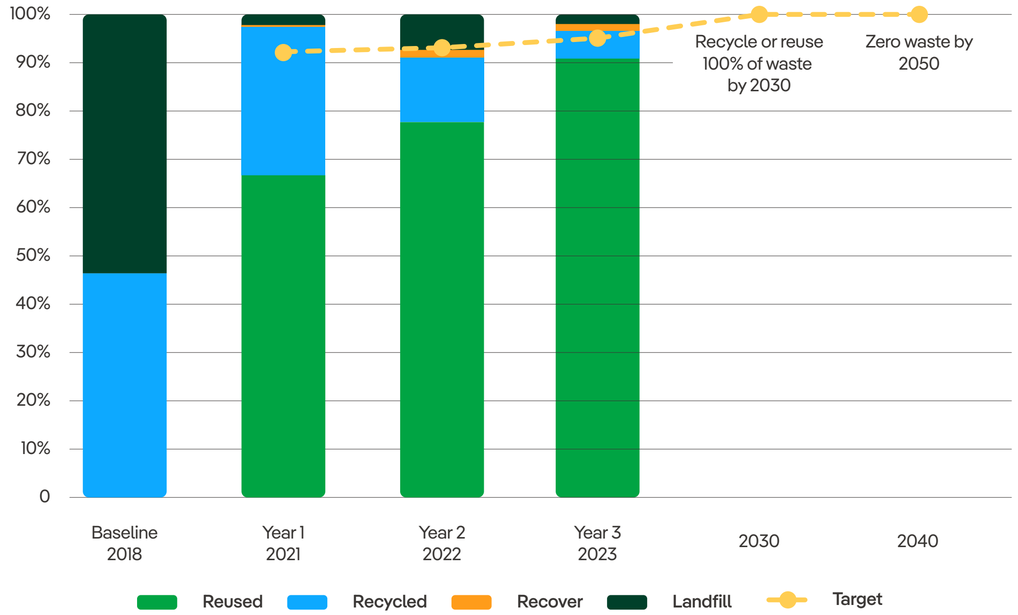
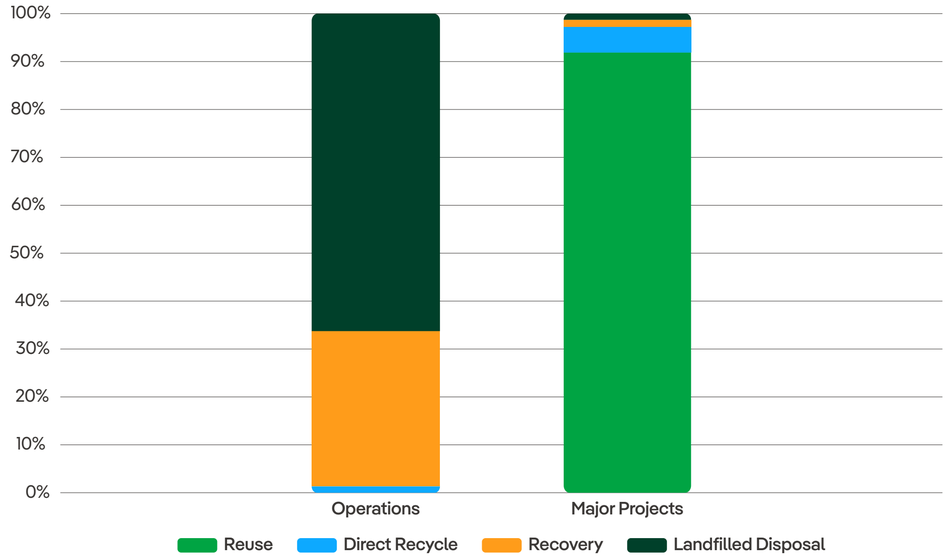
SP Transmission Waste by Waste Route



SP Transmission Waste by Business and Route



charts >
Commitments & Metrics >
Navigation

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Status update

We are continuing to use the SmartWaste reporting tool to collect resource use data including materials consumed, waste recycling and landfill diversion rates, and the carbon impacts of our activities. During the remainder of RIIO-T2 we will continue to improve materials data including the % recycled content of materials being used on our projects.

