SP Transmission Annual Environmental Report *2021/2022*

SP ENERGY NETWORKS

Executive Summary

This SP Transmission Annual Environmental Report for 2021-22 provides an overview of our performance against key metrics and our ongoing progress to deliver our RIIO-T2 Environmental Action Plan commitments. It sets out our key activities to progress these commitments and gives examples of how we are supporting the societal transition to a low carbon economy whilst ensuring our work delivers positive environmental and social outcomes.

This report conforms to Ofgem's requirements for Transmission Operators to submit an Annual Environmental Report (AER) under the RIIO-T2 electricity transmission licence condition SpC9.1. The AER ensures that the "licencee is accountable on a yearly basis for implementing their RIIO-T2 Environmental Action Plan Commitments, their approach to environmental management and their environmental performance during RIIO-T2".

This report is intended to be suitable for a non-technical audience, to ensure the widest possible range of interested stakeholders can understand how we are progressing the delivery of our environmental commitments, while ensuring that we continue to develop our network in such a way that supports the transition to Net Zero Carbon and provides positive outcomes for consumers. If you have any questions about the content of this report, please contact

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Who we are

SP Transmission plc (SPT) is the electricity Transmission Operator (TO) that delivers electricity to homes and businesses in the Central Belt and South of Scotland as one of three network operation licences held by SP Energy Networks. We take electricity produced by power stations, windfarms and various other sources of generation and transport it through our transmission network, serving 2 million consumers connected via our distribution network.

SPT play a vital role in ensuring a safe, reliable, and economic energy supply to our region. We are crucial to the transition to a Net Zero Carbon energy system due to our location in an area of considerable renewable resource; connecting new, low carbon generation to our network, ensuring that consumers in both Scotland and the rest of the UK can benefit from green electricity.

Alongside this, we are continually looking to reduce our own environmental impacts and operate as a fully sustainable networks business, ensuring positive outcomes for people and planet.

Supply around 2 million customers in Central and Southern Scotland

2 million

Cover an area of approximately

23,000km²

Comprise over 3,700km of overhead lines

3,700km

Comprise over 600km of underground cables

600km

Comprises over 150 substations operating at 400, 275 and 132kV

150 Substations

SP Energy Networks also own and operate the electricity distribution network in Central and Southern Scotland, and in Merseyside, the Wirral, Cheshire, North Shropshire, Mid and North Wales.

Scottish Hydro-Electric Transmission

SP Transmission

National Grid Electricity Transmission

A message from our CEO

I'm delighted to introduce this year's report, and indeed my first as CEO of SP Energy Networks.

This year has presented numerous opportunities and challenges alike for the UK's energy system as we gradually embraced the 'new normal' after COVID-19 and tackled extreme weather across the areas we operate in. This brought some of the hottest temperatures on record and was contrasted by unprecedented winter storms, reminding us that climate change isn't just a distant threat; it's here, now. We must all play a role in delivering a just transition to a greener and more self-sufficient Net Zero Carbon future.

As an operator of critical national infrastructure, we must carefully balance our responsibilities to maintain a safe and reliable network, make sure that it can facilitate widespread electrification and work to deliver positive outcomes for the environments and communities in which we operate.

In the past year, we have supported wider energy system decarbonisation by connecting 186MW of renewable generation to our transmission network. For example, our recently commenced East Coast Onshore Upgrade Project, part of our RIIO-T2 programme, will work in collaboration with other transmission operators to significantly upgrade overhead lines and associated infrastructure to enable electricity to be transported to England in support of the low carbon transition.

In November, COP26 impressed upon us that we can no longer afford to rest on our laurels when it comes to climate action and decarbonisation of the energy system. We were incredibly proud to play our part in welcoming the world to Glasgow for the landmark conference, highlighting a number of innovative projects to stakeholders and the wider Glasgow community including the Cumberhead Collector Substation in South Lanarkshire, which allowed two windfarms to connect into our transmission network via the Coalburn Substation.

> *However, the work doesn't stop there; nearly a year on we're working hard to progress our environmental commitments and demonstrate that we're leading the way to Net Zero Carbon. This Annual Environmental Report is testament to our progress across our Transmission business.*

With this in mind, reducing our business carbon footprint has been, and continues to be, a key focus across our business. We are incredibly proud to have recently had our Science Based Target reduction across transmission and distribution licences validated. As an important step towards this target, we have already reduced our carbon footprint by 29% across scope 1 and 2 emissions (excl. Losses) compared to our 2013 baseline.

Vicky Kelsall
SP Energy Networks, CEO

Vicky Kelsall
SP Energy Networks, CEO

98% Depot and Construction waste diverted from landfill in 2021/22

98%

***A reduction of** 29% on Scope 1+2 Carbon Footprints (excl. Losses) from 2013/14 baseline*

↓29%

While sources of emissions such as sulphur-hexafluoride (SF_6) remain a challenge, this year we implemented a new business wide policy to ensure that SF_6 free solutions are considered preferentially across all projects. We firmly believe that seemingly small actions like these can lead to big changes.

In addition, we know that we can't decarbonise without bringing our supply chain along with us. That's why we have been working closely with the Supply Chain Sustainability School to support our suppliers and make sure they have the necessary tools to begin mapping out their own route to Net Zero Carbon. Already, 31% of our priority transmission suppliers are registered members of the Supply Chain Sustainability School.

> *Taking an integrated approach to sustainability is key to our plans, and actions to help improve our resource efficiency feature strongly. In 2021/22, we diverted 98% of our waste from landfill, meaning that we have achieved our 2023 target of diverting 95% of our waste ahead of time. This puts us firmly on track to achieve our target of 100% diversion from landfill by 2030 within the next few years.*

Of course, making sure that our colleagues are empowered to enact the changes needed to realise our ambitions is of the utmost importance. I was delighted that a recent internal engagement campaign we delivered across our business highlighted fantastic ideas from our colleagues on how we could reduce our operational waste and introduce more circular practices – all of which help us to recognise the value of resources and reduce the waste footprint of our operations. I'm proud to see our colleagues proactively stepping up and embracing sustainability as part of their day-to-day activities.

I'm delighted to see the delivery of our RIIO-T2 Business Plan progressing, with an ever-increasing number of real-life projects providing real, tangible benefits for our customers and wider society. However, the work has only just begun, and I'm excited to build on our performance in the coming year as we look to enable a just transition to Net Zero Carbon for all of the customers and communities we serve.

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

Our environmental responsibilities

Our Sustainability Drivers

- Sustainable Society
- Carbon and Energy Reduction
- Climate Change Resilience
- Water Efficiency and Protection
- Land and Biodiversity Improvement
- Sustainable Resource Use

Conversations on the decarbonisation of transport and heat no longer take a back seat, and we must ensure that our network is prepared to deal with the increased demand expected through the uptake of low carbon technologies such as heat pumps, district heating and electric vehicles. As we maintain and improve this critical infrastructure, we must also reduce our own environmental impacts and ensure we are leaving a positive legacy for our people and planet.

Sustainability is a central tenet of our business; it guides our business plans, underpins our innovation approaches, and shapes our day-to day service. Our stakeholders have informed us that it is not enough to simply play our part in the energy transition, we must demonstrate our vision to become a sustainability leader – and we agree.

Through our RIIO-T2 Business Plan, we set 59 ambitious environmental commitments in line with our key focus areas, developed through extensive stakeholder engagement. Since the beginning of the T2 price control in April 2021, we have been working with colleagues from across the business to understand how our business-as-usual processes must be adapted to accommodate the sustainability step change and ultimately ensure they are fit for purpose to deliver on our ambitions. In some cases, this may be a relatively simple tweak, for example utilising our existing relationships with other transmission operators to drive innovation. However, in others, for example embedding tools to quantify embodied carbon across our major projects, new approaches may need to be developed. We know that we have a responsibility to improve the environmental performance and sustainability of our transmission network and we believe our goals to be challenging but achievable.

The United Nations' Sustainable Development Goals (SDGs) provide a global framework for delivering improvements in all areas of sustainability by 2030. As part of Iberdrola, we support the UN SDGs and have embraced these as part of our Sustainable Business Strategy and corporate governance system.

We are committed to working with our stakeholders, supply chain and the wider energy sector to address and come up with solutions to common challenges whilst sharing knowledge and best practice.

As a business, our approach to sustainability is defined in our Sustainable Business Strategy, which is underpinned by six key sustainability drivers. These have been developed since the inception of our strategy in 2017 through extensive collaboration with stakeholders. These focus areas are interlinked and our work to improve our environmental and social outcomes rarely touches upon single areas in isolation. This highlights our integrated, holistic approach to sustainability, ensuring that we consider all of the environmental, social and economic implications of our decisions and activities. As an owner and operator of electricity transmission and distribution infrastructure, we also aim to address common challenges and share knowledge both internally and externally.

Beyond our own ambition to be a sustainability leader, our strategy is shaped by three key influences:

Regulators and Government: As a regulated entity, we must respond to Ofgem's increasing focus on environmental sustainability, along with the UK and devolved Government's ambitions around climate and decarbonisation.

Compliance: In many cases, we are bound by law to act in a sustainable manner. We aim to build on a foundation of legal compliance to achieve SPEN's environmental & social targets.

Society and Stakeholders: In order to be a good global citizen, we are committed to working closely with stakeholders to develop our strategy. We have received clear and consistent feedback that SPEN should be a leader across all aspects of sustainability; leading positive change in the communities we serve and meeting the needs of our customers and employees.

Dashboard indicators

Climate change impacts

67%

Scope 1,2&3 Science Based Target reduction by 2034/35 from 2018/19 baseline

↓34%

Annual change in IIG emission (from previous reg year)

800 tonnes

Verified Carbon Offsetting Pending Issuance Units - expected to be sequestered through rewilding projects over the next 100 years

6 Years

of continuous certification to the PlanetMark™

↓25%

Annual change in business carbon footprint excluding losses (from previous reg year)

↓18%

Annual change in Business Carbon Footprint including losses (from previous reg year)

Contribution to energy system decarbonisation

£2.8m

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

186MW

Annual addition of low carbon and renewable energy capacity connected to the network

↑34%

Annual change in connections applications (from previous reg year)

Local environment

Zero

Environmental regulatory interventions in 2021/22

ISO 14001 Environmental Management Certification

3

Reportable environmental incidents

Sustainable society

8.1/10

Stakeholder satisfaction rate for those affected by all new transmission projects

16%

Gender pay gap for SP Transmission

Resource use and waste

Partner member of the Supply Chain Sustainability School.

98%

Waste diverted from landfill

142%

Change in annual total waste from previous year

86 kilotonnes

Annual total waste (network depots and construction)

51 kilotonnes

Change in annual total waste from previous year

EAP Commitments and environmental impacts

We have 59 RIIO-T2 commitments which span across 3 broad headings which are summarised below. The progress towards meeting these commitments are highlighted within the relevant sections of this report. A detailed analysis of each commitment showing the expected benefits, milestones and progress status can be found as an appendix to this report.

Decarbonisation and climate change impact 1

Ensuring our infrastructure is fit to deliver the Net Zero Carbon transition and continuing to reduce our carbon footprint are both key outcomes for our business, but they require careful balancing to achieve optimal outcomes. Developing our network means that we will emit greenhouse gases through the goods and services we procure to deliver this work, and at the same time, we are constantly working with stakeholders and looking for ways to reduce residual emissions associated with the day-to-today running of our business. Our T2 Business Plan saw us introduce:

- Science Based Targets for direct and indirect greenhouse gas emissions
- Our approach to addressing transmission losses;
- Our approach to reducing insulation and interruption gas emissions (eg. SF_6);
- And, our approach to reducing embodied carbon across our transmission network and associated activities.