In order to do this, we will explore new and innovative ways of collecting, analysing and reporting resource use data from our site activities.

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Commitments

We will embed circular economy principles where relevant throughout our business processes, considering whole life cycle environmental impacts.	A
We will divert 95% of our waste from landfill.	G
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.*	A
We will require project Waste Management Plans for all new projects in RIIO-T2 and beyond.	G
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.	G
We will set targets for recycled/reused materials as a % of total input materials to be achieved by end RIIO-T2, 2030 and 2050.	G
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.	G
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.	G

* 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.

charts >

Commitments & Metrics >

Navigation

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Metrics

	Baseline 2018	Year 1 2021	Year 2 2022	Year 3 2023
Reduce	-	-	-	-
Reuse	-	61.6	19.8	47.7
Recycle	44.2	28.4	3.4	3.0
Recover	-	0.4	0.5	0.8
Landfill	51.0	1.9	1.8	1.0
Total Waste (thousands of tonnes)	95.2	92.3	25.4	52.5

% of Waste - Fate	Baseline 2018	Year 1 2021	Year 2 2022	Year 3 2023
Reduce	0.0%	0.0%	0.0%	0.0%
Reuse	0.0%	66.7%	77.7%	90.0%
Recycle	46.4%	30.7%	13.4%	5.7%
Recover	0.0%	0.4%	2.0%	1.5%
Landfill	51.0	2.1%	6.9%	2.0%
% diverted from landfill	46.4%	97.9%	93.1%	98.0%

charts >

Commitments & Metrics >

Navigation

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 below, where we list our Key Priority Areas and rank them based on their current level of data maturity. There's still some work to be done on a few areas to get to where we wanted to be at this stage, however, this year we continued to improve our data maturity:

- Continued to progress production of our SPEN Data and Reporting Strategy working with our Centre of Excellence team to develop a digitalisation roadmap to improve the collection, quality and reporting of sustainability data.
- During 2023 we performed a sustainability due diligence and double materiality review in line with European Sustainability Reporting Standards guidance and in conjunction with our parent company Iberdrola SA. This aims to assess our operational impact and financial materiality allowing us to implement mitigations, set objectives and measure performance against these. We expect the results in Autumn 2024 and will provide an update in the next report.
- In August 2023 the INZAC group performed a review of our 2022/23 RIIO-T2 Annual Environmental Report and provided valuable suggestions and feedback to help us improve and strengthen communication of our sustainability performance. The feedback received has been incorporated into this year's report.

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 HERE.