Sustainable Procurement, Resource Use and Waste 2

Everything we do as a business has a potential impact, and it is up to us to make sure we leave a positive mark. Our procurement and waste management practices are closely linked to our carbon footprint, which is why we have been working with internal colleagues and our supply chain to align these with our sustainability and environmental ambitions.

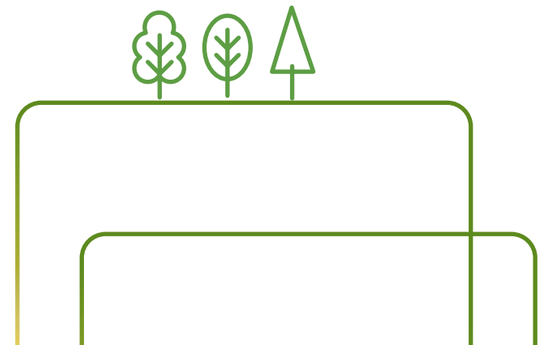
To achieve our targets of diverting 95% of our waste from landfill by 2023, and 100% by 2030 (excluding compliance waste), we have been working closely with colleagues across the business to carry out in depth analysis of our waste streams and understand how we can both reduce overall waste and extend the lifecycle of our resources. We also engage extensively with the wider energy sector to collaborate on common challenges and research more circular alternatives for commonly used materials.

To support our supply chain, we are now an active partner of the Supply Chain Sustainability School, an innovative platform that provides educational resources on sustainability topics and is free for all of our suppliers and staff to access. We are also working proactively with our supply chain, to ensure that they are able to comply with the minimum sustainability criteria in our tenders and to identify blockers to their adoption of their own carbon reduction targets.

Local Environment 3

The nature of our business means that we have the potential to have a significant impact on the environment local to our infrastructure. We operate by the principle that, wherever possible, we should leave things better than we found them and at minimum aim for "no net loss" on any of our projects. Our potential impacts range from damage to local biodiversity and pollution of land and waterways, to changes to the way the landscape looks and feels. In line with the principle above, we have set a broad range of targets around the following topics:

- Biodiversity & enhancing the local environment
- Ensuring our network is resilient to the impacts of climate change
- Visual Amenity
- Pollution Prevention



1 Decarbonisation and Climate Change Impact

The UK economy is decarbonising at pace, driven by ambitious national and international targets to keep global temperature rises well within a maximum of 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C.

Driving societal decarbonisation through the timely connection of renewable electricity generation ranks as our top priority, alongside continuing to provide excellent network reliability and availability. The key uncertainty facing our network – and how we develop it economically and efficiently – is the changing generation landscape, the scale, timing and location of new generation and the timing of generation closures.

1 *New low carbon generation connections*

186MW

2 *Low carbon share of generation*

89%

3 *Average time to issue connection offer*

69 days

4 *Connection offers accepted*

74

Notes: Item 2 above is based on generation capacity. Onshore wind, biomass and nuclear generation technologies have been categorised as forms of low carbon generation.

Items 3 and 4 above relate to offers for connection in the SP Transmission area only.

Quality of score related only to Connections customers

8.30 ODI Score

8.27 ODI Target

Connecting Low Carbon Generation

As a Transmission Owner, we design, deliver, and connect new generation and demand sites to our network. We connected 186MW of renewable generation to the SP Transmission network during the first year of the RIIO-T2 price control period (2021/22). This renewable generation capacity was connected across four new onshore wind farm developments: Douglas West, Kennoxhead Extension, Twentyshilling and Windy Rig.

Significant development and construction continues across our portfolio of new onshore and offshore windfarm connections for delivery in future years, as does our work to enable embedded low carbon generation technologies connecting to the SP Distribution network.

Applications for onshore and offshore wind farm connections continue to remain very significant in number - 118 connection offers were issued during the reporting period 2021/22 for connections in the SP Transmission area, with all offers being delivered in line with licence required timescales.

We are building on our approach in RIIO-T1, measuring the satisfaction of all our stakeholders and adopting a more targeted approach in our engagement. To measure customer satisfaction in this first year of the RIIO-T2 period, all Connections Customers were surveyed at key milestones known as the 'Moments that Matter' throughout the connections process. There are six 'Moments that Matter': Pre-application Engagement; Application Process & Offer; Development Phase; Delivery Phase; Outage Management; and Connected Customer Reviews. The surveys were undertaken on our behalf by a specialist third party. The score for overall satisfaction across all 'Moments that Matter' is 8.30, demonstrating a good level of satisfaction from our customers. This is a new incentive introduced for RIIO-T2, and therefore year on year comparisons are not possible. We have identified several areas of focus however and will continue to review our customers feedback to improve the overall customer experience during the connections process.

Innovating for decarbonisation and to protect the environment

The SP Energy Networks Future Networks team are involved in ongoing innovation activities that are primarily supporting decarbonisation and/or protecting the environment. With funding from the new Ofgem Strategic Innovation Fund, two such innovation Discovery phase project examples are Heat Balance and a Holistic Hydrogen Approach to Heavy Duty Transport (H2H).

Heat Balance
Decarbonisation will profoundly change the way we heat our commercial and domestic buildings. This project forms part of the blueprint required for that transition and supports government objectives. Both inter-seasonal and short-term thermal energy storage (TES) will be essential to balance the demand and supply for the future Net Zero Carbon heating system.

The Heat Balance Discovery phase project explored the commercial and technical feasibility of network flexibility from large-scale TES to reduce peak demand on the transmission and distribution networks over multiple timescales, reducing the need for network reinforcement and consequent environmental impact.

We will work with partners on how deployment of low carbon heating solutions can be better coordinated to minimise gas and electricity network constraints at lowest economic cost.

A Holistic Hydrogen Approach to Heavy Duty Transport (H2H)
Transportation is a major contributor to UK greenhouse gases, with passenger and freight trains causing 1.6 $MtCO_2e$ pa, equivalent of 27% of emissions in 2019. The rail industry has a target of removing all diesel passenger trains by 2040 (2035 in Scotland).

This Discovery phase project explores low carbon solutions by identifying the most efficient transition for rail decarbonisation. The project aims to develop the technologies, infrastructure and processes required to accelerate zero emission transport options between electricity, hydrogen and rail networks that reduces carbon emissions by removing diesel trains, plus maximises the connection of renewable energy and storage.

Innovation	A Holistic Hydrogen Approach to Heavy Duty Transport (H2H)	Heat Balance
Issue or barrier	Conventional rail electrification would lead to 8.7TWh of demand controlled by the railway timetable. Hydrogen-electric trains offer a cost-effective solution to the two sectors; by introducing flexible green hydrogen production, we can reduce constrained renewable generation and offer flexibility benefits to Transmission System Operator and Distribution System Operator whilst decarbonising the railway.	*To electrify and Decarbonise Heat (currently mainly Gas) & mitigate Electricity demand:* *The peak demand for heat is 4 times that of electricity* *There is a huge variation in heat demand between seasons as well as in-day* *There is a mismatch with non-dispatchable renewable generation* *Significant additional strain on both Transmission & Distribution* *Major Network Reinforcement & Upgrade will be required*
Annual achievements	H2H has developed tools to quantify costs for full electrification, partial electrification using battery-electric trains and green hydrogen trains for two non-electrified routes in Scotland that currently operate diesel trains. In Discovery we assessed 2 rail lines in Scotland, developing an outline Business Case that showed Green Hydrogen is the lowest cost option for the 280km line from Inverness to Thurso & Wick and Battery trains with trackside batteries are the lowest cost option for the 65km line Girvan to Stranraer.	Award of Ofgem Strategic Innovation Fund Discovery Phase Project to outline the concept, benefits, technologies, potential trial application to investigate through Alpha phase, understand broader concept in relation to UK applications.
Expected benefits	Our Discovery phase project assessed capital and operating costs, and emissions for 2 rail lines, comparing 4 options. This identified hydrogen-electric trains as the option with the lowest long-term costs for longer rural rail lines and the greatest decoupling of rail and electricity demand - offering the highest potential for flexibility benefits for both sectors. For the 170km Girvan to Stranraer route the results are closer between battery trains and hydrogen trains. Compared to full electrification costs of £184million, the savings range from £108million to £142million.	*Decarbonisation of Heating;* *Whole system efficiency;* *Improved network resilience;* *Reducing increasing costs to ESO, DSO, DNO and customers (particularly vulnerable);* *as well as addressing the potential scale infrastructure upgrades.* *UK Applications context for: Technology, Social – Economy, Commercial and Regulatory, Assessments of Archetypes.*
Timescales & next steps	**In H2H Alpha phase running into 2023 we will:** *Assess in full the benefits of flexible green hydrogen for rail traction* *Develop concept for full demonstration* *Develop the team and proposal for demonstration in a Beta Phase project* *Scottish Power, Network Rail, ScotRail & Transport Scotland will support throughout as the project Steering Group.*	**Timeline:** *SIF Discovery Phase concluded May 22, reported on feasibility of LTES Heat Balance & proposed Alpha Phase of Project.* *SIF Alpha Phase commenced August 22 to January 23. Providing UK context and feasibility of trial site. Beta Phase Application March 23* *SIF Beta Phase August 23 – If approved.* **In Parallel:** *Public engagement on LTES and Heat Balance concepts.* *Stakeholder Engagement* *Awareness of future applications*

Climate Change Impact

The development and maintenance of our transmission infrastructure is a key enabler for energy security and the Net Zero Carbon transition. However, as we continue to support the Net Zero Carbon transition, we must continue to make sure we are doing the right thing – in the right way, decarbonising our operations and addressing indirect emissions associated with our supply chain.

We have set ambitious targets and we are tracking the effectiveness of the decarbonisation initiatives outlined in our RIIO-T2 Environmental Action Plan towards reaching our goals. Our targets are deliberately challenging. To achieve them, we need transformation at every level of business.

Setting Validated Science Based Targets (SBT)
Recognising the importance of ongoing leadership and ambition, we have committed to reducing absolute scope 1, 2 & 3 Greenhouse Gas emissions at the scale of reduction necessary to meet the goals of the Paris Agreement, limiting global warming to 1.5°C or less. In order to achieve this, we will reduce our carbon footprint by 67.2% by regulatory year 2034/35 (from our 2018/19 baseline year). We have recently had our targets validated by the Science Based Targets Initiative **(See 'Companies Taking Action').** Further information on Scope 1, 2 and 3 emissions are outlined below:

1

Scope 1 – Activities owned or controlled by our organisation that release emissions straight into the atmosphere (direct emissions). Our Scope 1 emissions include SF_6 gas emissions and fuel use associated with operational activities such as transport.

2

Scope 2 – Emissions being released into the atmosphere associated with our consumption of purchased electricity, heat and cooling. These are indirect emissions that are a consequence of our organisation's activities, but which occur at sources we do not own or control. Our Scope 2 emissions include electricity losses, and energy use within substations and depots.

3

Scope 3 – Emissions that are a consequence of our actions, which occur at sources which we do not own or control and which are not classed as Scope 2 emissions. Our Scope 3 emissions are associated with upstream activities associated with the maintenance and development of our infrastructure.
See Scope 3 section

Our Business Carbon Footprint

Since 2013, we have monitored and reported our Business Carbon Footprint against short-, medium- and long-term targets. Our BCF includes all Scope 1 and 2 emissions.