Data Maturity Matrix >

Contents

Data and Assurance

Scope

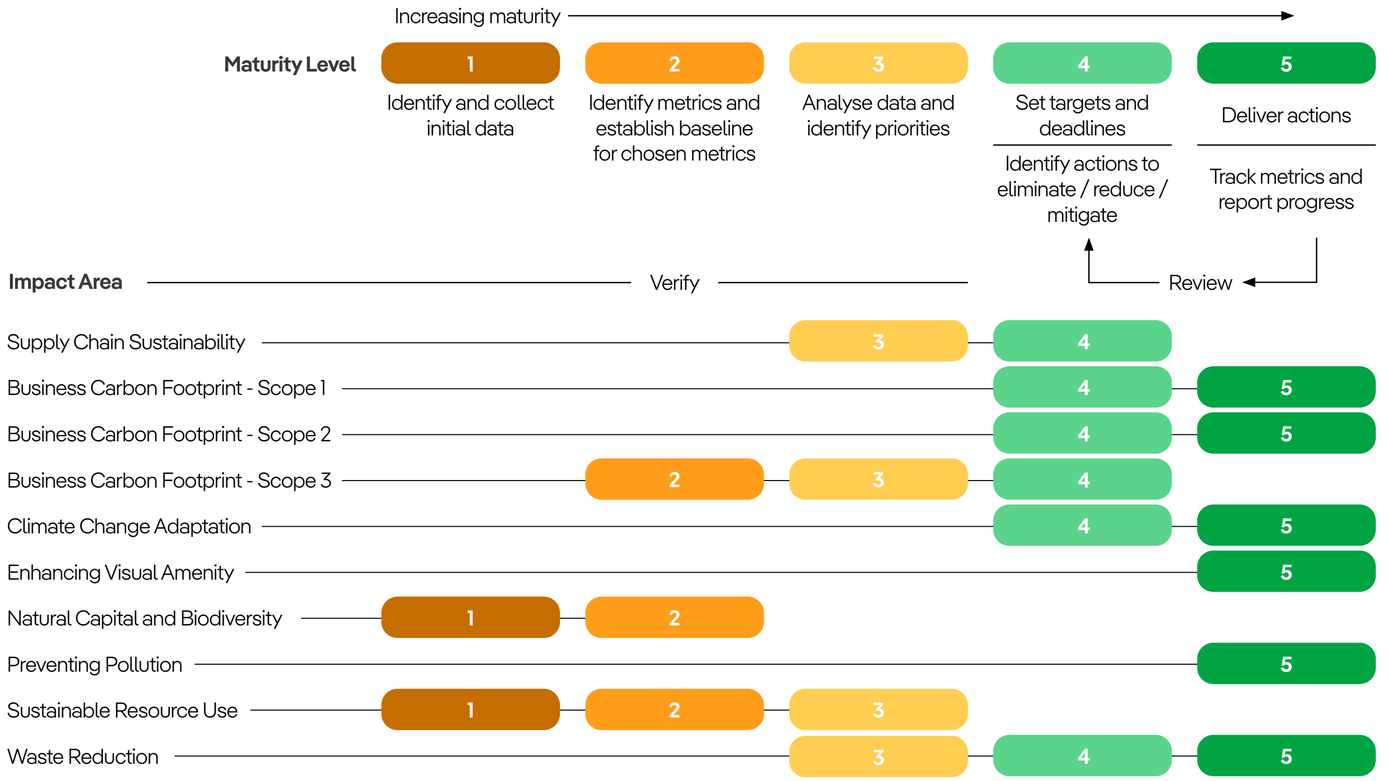
Our RIIO-T2 plan and commitments are designed to quickly build on our current performance, using our established process for achieving data maturity. This starts with identifying and collecting initial data, progresses to identifying metrics and baselines then culminates in setting and delivering targets 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:

- Continued to progress production of our SPEN Data and Reporting Strategy working with our Centre of Excellence team to develop a digitalisation roadmap to improve the collection, quality and reporting of sustainability data.
- During 2023 we performed a sustainability due diligence and double materiality review in line with European Sustainability Reporting Standards guidance and in conjunction with our parent company Iberdrola SA. This aims to assess our operational impact and financial materiality allowing us to implement mitigations, set objectives and measure performance against these. We expect the results in Autumn 2024 and will provide an update in the next report.
- In August 2023 the INZAC group performed a review of our 2022/23 RIIO-T2 Annual

sustainability certification, awarded annually to businesses that are committed to reducing their carbon emissions.

A link to the SPEN Certification Statement can be found HERE.

Data Maturity Matrix



Data Maturity Matrix >

Navigation

Let us know what you think

The road to Net Zero GHG will affect us all. So, we would like to hear from you – our communities, customers, employees, suppliers and investors.

We have committed to publish an Annual Environmental Report and so we need your feedback to make sure we continue to focus on the correct areas to deliver a more sustainable future for all.

Through the year, we share updates on our successes and our annual reports on our website.

If you would like to contact us about our Annual Environmental Report, please email: sustainable@spenergynetworks.co.uk.

For more information on our Sustainable Business Strategy, click here.

Click here to download a PDF of this Annual Environmental Report.

To be added when finalised.