In 2021/22, our annual carbon emissions totalled 14,425 tCO_2e (excluding losses). This is a 25% reduction from 2020/21 and 5,797 tCO_2e lower than our first year of reporting in 2013: equivalent to the annual carbon emissions of more than 5,300 households. This reduction was primarily achieved through a reduction in leakage of fugitive emissions from Sulphur Hexafluoride (SF_6) gas.

Emissions in tCO2e	Specific area	2018/19	2019/20	2020/21	2021/22
Building energy use	Buildings energy use - building electricity	540	302	106	92
	Buildings energy use - other fuel	21	50	38	47
	Buildings energy use - substation electricity	1,439	1,433	1,028	1,505
Operational Transport	Road	433	478	452	518
	Sea	0	0	0	0
	Air	0	0	0	0
Fugitive emissions	IIGs	19,184	12,079	17,672	12,085
	R410a (emissions from A/C systems)	0	0	0	170
Fuel combustion	Fuel combustion - Red Diesel and LPG	0	0	0	2
	Fuel combustion - Natural Gas	0	0	0	7
Electricity losses		202,371	192,067	160,105	132,554
Total excluding losses		21,616	14,343	19,296	14,425
Total including losses		223,987	206,409	179,401	146,979

25% reduction in Scope 1 & 2 emissions from 2020/21

↓25%

67% - carbon footprint reduction by 2034/35 from 2018/19 baseline - validated by SBTi

67%

29% - carbon footprint reduction by end of RIIO-T2 period 2025/26 from 2018/19 baseline

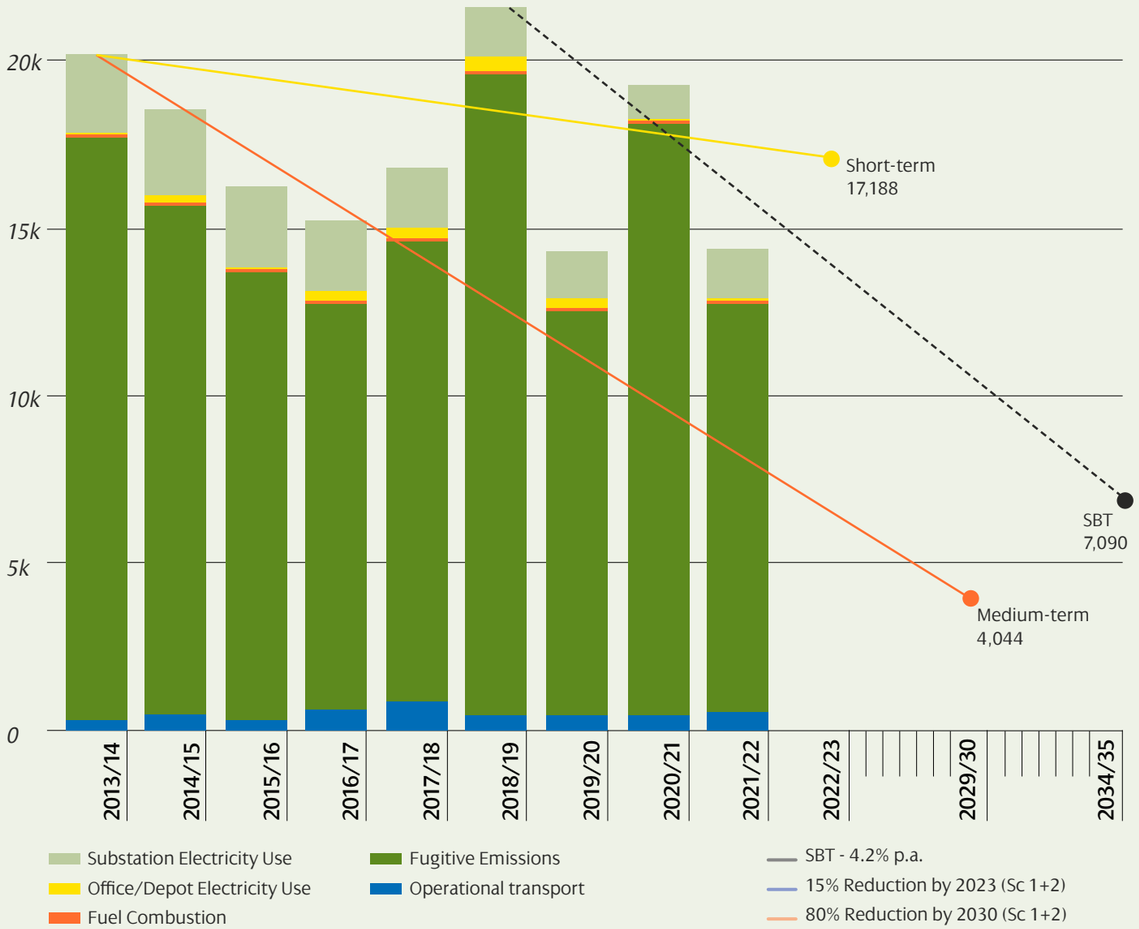
29%

This year we have exceeded out short-term reduction target of 15% by 2023 from a 2013/14 baseline by 2,763tCO_2e – and we will continue to work towards meeting our medium-term target and Science Based Target, with the goal of achieving Net Zero Carbon by 2035.

To ensure we continue to accurately report our carbon footprint, our annual calculations are externally verified through Planet Mark™. The Planet Mark™ 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.

This year we achieved our 6th year of certification with The Planet Mark™ for our Business Carbon Footprint, undertaken by Planet First in accordance with ISO 14064-3 (2006). The Planet Mark™ is partnered with Cool Earth, the award-winning charity that works to halt rainforest destruction in Central Peru. For every Planet Mark Certification delivered, a pledge is made to protect an acre of rainforest.

Business Carbon Footprint Scopes 1&2 and Targets



Scope 1 — *IIG Emissions*

2

In 2021/22, Insulation and Interrupting Gas (IIG) leakage was equivalent to 12,196 tCO_2e. This is the largest contributor to our scope 1 and 2 (excluding Losses) business carbon footprint (c.85%).

IIG emissions were dominated by SF_6 leakage, which has a very high global warming potential, *23,500 times higher than carbon dioxide equivalent. Total emissions from IIG decreased by 34% relative to the previous reporting year.

IIG emissions

IIG type	Unit	2018/19	2019/20	2020/21	2021/22
Total IIG emissions	tCO_2e	20,103	12,662	18,524	12,196
SF6 emissions	tCO_2e	20,103	12,662	18,524	12,196
Other (G3) emissions	tCO_2e	0	0	0	0
Leakage rate	%	0.86%	0.47%	0.68%	0.45%
Interventions per annum	Number				0
Estimated impact of interventions	tCO_2e avoided/ abated				0

Annual emissions can be influenced by numerous factors, such as significant faults or leaks from assets on the Transmission Network. As can be seen in the table above, overall, the SPT IIG leakage rate for regulatory period 2021/2022 was 0.45%. A large part of this can be attributed to our SF_6 repair plan included within our RIIO-T2 settlement. The repair plan was derived from thorough analysis of SPT's SF_6 filled equipment with a wide range of interventions considered to ensure any leaking assets were either fully refurbished or, if this cannot be achieved, replaced. Several planned repairs have been completed throughout the year resulting in a low leakage rate and an emissions reduction. It is our expectation that emissions will reduce further in the coming years as we progress through the repair plan.

We have committed in our RIIO-T2 business plan, that to mitigate the environmental impact of our SF_6 emissions, we will only use SF_6 where alternative IIGs are not viable.

This currently means all our 132kV projects will be specified SF_6-free and where we have Gas Insulated Switchgear (GIS) installations at 275kV & 400kV, we will endeavour to use SF_6-free Gas Insulated Busbar (GIB) as standard, if the technology is available for the site. Currently, the SF_6 free solutions offered by SPT's main switchgear suppliers vary in gas composition which comes with its own challenges. The Global Warming Potential (GWP) for all solutions are notably lower than SF_6 ensuring a future reduction in SPT emissions. Moreover, we are actively in discussion with suppliers to adopt other SF_6-free assets as the technology emerges.

The role of our SF_6 Working Group has grown within SP Energy Networks, performing bi-monthly reviews of SF_6 related issues, ensuring any leaks are appropriately remedied with undue delay, engaging with SPD and SPM on best working practices and maintaining our RIIO-T2 commitments stated in **our T2 Environmental Action Plan.**

***Fugitive emissions as stated in the Business Carbon Footprint are as per the OFGEM RRP guidance and based on the BEIS conversion factors (in line with Greenhouse Gas Protocol) of 22,800kgCO2e for SF_6. However, for IIG Incentive reporting (which includes SF_6) OFGEM require us to convert using 23,500kgCO2e in line with the latest UN IPCC report. Were we to convert using the UN IPCC rate within the BCF, this would increase our carbon footprint by 371tCO_2e for the current reporting year.**

Scope 1
— Fuel Use and Operational Transport

With the exception of IIG leakage, the remainder of our Scope 1 emissions originate from operational transport (e.g. fuel consumed in our vehicles) or other fuel use (e.g. fuel consumed in generators).

Fuel from operational transport resulted in total carbon emissions equivalent to 518 tCO_2e. This is an increase of 17% compared to the previous reporting year (452 tCO_2e). This increase is largely attributed to lifting of covid-related travel restrictions which resulted in an increase in operational transport.

In order to reduce the emissions associated with operational transport, SP Transmission has committed to transitioning 100% of operational vehicles to low carbon alternatives working with suppliers and other fleet operators to pilot technically viable alternatives and drive technical advancements.

In 2021/22, we transitioned two small vans from internal combustion engine to fully electric. We also installed 8 charging points at our depots.

Our primary role as an electricity network provider is to keep electricity flowing to our customers. This poses a barrier to our electric vehicle implementation. In the event of a power cut, we must be agile and respond as quickly as possible to restore power. Restoring power in the event of a power cut poses unique challenges with regards to how we can charge our vehicles while responding in a quick and agile manner. In order to navigate these hurdles, SP Energy Networks is collaborating with the Energy Innovation Centre (EIC), Scottish and Southern Electricity Networks (SSEN) and other utilities to develop a roadmap of innovation, investment, new business models and products that are needed to overcome these challenges.

***Modified** two small combustion engined vans to fully electric*

2 electric vehicles

***Charging points installed** at our depots*

8

Scope 2 *— Emissions Associated with Substation and Depot Energy Use*

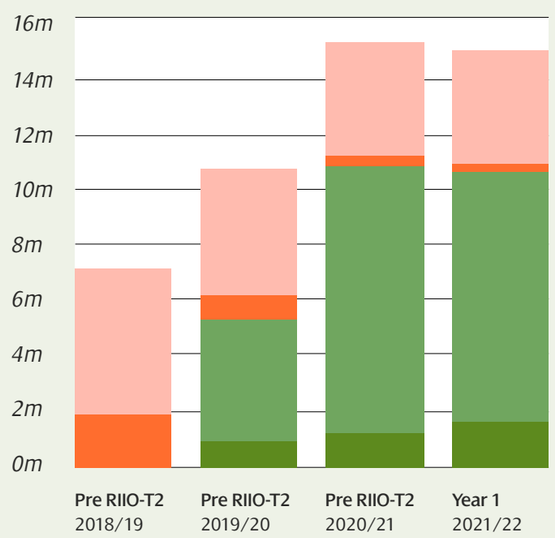
2

In 2021/22, electricity used in offices/depots totalled 1,911,684 kWh. A total of 1,668,091 kWh (87%) of this was sourced from renewable energy through our Renewable Energy Guarantees of Origin (REGO) tariff. Electricity used in our substations totalled 12,715,773 kWh. A total of 8,741,755 kWh (69%) of this was sourced from renewables through our REGO tariff.