Contents

Performance Tables

Report Section	Metric	Units	Baseline Year 2018/19	Year 1 2021/22	Year 2 2022/23	Year 3 2023/24
Performance Dashboard	Long-term GHG reduction target Scopes 1,2,3 by 2035 accredited by SBTi	%	n/a	67%	67%	67%
Performance Dashboard	Change in business carbon footprint (excl. losses) from last year	%	+36%	-25%	-35%	98%
Performance Dashboard	Change in SF_6 emissions from last year	%	+51%	-32%	-45%	141%
Performance Dashboard	Years of continuous certification to the Planet Mark	Years	3	6	7	8
Performance Dashboard	Low Carbon Generation Connections made this year	MW	139	186	534	48
Performance Dashboard	Investment in innovation supporting decarbonisation	£m	0.25	2.8	2.6	2.9
Performance Dashboard	Waste diverted from landfill	%	46%	98%	93%	98%
Performance Dashboard	Community Net Zero Carbon workshops delivered since November 2022	Number	n/a	n/a	16	16
Performance Dashboard	Gender pay gap	%	20.06%	16.33%	16.50%	14.79%
Performance Dashboard	Suppliers progressing towards enhanced environmental standards	%	n/a	n/a	47%	71%
Performance Dashboard	Reportable environmental incidents	Number	0	3	2	2
Achieving the sustainability step-change	ISO14001:2015 Certification	Y/N	Yes	Yes	Yes	Yes
Achieving the sustainability step-change	Training Plan Delivery	Completion %	n/a	94%	61%	98%
Achieving the sustainability step-change	Stakeholder Engagement Plan Delivery	% of Engagement plan target	n/a	n/a	n/a	100%
Sustainable Supply Chain	Percentage of suppliers (by value) meeting licensee's supplier code	%	n/a	n/a	47%	71%
Sustainable Supply Chain	Percentage of suppliers (by value) that have their own sustainability metrics or KPIs (SBT)	%	n/a	n/a	57%	66%
Connecting Low Carbon Generation	New low carbon generation connections	MW	n/a	186	534	48
Connecting Low Carbon Generation	Low carbon share of generation	%	n/a	88.5%	89.5%	89.7%
Connecting Low Carbon Generation	Average time to issue connection offer	Days	n/a	69	74	71
Connecting Low Carbon Generation	Connection offers accepted	Number	n/a	74	219	220
Connecting Low Carbon Generation	Quality of Connections ODI score	Score (1-10)	n/a	8.3	8.2	8.3
Connecting Low Carbon Generation	Quality of Connections ODI target	Score (1-10)	n/a	8.3	8.4	8.6
Innovation	Annual investment in ongoing innovation activities that are primarily supporting decarbonisation and/or protecting the environment	£m	0.25	2.76	2.62	2.89

Contents

Performance Tables (cont.)