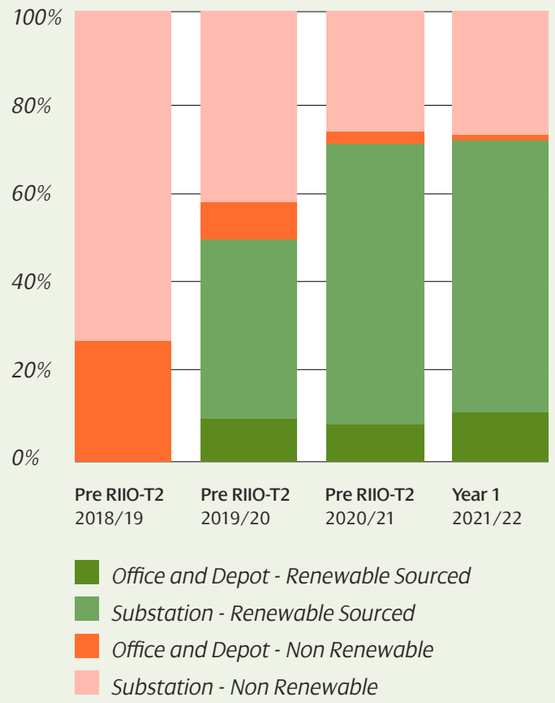
Total carbon emissions associated with electricity use in both substations and offices amounts to 1,597 tCO_2e. Since 2013/14 emissions associated with electricity use have decreased by 36%. This has been driven by reductions in the UK energy emissions and the decision to source all of our electricity from renewable sources (via our REGO tariff). However, it is noted that emissions associated with electricity consumption have increased by approximately 40% compared to the last regulatory year. This was primarily driven by a change in the carbon conversion factor. Other forms of energy use in buildings contributed around 47 tCO_2e – which is primarily due to gas use.

Recognising the need to reduce both carbon emissions and energy use, we are taking action to reduce energy consumption by undertaking energy efficiency measures on one third (48) of our substations. In 2021/22 we undertook the required survey work for our energy efficiency programme, to identify suitable sites for energy monitoring and establish the scope of building refurbishments. A total of 15 substations, which represents a subset of substation structure archetypes, age groups, geographic locations and roof types, have been selected for energy monitoring . In 2021/22 we began collaborating with Edinburgh Napier University to pilot an energy monitoring methodology, which uses current transformer clamps to monitor electricity use and deliver data measurements wirelessly. The results of the pilot will be available in the next Annual T2 Environmental report. Works are anticipated to start in October 2022.

Energy Use in Offices, Depots and Substations *kWh*



Energy Use Breakdown in Offices, Depots and Substations



Scope 2
— *Transmission Losses*

RIIO-T2 Commitments: We will implement our T2 losses Reduction Strategy to reduce losses on the network by an estimated 14,500MWh.

Uniquely for electricity networks like SP Transmission, network losses are included in our Scope 2 footprint. This includes the carbon emissions associated with total energy that is lost across our network as electricity travels from energy production to end consumer. Within SPT, we are implementing our losses reduction strategy which will reduce losses by an estimated 14,500MWh (c.3%). This is being achieved as ageing equipment such as transformers, shunt and series reactors and overhead lines are replaced by new lower-loss equipment. Generally, it is not cost effective to replace equipment that has not reached the end of its life purely to reduce losses. However, losses are considered when selecting replacement equipment and substantial loss reductions can be achieved, particularly when replacing old transformers with new low-loss equivalents.

To date, asset replacement has been completed on a number of transmission circuits, saving in the order of 400MWh in losses per year, if it is assumed that the circuit loading follows the same pattern as before the replacement work was carried out. This is a small amount relative to the target, but future asset replacement works are expected to yield higher loss reductions.

However, despite the implementation of our losses reduction strategy, losses are physically unavoidable – and there will always be a proportion of energy lost as it is transported to our homes and business. As the size, complexity and loading of our network increases, our losses are also expected to increase. 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.

	Unit	2018/19	2019/20	2020/21	2021/22
Annual losses	TWh	0.720	0.759	0.701	0.637
Share of total electricity transmitted	%	N/A	N/A	1.9%	1.75%
CO2 emissions (losses)	tCO_2e	202,371	192,067	160,105	132,554

17% reduction in CO2 emissions from losses compared to 2020/21

↓17%

Scope 3
— *Carbon Footprint*

3

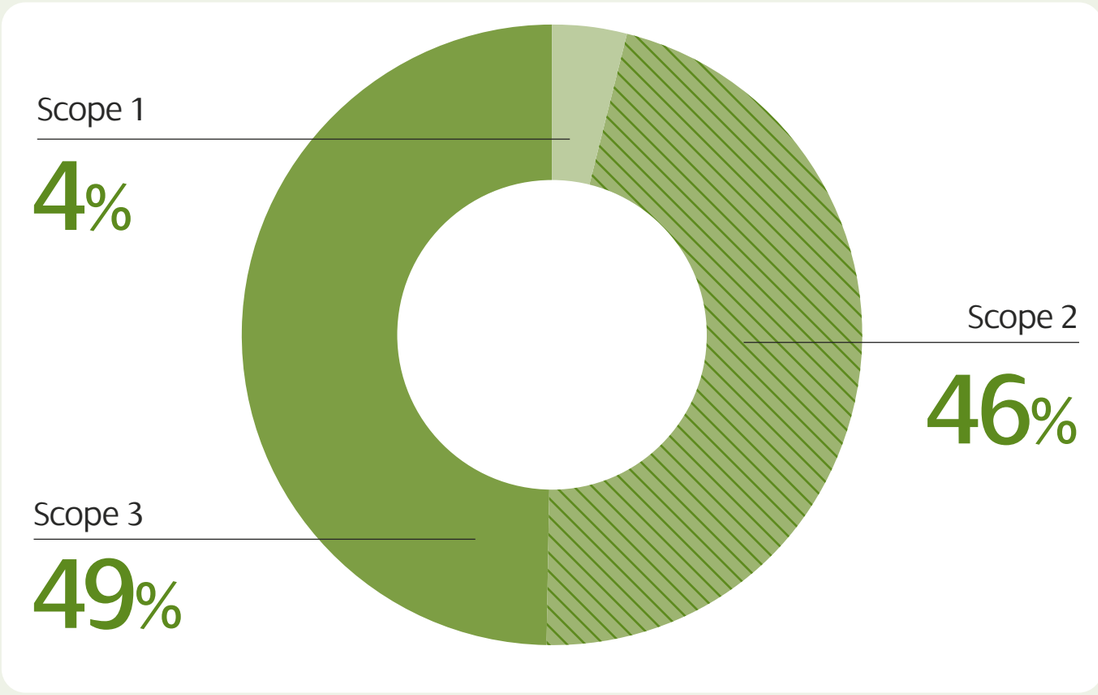
RIIO-T2 Commitments: We will identify, and subsequently monitor and report metrics to track Scope 3 Science Based Targets (by 2023) and collaborate with our supply chain and other TO's to drive reductions (throughout T2).

Scope 3 emissions include emissions associated with our Supply Chain. Recognising the importance of addressing indirect emissions associated with our supply chain and indirect activities, we have set Scope 3 Science Based Targets aligned to the scale of reduction necessary to meet the goals of the Paris Agreement, which have now been publicly validated by the Science-Based Targets Initiative.

Our Scope 3 footprint has been broken down into different categories in line with the GHG Protocol Technical Guidance for Calculating Scope 3 Emissions. Scope 3 Calculation Guidance | Greenhouse Gas Protocol (ghgprotocol.org))

Further information on Scope 3 categories and their relevance to overall Scope 3 footprint are outlined below in our Case Study: Setting a Scope 3 Carbon Footprint.

In line with our commitments, we will report and track our Scope 3 Carbon Footprint within this report on an annual basis.



Case Study:

Scope 3 Screening

An initial exercise to develop a Scope 3 Carbon Footprint baseline indicates that Scope 3 emissions account for approximately 49% of SP Transmission total carbon footprint (Scope 1, 2 and 3).

In order to develop a Scope 3 baseline, we worked with Carbon Trust to screen categories of Scope 3 emissions to understand which categories are significant; and which categories should be excluded. Categories 9 to 15 have been excluded because we do not sell material products or services. Category 8 is excluded as it was concluded that Upstream Leased assets were insignificant.

Categories which were deemed to be significant in the screening exercise include:

Purchased Goods & Services (1) and Capital Goods (2), which include emissions of purchased goods and services.

Fuel and energy related activities (3), which include all associated with the extraction, production, and transportation of fuels and energy not already accounted for in scope 1 or scope 2, from losses.

Upstream emissions of transportation and distribution (4) which includes emissions which occur through the use of vehicles and facilities not owned or controlled by SPT.

Waste generated in operations (5), which includes all emissions associated with disposal and treatment of waste throughout our operations.

Business Travel (6), including emissions associated with vehicles used by SPT employees which are not owned or operated by the reporting company.

Employee commuting (7), includes emissions associated with employees travelling between their homes and their worksites in vehicles not owned or operated by SPT.

Setting a Scope 3 Carbon Footprint

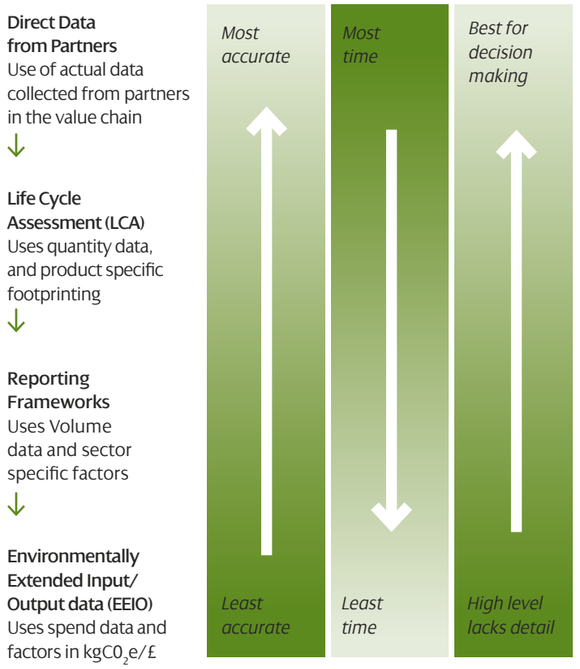
Category	Methodology and assumptions	Data Source	Completeness/ Accuracy RAG Rating
Purchased goods and services	Carbon emissions are calculated using Environmentally Extended Input / Output (EEIO) factors which uses spend data to calculate carbon emissions ($kgCO_2e/£$)	*Annual financial invoices EEIO Factors*	
Capital Goods	Carbon emissions are calculated using Environmentally Extended Input / Output (EEIO) factors which uses spend data to calculate carbon emissions ($kgCO_2e/£$).	*Annual financial invoices EEIO Factors*	
Fuel and energy related activity	Carbon emissions are calculated from volume data (fuel and energy related activity) and sector specific factors (DEFRA Carbon Conversion Factors)	*Fuel use data stored within an internal database DEFRA Factors*	
Upstream transportation and distribution	Carbon emissions are calculated using Environmentally Extended Input / Output (EEIO) factors which uses spend data to calculate carbon emissions ($kgCO_2e/£$).	*Annual financial invoices EEIO Factors*	
Waste generated in operations	Carbon emissions are calculated from volume data (waste tonnage and end of life treatment) and sector specific factors (DEFRA Carbon Conversion Factors) - calculated within our online SmartWaste platform	*From contractors and construction sites, all tracked in Smart Waste DEFRA Factors*	
Business travel	Volume Data (Business travel distances and travel modes) and sector specific factor (DEFRA Carbon Conversion Factors)	*Records of employee travel - stored within an internal Database DEFRA Factors*	
Employee commuting	Commuting assumptions are based using average transport types, commuting frequency and length of the trip, based on RAC Foundation data and UK statistics on national travel. Emissions are then calculated per employee using the DEFRA Carbon Conversion Factors.	*Commuting averages Employee head count Factors"*	

Following the screening exercise, a Scope 3 calculation was undertaken to estimate the significance of each category. The calculation hierarchy used to estimate Scope 3 emissions is shown below.

Given the lack of granular data necessary to develop an accurate understanding, emissions for Categories 1, 2 and 4 have been calculated by applying an EEIO (Extended Input/Output Factor) factor to financial data. This is the least accurate estimation methodology (hence the red RAG status), but one which was possible with the information available. Throughout RIIO-T2, we will move to a methodology which allows a more accurate understanding, evolving our strategy so that we gather information directly from our supply chain.

Fuel and energy related activities, waste generated in operations, business travel and employee commuting have been developed using a life cycle assessment methodology. This is a much more accurate method of estimation and, although improvements in our calculation methodology should still be pursued, it has allowed us to accurately report emissions under these categories. Full information on the methodology for calculating scope 3 emissions and the confidence in the data is included in the table 'Setting a Scope 3 Carbon Footprint'.

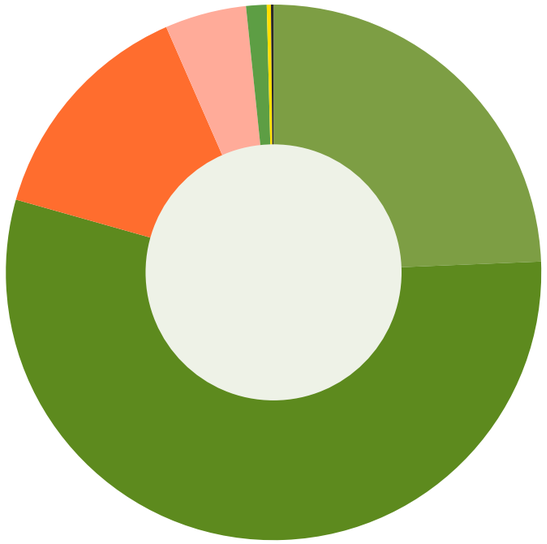
Scope 3 – *Calculation Hierarchy*



The results of our Scope 3 baselining exercise have been included below:

Purchased Goods & Services (1) and Capital Goods (2) account for the majority (79%) of Scope 3 emissions. As previously noted, these categories are based on financial spend and are principally associated with the development of our infrastructure, although it includes all services purchased in the financial year. Emissions associated with fuel and energy related activities account for approximately 14% of emission and are principally associated with indirect emissions associated with energy losses across the network. Upstream transportation and distribution emissions account for approximately 5%. The remainder of the categories account for approximately 1% of our total Scope 3 emissions.

Scope 3 – *Baseline Breakdown by category* *tCO2e*



- Category 1 Purchase Goods & Services, **53,411**
- Category 2 Capital Goods, **120,654**
- Category 3 Fuel and Energy Related Activities, **30,817**
- Category 4 Upstream Transportation & Distribution, **10,790**
- Category 5 Waste Generated in Operations, 2,717
- Category 6 Business Travel, **547**
- Category 7 Employee Commuting, **344**

Embodied Carbon & Carbon Management in Infrastructure

RIIO-T2 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.

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.

We will collaborate with our supply chain and other Transmission Operators to drive scope 3 and embodied carbon footprint reductions.

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

Embodied carbon includes all greenhouse gas emissions that can be associated with the supply of materials, provision of equipment and construction emissions associated with the maintenance and development of our transmission network. This is generally synonymous with Capital Carbon, which includes all carbon associated with the creation and end of life treatment of an asset. For an Energy Network Operator like SPT, embodied carbon emissions generally fall within Scope 3 and are principally associated with the materials and equipment which are manufactured and transported by our global supply chains, before being installed on site.

While it is recognised that embodied carbon emissions contribute significantly to the total life cycle emissions associated with infrastructure, it is difficult to calculate, and the data and calculation methodologies are comparatively less mature than operational emissions. Although databases exist which can be used to estimate embodied carbon emissions from common construction materials like concrete and steel, there is a lack of supplier specific data which can be used to calculate more complex or bespoke equipment such as electrical equipment. In the first year of RIIO-T2, we have worked collaboratively with our stakeholders to develop processes and tools which will allow us to gather embodied carbon information from our supply chain.

In order to gather supplier specific information from our supply chain, we have worked with NGET and SSE Transmission through our collaborative group UK ROCCIT (UK Reduction of Capital Carbon in Infrastructure: Transmission) to collectively use the UK Transmission Operator Carbon Product Calculator. This carbon tool can be shared with our supply chain to gather information on complex electrical equipment, in order to address carbon emissions gaps. The Carbon Product Calculator is publicly available to download through our Supply Chain Sustainability School home page: SP Energy Networks - Supply Chain Sustainability School. Data collected from the Carbon Product Calculator Tool is managed within the UK Transmission Operator Carbon Asset Database, which is also shared by the three UK Transmission Operators. This database holds emissions factors for a variety of common civil materials and electrical equipment, which can be applied to develop an understanding of embodied carbon emissions associated with infrastructure development projects.

In line with our commitment to implement processes for carbon management in relevant business processes by 2023, we are developing carbon management tools which will apply data from the Carbon Asset Database to our quantity surveying process. This will allow us to cost projects in terms of carbon emissions, which will allow us to understand, report and take action to reduce carbon, in line with recommendations from PAS 2080 Carbon Management in Infrastructure Specification.
We anticipate this will be implemented in 2023, allowing accurate reporting in subsequent publications of our AER during the T2 period.

Case Study:

Embodied Carbon

In 2021/22, we undertook a project to further develop an understanding of embodied carbon emissions associated with construction materials (concrete, steel etc.) and electrical equipment (switchgear, conductors etc.), used within our transmission infrastructure development projects. This includes an estimate of the greenhouse gas emissions associated with the production of materials and equipment, including emissions from the supply of raw materials, manufacturing and fabrication of raw materials into final products. In addition, the study estimated emissions associated with transporting materials and equipment from suppliers to our construction sites.

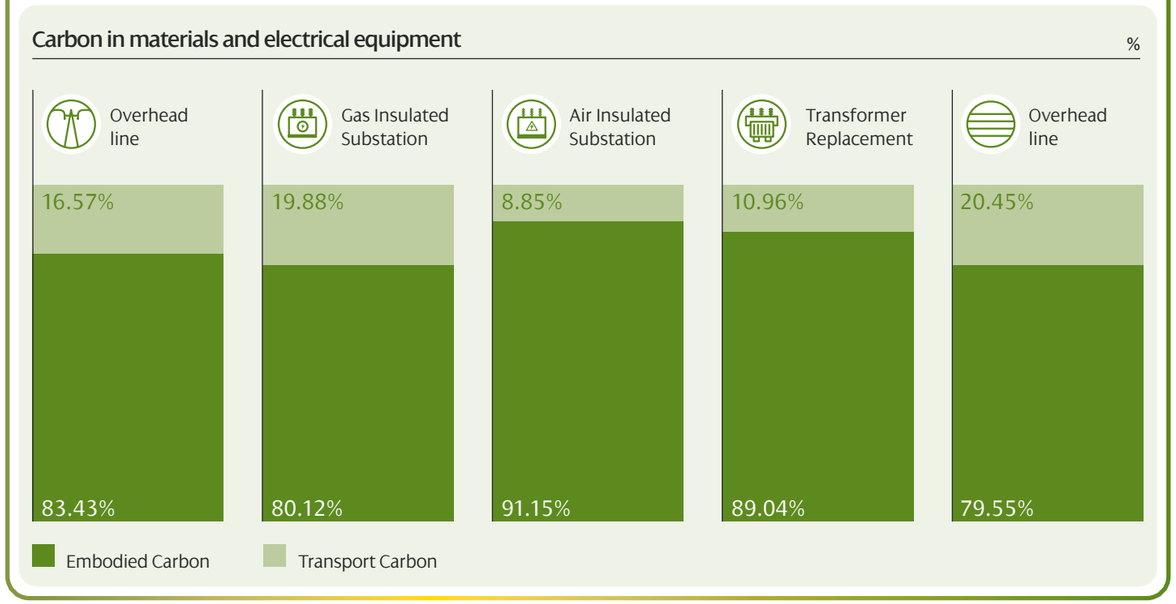
Using detailed historical project data, we developed a carbon assessment for 5 different types of transmission development projects using carbon factors within the UK Transmission Operator Carbon Asset Database.

The 5 project types include:

- Overhead Line Project
- Air Insulated Substation Development Project
- Gas Insulated Substation Development Project
- Transformer Replacement Project
- Underground Cable Project

Although further work is required to gather more data, our initial assessment indicates total embodied carbon emissions associated with the supply of construction materials and electrical equipment to site is approximately 185 $tCO_2e/£m$ to 696 $tCO_2e/£m$.

In the next regulatory year, we will focus on improving our embodied carbon estimate by repeating the calculation for more projects – in addition to developing an understanding of emissions associated with project construction (i.e. fuel and energy use during the construction phase). We will continue collaborating with our supply chain to gather accurate carbon information, working to benchmark and reduce embodied carbon associated with the development of our critical infrastructure over the RIIO-T2 period.



Carbon Offsetting

RIIO-T2 Commitment: 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.

Our primary focus is on reducing our carbon footprint; we do not simply offset emissions to avoid taking action. However, it is recognised that there are fugitive emissions which cannot technically or feasibly be reduced, and carbon offsetting will need to form part of our strategy.

In order to offset SF_6 emissions from a failed repair on a leaking asset, until its replacement, we have developed a carbon offsetting approach, focussed on carbon removal in line with The Oxford Principles for Net Zero Carbon Aligned Carbon Offsetting, ensuring high probability of 'Additionality' and low probability of 'Reversibility'. Our carbon offsetting approach is outlined below:

We will offset our emissions 'locally' relative to the emissions source

We will prioritise 'carbon removal' over 'carbon reduction' in line with Net Zero Carbon target setting, as defined by the Science Based Target Initiative

We will focus on rewilding and explore environmental restoration options, e.g. peat restoration, rather than commercial foresting where practical, to drive additional environmental and social benefits

We will revise our carbon offsetting approach as best practice evolves and new technologies become technically and commercially viable, moving to carbon removal technology with long term storage.