Report Section	Metric	Units	Baseline Year 2018/19	Year 1 2021/22	Year 2 2022/23	Year 3 2023/24
Business Carbon Footprint	Scope 1 - Operational Transport	tCO_2e	433	518	584	558
Business Carbon Footprint	Scope 1 - Fugitive emissions - SF_6	tCO_2e	19,184	12,085	6,703	16,180
Business Carbon Footprint	Scope 1 - Fugitive emissions - HVAC	tCO_2e	0	170	2	0
Business Carbon Footprint	Scope 1 - Fuel combustion	tCO_2e	0	9	100	29
Business Carbon Footprint	Scope 1 - Building energy use - Gas	tCO_2e	21	47	45	59
Business Carbon Footprint	Scope 2 - Building energy use - Building Electricity	tCO_2e	540	92	57	0
Business Carbon Footprint	Scope 2 - Building energy use - Substation Electricity	tCO_2e	1,439	1,505	1,849	1,653
Business Carbon Footprint	Scope 2 - Electricity losses	tCO_2e	202,371	132,554	165,625	148,177
Business Carbon Footprint	Total BCF excluding losses	tCO_2e	21,617	14,425	9,340	18,481
Business Carbon Footprint	Total BCF including losses	tCO_2e	223,988	146,979	174,966	166,658
Fugitive Emissions	Total IIG emissions	tCO2e	20,103	12,196	6,839	16,291
Fugitive Emissions	SF6 emissions	tCO2e	20,103	12,196	6,839	16,291
Fugitive Emissions	Other (G3) emissions	tCO2e	0	0	0	0
Fugitive Emissions	Leakage rate	%	0.86%	0.45%	0.23%	0.54%
Fugitive Emissions	Interventions per annum	Number	0	0	0	0
Fugitive Emissions	Estimated impact of interventions	tCO2e avoided/abated	0	0	0	0
Network Losses	Electricity losses	tCO_2e	202,371	132,554	165,625	148,177
Network Losses	Annual losses	TWh	0.720	0.637	0.856	0.716
Network Losses	Share of total electricity	%	n/a	1.75%	2.39%	2.09%
Oil Top Ups	Oil in service (transformers)	litres	n/a	8,516,712	8,525,310	15,980,362
Oil Top Ups	Oil in service (FFCs)	litres	n/a	268,000	268,000	268,000
Oil Top Ups	Oil in service (total)	litres	n/a	8,784,712	8,793,310	16,248,362
Oil Top Ups	Cable oil top ups	litres	n/a	3,307	5,805	38,728
Oil Top Ups	Transformer oil top ups	litres	n/a	34,375	22,553	23,329
Circular Economy	Reduce	Tonnes (thousands)	0.0	0.0	0.0	0.0
Circular Economy	Reused	Tonnes (thousands)	0.0	61.6	19.8	47.7
Circular Economy	Recycled	Tonnes (thousands)	44.2	28.4	3.4	3.0
Circular Economy	Recovery	Tonnes (thousands)	0.0	0.4	0.5	0.8
Circular Economy	Landfill	Tonnes (thousands)	51.0	1.9	1.8	1.0
Circular Economy	Total tonnes of waste	Tonnes (thousands)	95.2	92.3	25.4	52.5
Circular Economy	Total weight of waste produced - Reduce	%	0.0%	0.00%	0.0%	0.0%
Circular Economy	Total weight of waste produced - Reused	%	0.0%	66.74%	77.7%	90.8%
Circular Economy	Total weight of waste produced - Recycled	%	46.4%	30.73%	13.4%	5.7%
Circular Economy	Total weight of waste produced - Recovery	%	0.0%	0.43%	2.0%	1.5%
Circular Economy	Total weight of waste produced - Landfill	%	53.6%	2.11%	6.9%	2.0%
Circular Economy	Total % of waste diverted from landfill	%	46.4%	97.9%	93.1%	98.0%

Contents

Annex A – RIIO-T2 Embodied Carbon Estimation Methodology

Introduction

This supporting Annex outlines the calculation methodology used to estimate embodied carbon for the purposes of our RIIO-T2 Annual Environmental report. This is a requirement with the RIIO-2 Environmental Reporting Guidance Version 1.0, published by OFGEM in March 2021.

Scope of Assessment

The scope of the assessment includes emissions associated with cradle to practical completion. These are reported in line with the EN 15978 and EN 15804 Building Lifecycle Assessment Stages summarised in Figure 1.

Embodied Carbon Estimation Methodology – Final Design

Embodied carbon of major civil works was estimated using final design information. Quantities of materials used within civil works and basic mechanical electrical services were estimated using final design information collated at the tendering stage of a project. Civil materials included in the assessment include concrete, steel, aggregates, asphalt, pipework, plastics and cables.

One Click LCA software was used to develop embodied carbon estimates from civil material data. One Click LCA Infrastructure Software is a 3rd party carbon life cycle assessment tool, which complies with PAS 2080 Carbon Management in Infrastructure.

A1-A3 emissions were estimated using life cycle assessment data contained within the One Click LCA database. Emissions factors were selected based on professional judgement on their likeness to the detailed design information. Average UK emissions factors were preferentially selected as the most appropriate.