Case Study:

Hawkshaw Rewilding Project

SP Energy Networks have partnered with Forest Carbon at their Hawkshaw site in the Scottish Borders to offset carbon emissions in line with our Carbon Offsetting Approach. We have worked with Carbon Forest Trust to secure 800 tonnes verified carbon offsetting pending issuance units, supporting, support the planting of new native woodland which, once mature, will sequester carbon and provide habitat for other local wildlife species.

Project summary

FOREST CARBON

Country	Scotland
Location	Scottish Borders, nr. Biggar
Project completion date	May 2021
UK grid reference	NT077226
Total gross planted are	31.54 hectares
Anticipated CO^2 capture	11,491 tonnes
Approximate trees planted	44,550
Species planted	Alder, Aspen, Bird Cherry, Downy Birch, Holly, Scots Pine, Sessile Oak, Rowan, Willow Species

Meets UK Forestry Standard – Yes
Woodland Carbon Code status – Registered

Narrative:
The vision at Hawkshaw is to restore rough grazing land into native woodland, with a sensitive design allowing for integration of trees with existing peatlands, including an area of blanket bog.

The resulting suite of habitats will become an important refuge for a range of wildlife, an area of amenity for local people, and help to provide future seed sources for native woodland expansion in a denuded part of southern Scotland.

Wildlife friendly tree species like juniper, hazel and bird cherry will provide food for a wide variety of insects, birds and mammals and careful planting of birch around areas of blanket bog will lead to the formation of bog woodland, which has become a rare habitat in the UK.

2 Sustainable Procurement, Resource Use and Waste

As a sustainable networks business, we need to embed sustainability across everything we do, from the goods and services we procure to the design and delivery of projects and operations, taking into account impacts along the value chain with a cradle-to-cradle approach to sustainable procurement and resource management. A resilient network needs a supply chain to match.

We work collaboratively to improve the circularity of our resources, recognising the value of keeping them in use for as long as possible and retaining their value. In line with this, we have set challenging business targets to divert 95% of our waste from landfill by 2023, and 100% by 2030 (excluding compliance waste).

Sustainable Supply Chain

Our suppliers are instrumental in delivering our plans and enhancing supply chain sustainability. We are working to ensure that our suppliers' standards and ambitions are reflective of our own. Continuous engagement with our supply chain is crucial, and we support them by offering access to the resources they need to help bring them along on our Net Zero Carbon journey, ensuring smaller suppliers are not left behind.

Our supply chain sustainability strategy is outlined in our RIIO-T2 Business Plan, Supply Chain Sustainability section. This strategy embeds a range of sustainability considerations to deliver 'a reliable, efficient and sustainable network', identifying the need to build innovation, efficiency and sustainability into the delivery of our purpose as a transmission network owner. Our strong relationship with our supply chain is critical to the successful and sustainable delivery of our plans.

Status update
This year, we further enhanced our standard contract terms, pre-qualification questionnaires and specifications, obligating our suppliers and contractors to meet high environmental management standards. This drives sustainability at the very offset of new contracts, highlighting our expectations of suppliers, which will ultimately aid our journey to Net Zero Carbon.

Where our strategic suppliers do not meet our minimum sustainability criteria, we work with them to establish improvement plans. This is managed via the Iberdrola and Scottish Power Groups' Environment, Social and Governance (ESG) due diligence process, where we assess the ESG compliance of our suppliers via a series of scored questions. Sustainability is a key element. "Environment" segment questions are scored on items such as environmental management and systems, greenhouse gas inventory, conservation of biodiversity, climate change risk monitoring and action plans and responsible water use. Suppliers are required to meet an overall ESG score of 51 points AND exceed 30% for each of the ESG segments. Where the overall score or the individual ESG percentage is not met, suppliers are issued with specific customised improvement plans. This is done at tender stage where the power to influence suppliers is at its greatest. All levels of the SP Energy Networks Procurement team have a personal objective to implement this process. The objective reflects the SP Energy Networks target of 85% of tenders awarded to have suppliers assessed as ESG compliant.

We have worked with other network companies to create a joint approach to supply chain Key Performance Indicators (KPIs). As a group we have developed common performance metrics, with the purpose to improve reporting for our suppliers and contractors. Setting consistent metrics will enable an industry wide baseline exercise to commence, delivering concise and clear reporting and improve the user journey for our suppliers. These performance metrics are currently being included within our RIIO-T2 contract documents, with suppliers required to submit data through our data reporting tool SmartWaste. As we look forward to 2022/23 we will be able to extract reports from SmartWaste, enabling us to set improvement targets year on year, taking us one step closer to achieving our Sustainability Goals.

This year we have included a greenhouse gas (carbon) metric within our procurement processes in line with the ISO20400 Sustainable Procurement Standard. We have embedded a societal cost of greenhouse gas emissions within our Cost Benefit Analysis (CBA). Our CBA process is used to determine a preferred procurement option by embedding wider considerations beyond capital cost. When we procure electrical equipment containing IIG for example, we consider the societal cost of greenhouse gas emissions which is projected to arise from IIG leaked into the atmosphere over the lifetime of the equipment. By embedding the societal cost of greenhouse gas emissions into our CBA, we are driving solutions which have a lower carbon footprint and are giving clear signals to the market that the lowest cost equipment is not simply about capital costs.

Performance

We have developed our methodology for assessing supply chain sustainability performance quantitively, to monitor progress against our target of 80% of RIIO-T2 suppliers (by value) meeting enhanced environmental standards. We are doing this in two ways, firstly through our Go Supply Platform sustainability scoring which sets minimum standards for supply chain organisation sustainability and secondly through the new suite of sustainability Key Performance Indicators (KPIs), based on our new tender documentation requirements, which will ensure standards are met on individual contracts.

The introduction of the SmartWaste reporting tool has advanced data collection to include reuse, as well as landfill and recycling rates which are the focus in the table below for 2021/22. Converted to percentages, the data illustrates a significant improvement from 2018, where only 46.4% of waste was diverted from landfill. During 2021 diversion from landfill has increased significantly to 97.7 % (please see table on page 35)

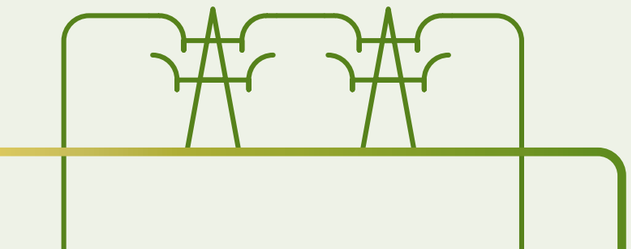
Case Study:

Supporting our suppliers with sustainability improvement plans

Through our innovative platform 'Go Supply' we identified a key supplier who did not meet our sustainability targets across ESG areas. We acted and produced an improvement plan for the supplier detailing the environmental, social and governance areas they need to focus on. The key outputs achieved were:

- Encouraged the supplier to identify and implement measures for good water use management
- Supplier segmented stakeholders that can impact or be impacted by the company's activities
- Encouraged the supplier to issue an annual Social Responsibility/ Sustainable Development Report

As a result, the suppliers score improved from 47.7 to 77 following our improvement plan and were awarded the contract.



Efficient Resource Use and Waste

Status update

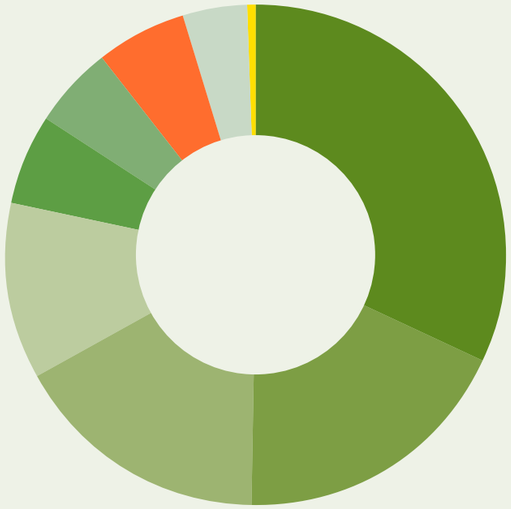
During 2021/22 we carried out a gap analysis against BS8001 Circular Economy standard to create a circular economy action plan to target activity. We started delivering on the initial phases including framing and scoping, baselining material use, waste and current circular practice, this will be completed in 2022/23.

We commenced idea generation and feasibility, with a focus on electrical assets through the Asset Reuse and Recovery Collaboration (ARRC), please see separate case study below. The action plan outlines high level future activity to the end of 2024, including building the business case for circularity, piloting and prototyping, delivery and continuous and transformational improvement.

In 2021/22 part of our new contract requirements were site waste management plans for all new major projects, requiring contractors to detail their approach to sustainable resource management, reduce waste to landfill and follow the waste hierarchy. Delivery will be monitored through the SmartWaste data collection and monitoring platform; all major projects contractors now use this system. Next steps for SmartWaste include further on-boarding of our Transmission operations contractors. As we improve data collection, we envisage that our waste tonnage figures will increase in the short term, due to improved accuracy and reporting rather than growth in actual tonnage.

Quantification of material use is an area of low maturity due to the complexity of data gathering. During 2021/22, we started the process of analysing our available data and baselining materials used on a range of major projects. In order to identify the environmental impact of materials CO2e emissions was used as the primary metric. Materials with significant impact were concrete for foundations, conductors, insulators and fittings, steel work and electrical assets. We have started to identify circular approaches, please see ARRC case study. The next step will be to create a Circular Opportunities register for all priority materials.

Materials used on major projects 2021/22 %



- Concrete Ancillaries, **32.75%**
- Insulators and Fittings, **18.72%**
- Conductors and Fittings, **16.86%**
- Steelwork, **11.78%**
- Miscellaneous, **5.93%**
- High Voltage Equipment, **5.25%**
- Cost Correction Factor, **4.32%**
- Busbars, **0.39%**

Performance

The most significant success in sustainable resource use in the reporting year was exceeding our target of 95% waste diverted from landfill by 2023, in 2021/22 we diverted 97.7% of transmission waste (see graph below). This was due to several factors:

- Due to volume, diversion of soils from landfill was a key focus, recognising the importance of prioritising the waste hierarchy at the design stage to minimise soil excavation and identify early opportunities to reuse on and off site.
- Increased contract requirements in new procurement documents.
- Better reporting throughSmartWaste.
- Prioritising and promoting the waste hierarchy, a significant % volume of waste moved up the hierarchy from landfill to recycling and reuse.

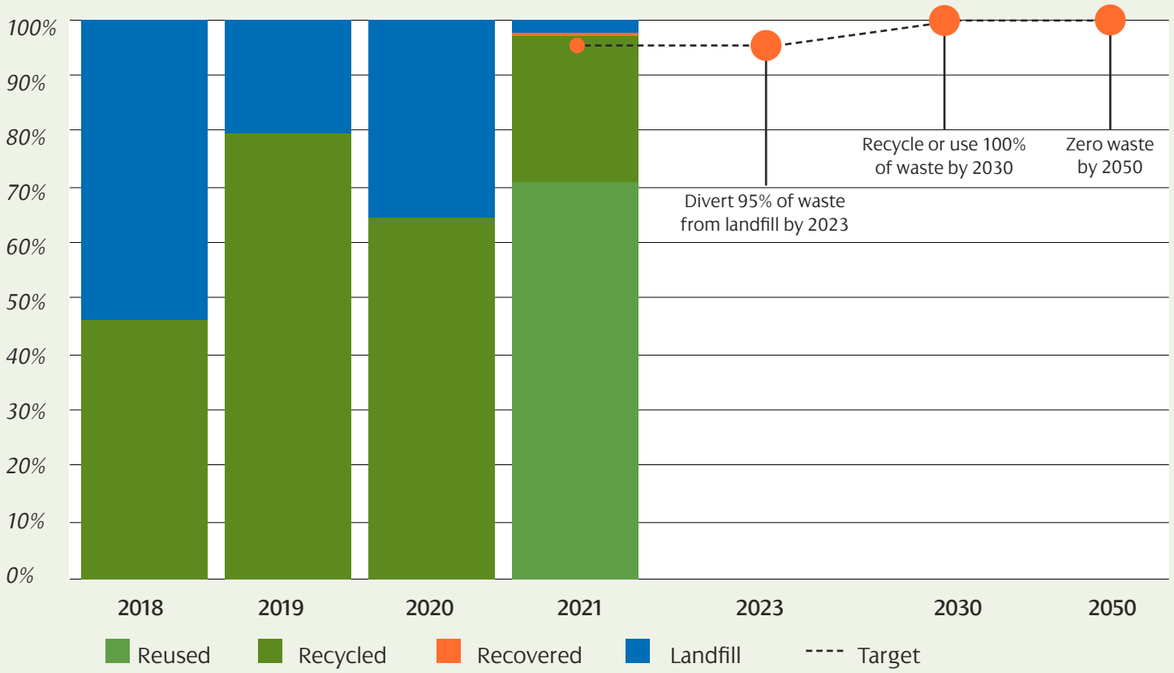
Quantity of Depot and Construction waste by fate (by calendar year) *Thousand Tonnes*

	2018	2019	2020	2021
Reduce	-	-	-	-
Reused	-	-	-	61.6
Recycled	44.2	29.6	23.2	22.4
Recover	-	-	-	0.4
Landfill	51.0	7.5	12.5	1.9
Total metric kilotonnes of waste	**95.2**	**37.1**	**35.6**	**86.3**

Total tonnage of waste by type and associated fate

	2018	2019	2020	2021
Reduce	0.0%	0.0%	0.0%	0.0%
Reused	0.0%	0.0%	0.0%	71.4%
Recycled	46.4%	79.8%	65.0%	25.9%
Recover	0.0%	0.0%	0.0%	0.5%
Landfill	53.6%	20.2%	35.0%	2.3%
Percentage of waste diverted from landfill	**46.4%**	**79.8%**	**65.0%**	**97.7%**

Waste to landfill reduction



Case Study:

Major Projects Surplus Re-use

Recognising that SPT Major Projects often have surplus electrical assets and material on sites, historically destined for disposal, a SP Transmission Project Manager created a re-use system to ensure materials are no longer wasted. This has been trialled across 3 sites with good uptake of materials ranging from plastic ducting to circuit breakers. The trial recorded materials exchanged but not weight so quantification of savings in not possible at this early stage.

The next steps will be to look at digitalisation options to rollout the project.

Asset Reuse Recovery Collaboration (ARRC)

This multi partnership project, led by SP Energy Networks, aims to develop novel solutions to an industry wide problem of sustainably procuring and managing high value assets. Through Ofgem Strategic Innovation Funding we carried out a Discovery phase project in early 2022, we actively engaged with a range of organisations representative of the whole energy system, conducting more than 30 interviews, gathering input from key stakeholders on current views and practice on the Circular Economy related to electrical assets.

We also carried out a knowledge sweep of wider circular practices and innovations, establishing areas of best practice, commonality, and opportunities. Through the Discovery Phase we identified several examples of circular economy initiatives, however these were often developed and implemented in an isolated manner, covering either one area of the organisation or one specific aspect of the energy system, limiting the benefits that can be realised through collaboration across the whole energy system.

By considering whole life use, our approach will ultimately reduce duplication and reduce the environmental impact of the energy industry through the life extension of assets, utilising practices such as refurbishing, repairing, retrofitting, remanufacturing, repurposing, and resource exchange. This will reduce virgin material use, carbon and cost for the energy sector, reduce costs to consumers, and positively impact on wider targets around Net Zero Carbon transition.

Next Steps

It is our ambition to develop this project over future years, securing funding, to achieve a circular economic framework; applicable across all aspects of the energy system, improving collaboration and driving strategic business change, moving away from traditional, mainly linear, ways of working. The ultimate ambition of the project will be to deliver a state-of-the-art Asset Reuse and Recovery Centre alongside the development of a Resource Exchange Mechanism delivering a truly circular energy industry.

This year 98% of waste diverted from landfill.

98%

3 Local Environment

We operate and maintain linear infrastructure which may be routed through, or adjacent to, a wide range of culturally or environmentally sensitive landscapes and structures, ranging from pristine to degraded habitats. While we provide the network connections and services that customers require, we recognise the need to minimise any negative effects these activities could have on the environment and communities. Our activities are planned and delivered to protect the environment that our network is in.

Throughout the life of our assets, we not only meet the requirements of government policies and legislation but strive to better them by integrating fair and responsible environmental practices with socio-economic considerations.

In line with continuous improvement, during this reporting period (2021-22) an additional environmental role has been added to our Operations team to further support environmental performance improvement.

Climate Change Resilience

Following the publication on pluvial flooding (Risk AR11) from the Scottish Environment Protection Agency (SEPA) in 2018 and based on the guidance within the Energy Networks Association (ENA) Engineering Technical Report (ETR) 138 – 'Resilience to Flooding of Grid and Primary Substations' – to ensure protection of substations against a 1:1000yr flood event, a desktop exercise using SEPA flood maps and SP Energy Networks GIS data identified a list of 26 substation sites that were potentially at risk.

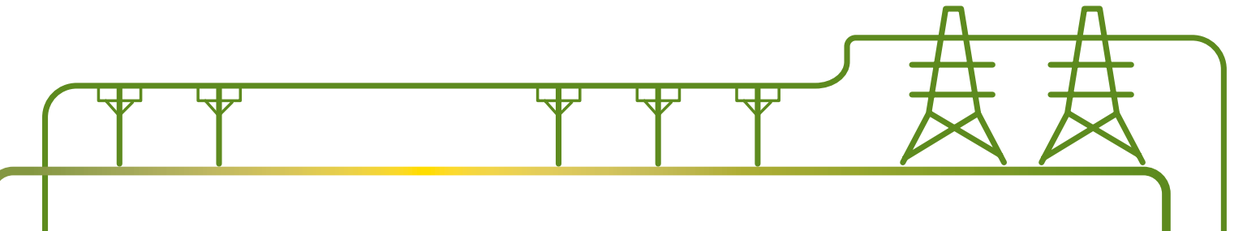
Following further detailed assessments and site walkovers of these 26 sites it was determined that at 10 sites a detailed FRA is required to determine the level of risk associated with pluvial flooding.

All flood risk assessments (8 in 2021 and 2 in 2022) have been completed to date and these are being reviewed to ascertain what mitigation measures are required at each of the sites over the remainder of the T2 period. Mitigation works are planned to begin in Q1 2023.

Environmental impact area	2021/22
Flood Risk Assessments (FRA) completed	10
FRA mitigation measures implemented* *Will be implemented during 2022/23 to 2024/25	0

Flood Risk
Assessments completed

10



Enhancing the Local Environment

Human activity is driving a decrease in biodiversity across the globe. Worldwide, around 25% of species are threatened with extinction and natural ecosystems have declined by almost 50% in relation to their previous conditions.* The biodiversity and climate crisis are interlinked, climate change negatively impacts biodiversity, this ecosystem decline then further impacts the Earth's ability to remove carbon emissions causing further climate change.

SP Energy Networks mitigate biodiversity loss most significantly through our actions to connect low carbon generation for societal decarbonisation. This leads to benefits in terms of climate change mitigation, avoidance of additional land use and reductions in pollution. While we do this, we also protect and enhance the ecosystems we operate within, mitigating the ecological impacts of construction by aiming for 'no net loss' of biodiversity by 2030, in line with the Iberdrola Group target, and avoiding the introduction or spread of invasive non-native species.

**Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) report 2019*

Scheme Name	Eastern Link 1 Branxton Substation Biodiversity Mitigation and Net Gain
Location	Branxton Substation, East Lothian, Scotland, UK
Description	Preventative and Biodiversity Net Gain work being undertaken as part of the Planning and Development Phase of the Eastern Link Branxton Substation Project
Environmental benefit	Embedded Mitigation, Biodiversity Net Gain
Timescales	2021 - 2026

Biodiversity

Status update

Our ambition goes beyond mitigation to create a positive legacy, by restoring and enhancing habitats and biodiversity. This ambition is necessary, due to UK and devolved government increased requirements and aspirations for biodiversity restoration; and stakeholder feedback, which reinforces the need to tackle the biodiversity crisis. We recognise our maturity in this area is low and uncertainty lies in how this can be achieved across our portfolio of projects, some of which will be challenging due to the distinctiveness of the habitats in many of the areas we work. Our current focus is to quantify our impact and trial enhancement approaches, working collaboratively to ensure the right solution for the right place, providing cost effective results to deliver value to customers.

Tools to assess Biodiversity and Natural Capital

Our approach to biodiversity and natural capital assessment is a collaborative one, where we work closely with the other Transmission Operators to develop common tools and approaches.

The DEFRA biodiversity metric is the adopted standard for use in England, however it is widely recognised that it is not ideally suited for use in Scottish habitats. We are members of the Scottish Linear Infrastructure group, hosted by Nature Scot. A key outcome of this group in the reporting year was the agreement to establish a subgroup to develop a biodiversity assessment methodology appropriate to Scotland. SP Transmission and SSE Transmission are members of this subgroup and will be key contributors to development in the coming year. In the interim, to ensure consistency, we established an agreement with SSE Transmission to use their Scottish version of the DEFRA metric to assess our impact on biodiversity. In the reporting year we have embedded this in the decision-making process to ensure our commitment to no net loss, and where possible enhancement, is a core part of our Transmission projects. We will be in a position to start reporting biodiversity data in the 2022/23 Annual Environmental Report.

Natural Capital assessment and quantification is still a developing concept, this has been a key focus for us this year. We are working closely with SSE Transmission, National Grid Transmission and experts in natural capital assessment to develop our approach in this area. Piloting a tool and producing a Natural Capital baseline of our sites is a priority and will be carried out in 2022/23.

Stakeholder Engagement

In September 2021 we hosted a virtual Biodiversity and Natural Capital stakeholder workshop. We received widespread support for the development of a Biodiversity and Natural Capital Action Plan with feedback highlighting the need for a longer-term view to implementation to develop rich biodiversity. We are on track for our Biodiversity Action Plan to be completed during 2022/23 scheme year. The other key messages from stakeholders were setting ambitious future targets for biodiversity restoration and enhancement and developing our approach to carbon offsetting to maximise biodiversity and natural capital benefits. The latter is already underway as detailed in the Carbon Offsetting Approach linked to Biodiversity and Natural Capital case study.

Performance

In line with our sustainability commitments, this reporting year focused on engagement, collaboration and the piloting of tools to advise our approach to measurement and quantitative analysis. Quantitative performance data will be reported from 2022/23 onwards.