A4 emissions were estimated by assigning transport modes and transport distances for each modelled material. Transport distances and mode of transport are estimates and assume either a local, regional, national or internation location of origin.

A5 emissions have been calculated in the One Click LCA software by inputting project information.

Only major civil materials have been included in this assessment.

Seven RIIO-T2 projects completed in 2023/24 were selected for detailed design assessment. Results have been summarised in the RIIO-T2 Annual Environmental Report

Embodied Carbon Estimation Methodology – As Built

Embodied carbon of major civil works was estimated at the 'as built' stage – by gathering information from our supply chain.

SmartWaste is a 3rd party platform which was used to gather embodied carbon information from contractors.

A1-A3 emissions were estimated from contractors inputting the total volume of materials used within the construction process.

A4 emissions were estimated from contractors inputting transport distances and modes of transporting materials staff to site.

A5 emissions were estimated from contractors inputting energy and fuel used within the day-to-day operation of site compounds and construction materials.

Only major civil materials have been included in this assessment.

Twenty-nine RIIO-T2 projects ongoing in 2023/24 were selected for detailed design assessment. Results have been summarised in the RIIO-T2 Annual Environmental Report

Future Work

Further work is required to increase the scope of embodied carbon beyond civil materials and improve the methods used to gather embodied carbon from the as built stage of a project. This will be a key focus during the remainder of RIIO-T2.

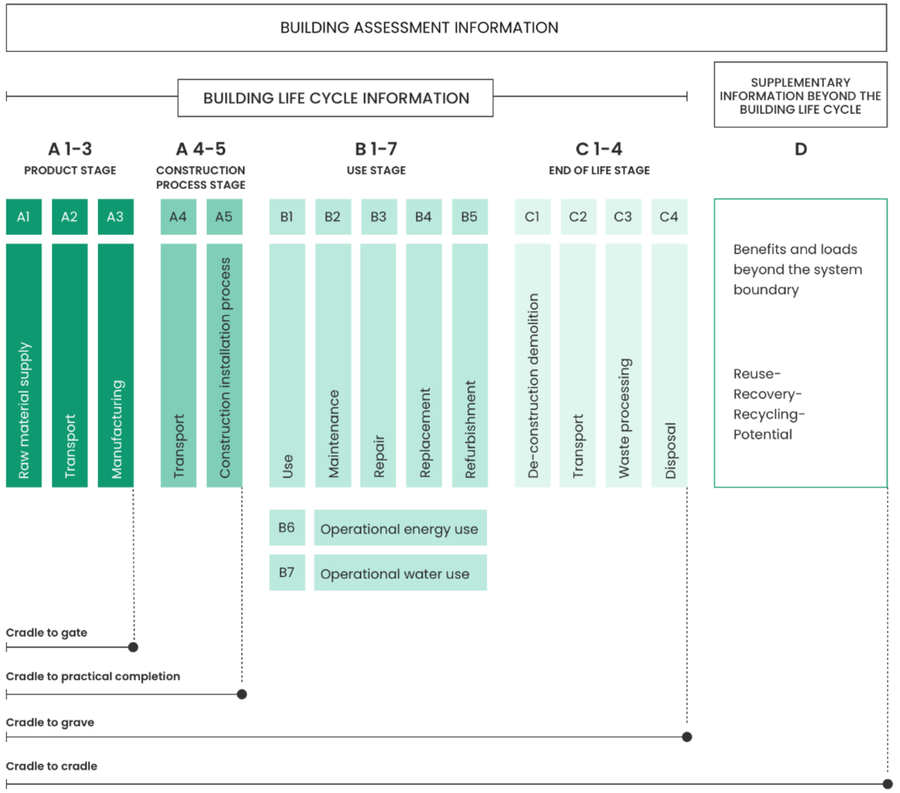


Figure 1 – Lifecycle Assessment Stages (from One Click LCA)

Contents