Case Study:

Carbon Offsetting Approach linked to Biodiversity and Natural Capital

In 2021/22 we aligned our approach to offset carbon with the Oxford Carbon Offsetting Principles, those relevant to the natural environment are:

We will offset our emissions 'locally' relative to the emissions source

We will focus on rewilding and explore environmental restoration options (e.g., peat restoration) rather than commercial foresting where practical, to drive additional environmental and social benefits

In an effort to ensure our carbon offsetting activities are delivered locally to our projects, we are working with Forest Carbon at their Hawkshaw site in the Scottish Borders. We have worked with Carbon Forest Trust to secure 800 tonnes verified carbon offsetting pending issuance units, approx. 2 hectares of land, to support the planting of new native woodland which, once mature, will sequester carbon and provide habitat for other local wildlife species. The vision at Hawkshaw is to restore rough grazing land into native woodland, with a sensitive design allowing for integration of trees with existing peatlands, including an area of blanket bog.

The resulting suite of habitats will become an important refuge for a range of wildlife, an area of amenity for local people, and help to provide future seed sources for native woodland expansion. Wildlife friendly tree species like juniper, hazel and bird cherry will provide food for a wide variety of insects, birds and mammals and careful planting of birch around areas of blanket bog will lead to the formation of bog woodland, which has become a rare habitat in the UK.

Visual Amenity

SP Energy Networks published the second version of our Approach to Routeing major infrastructure guidance in Spring 2021.

This **guidance** outlines our approach to the routeing and Environmental Impact Assessment (EIA) of new overhead lines, including overhead lines which are to be replaced as part of asset modernisation and reinforcement projects. SPT will adopt a 'blank sheet' approach to the consideration of such projects, whereby alternative routes and sites will always be identified and appraised, including undertaking stakeholder engagement on these options.

Landscape and Visual mitigation in the routeing process

Our Approach to Routeing document outlines our methodology for routeing of new infrastructure at 132kV and above. At its core, this is a landscape driven process. The approach is based on the premise that one of the major effects of an overhead line is visual, as a result of its scale relative to objects in the vicinity such as buildings and trees. As there is no technical way of reducing this other than through the choice of overhead line towers, one of the most effective ways of causing the least visual disturbance from a new overhead line is by careful routeing. However, the importance of other environmental considerations such as biodiversity must be taken into account. Decisions are therefore made on an individual project basis to assess the best environmental and technical solutions. For example, undergrounding of an overhead line will have less visual impact but may have a greater impact on biodiversity due to the level of ground disturbance.

During 2021/22, we worked through the routeing, Environmental Impact Assessment (EIA) and consents for a number of asset modernisation/reinforcement projects which will replace existing overhead transmission lines. A number of these lines are amongst the original transmission network constructed in the 1930s, before certain areas were recognised under UK and European legislation as being environmentally sensitive designated areas. The approach to routeing for these projects will carefully consider the impacts of removal and replacement of this existing infrastructure away from these designations, which include a mix of national and European designations covering landscape, natural environment and areas of cultural heritage significance.

Oil Top Ups

A large section of SP Transmission's asset base, such as transformers and cables, utilise insulating oil due to its excellent insulating properties and its ability to remain stable at higher temperatures. We regularly monitor these assets for leaks and oil purity to ensure they remain fit for service and to avoid any adverse effects to the surrounding environment.

Over the 2021/22 regulatory period the majority of oil top ups have related to transformers. However it should be noted that top up figures will be skewed slightly higher as they include draining and flushing of oil filled assets as part of maintenance activities. Leaks have occurred within older transformers and on transformers which have been subjected to certain environmental factors e.g., corrosion due to being positioned near the coast. These have been recognised and are programmed for repair/replacement. To further mitigate any leakage, aside from repairing and replacing assets, SPT are delivering the RIIO-T2 oil bund and drainage system refurbishment programme. This will ensure any leaks are adequately contained and not able to reach the surrounding areas.

From a circuits point of view, SPT has over 200km of Fluid Filled Cable (FFC) circuits. These cables are pressurised and monitoring systems alarm if and when the pressure falls below defined set points. Where losses of fluid are identified on a cable, we 'tag' the cable using tracer elements to help locate and identify the source of any loss and then implement a repair plan to minimise any losses. As part of RIIO-T2, three of our key fluid filled cable circuits will be refurbished with the first phase due to begin in 2022/23. It is our expectation that fluid losses will reduce in the future as a result of these interventions.

Oil top ups	*Litres*
	2021/22
Oil in service (transformers)	8,516,712
Oil in service (fluid filled cables)	268,000
Oil in service (total)	8,784,712
Cable oil top ups	3,307
Transformer oil top ups	34,375

Environmental Incidents

SP Transmission have reported 3 incidents to the Regulator, SEPA, in the reporting period.

These 3 incidents have included 1 silt in water incident during construction of a culvert, 1 oil leak incident from the loss of a low volume of hydraulic oil from plant and 1 peat removal incident. Suitable remedial actions were undertaken that ensured that none of these incidents resulted in any significant impacts to the environment.

No enforcement actions or undertakings resulted from the 3 incidents notified to the regulator.

Reportable Incidents

3 incidents

Statement on Scope and Quality of Data

Scope

Our RIIO-T2 plan and commitments are designed to quickly build on our current performance, using our established process for achieving data maturity which 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 Maturity Matrix overleaf, where we list our Environmental Impact areas and rank them based on their current level of data maturity.

As this is the first year of RIIO-T2, many of the data and baselines relating to our Natural Capital, Biodiversity and Supply Chain commitments are currently at a low maturity level, as discussed within the relevant sections of the report.

Our reporting of waste is reliant on data being input by our contractors using our online waste platform SmartWaste. As discussed in the Resource Use and Waste section, we expect our waste tonnage to increase in the short term, due to improved data and accuracy of reporting rather than growth in actual tonnage as we onboard further contractors.

Quality

We follow the Data Assurance Guidance (DAG) framework introduced by Ofgem for all submissions listed in the guidance. 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. The submission also includes data from our 2021/22 Ofgem Regulatory Reporting Pack (RRP) submission which was previously assured and was subject to an internal data audit, the details of which will be covered in the Network Data Assurance Report.

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. We have achieved a sixth consecutive year of Planet Mark™ certification which recognises our commitment to reducing our carbon footprint.

SP Energy Networks Sustainability Maturity Matrix 2022

Increasing maturity →

Maturity level	1	2	3	4	5
Impact Area	Identify and collect initial data	Identify metrics and establish baseline for chosen metrics	Analyse data and identify priorities	Set targets and deadlines	Deliver actions
				Identify actions to eliminate/reduce/ mitigate	Track metrics and report progress
	Verify			Review	
Carbon Footprint of network losses				4	5
Reducing Embodied Carbon and Scope 3 Emissions		2	3	4	
Business Carbon Footprint – Sulphur Hexafluoride (SF_6)				4	5
Business Carbon Footprint - Other				4	5
Climate Change Adaptation				4	5
Supply Chain Sustainability	1	2	3		
Enhancing Visual Amenity					5
Natural Capital and Biodiversity	1	2			
Preventing Pollution					5
Sustainable Resource Use	1	2	3		
Waste Reduction			3	4	5

Glossary of Terms

Absolute Zero	Eliminating all emissions across Scopes 1-3 without the use of carbon removal or offsetting.
Biodiversity Unit	A unit of measurement. Metrics assign all habitats a unit value according to their relative biodiversity value. Defra definition is Baseline biodiversity units = Distinctiveness x Condition x Significance x Connectivity x Area in hectares (or length in km).
Bunds	Impermeable structure constructed below and around plant or tanks containing oil or other substances hazardous to the environment. Includes where necessary bund dewatering system with associated oily water / hydrocarbon treatment.
Business Carbon Footprint (BCF)	Terminology used to describe our carbon footprint when including Scope 1 & 2 carbon emissions (excluding losses), business travel, and contractor emissions.
Capital Carbon	Analogous to capital cost and can be used to describe the carbon associated with creation, refurbishment and/or end of life treatment of an asset. Capital carbon of new projects includes embodied carbon of materials and equipment, in addition to transport and energy use in the construction of the asset and emissions associated with site waste.
Carbon	Used as shorthand for greenhouse gas emissions (see below).
Carbon Dioxide Equivalent (CO_2e)	A metric measure used to compare the emissions from various greenhouse gases on the basis of their global-warming potential, by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.
Carbon Footprint	Total greenhouse gas emissions caused directly and indirectly by a person, organisation, event, or product measured in Carbon Dioxide (CO_2). This also contains other greenhouse gases (such as SF_6 below) converted into CO_2 equivalent.
Carbon Neutral	Making or resulting in no net release of CO_2e into the atmosphere. Can be achieved through carbon offsets. Can apply to specific products or services instead of the whole company.
Circular Economy	See Zero Waste (below).
Compliance Waste	Specific, potentially hazardous, waste that must be specially disposed of/ handled separately for safety and environmental reasons.
DNO	Abbreviation for Distribution Network Operator, who is licenced by Ofgem to develop, operate, and maintain local electricity distribution network. There are 14 licenced distribution network operators (DNOs) in Britain owned by six different companies. Each DNO is responsible for a regional distribution services area.
Embodied Carbon	Embodied carbon is the total carbon generated to produce a built asset. This may refer to individual materials and components (e.g. concrete, switchgear etc) or may refer to the creation of an infrastructure asset as a whole.
Greenhouse Gas Emissions (GHG)	Emissions of gases that absorb and emit thermal radiation, causing the greenhouse effect.
Global Warming Potential	Global warming potential is the heat absorbed by any greenhouse gas in the atmosphere, as a multiple of the heat that would be absorbed by the same mass of carbon dioxide.
ISO14001	International Organisation for Standardisation 14001. Defines criteria and maps out a framework for companies to create an effective Environmental Management System.
Kilowatt-hour (kWh)	A unit of energy equivalent to one kilowatt (or 1000 watts) of power sustained for one hour. Kilowatt-hours are also the unit in which customer energy bills are expressed.
Low Carbon Transition	The evolution from a fossil fuel powered economy to an economy based on renewable and low carbon energy use that therefore has a minimal output of greenhouse gas emissions.
Megawatt-hour (mWh)	A unit of energy equivalent to one megawatt (or 1,000,000 watts) of power sustained for one hour.
Natural Capital	Natural capital can be defined as the world's stocks of natural assets which include geology, soil, air, water, and all living things. It is from this natural capital that humans derive a wide range of services often called ecosystem services, which make human life possible.
Net Zero Carbon	Achieving a scale of value-chain emission reductions consistent with the depth of abatement achieved in pathways that limit warming to 1.5°C with no or limited overshoot and; Neutralising the impact of any source of residual emissions that remains unfeasible to be eliminated by permanently removing an equivalent amount of atmospheric carbon dioxide.
NGO	Abbreviation for non-governmental organisation, an organisation that tries to achieve social or political aims but is not controlled by a government.
Operational Carbon	Carbon associated with the operation of an asset over the asset lifecycle.
Polychlorinated Biphenyls (PCBs)	PCBs are a group of synthetic chemicals with good dielectric properties and low flammability used to insulate oil in electrical apparatus such as transformers, liquid filled cables, high and low voltage capacitors, switches etc., manufactured prior to 1987. PCBs are a threat to the environment because of their toxicity, persistence and tendency to bio-accumulate. PCBs have been linked with harmful effects such as liver damage and a reduced ability to fight infection.

RIIO-ED1	Abbreviation for Revenue = Incentives + Innovation + Outputs for Electricity Distribution 1. RIIO ED1 is the price control framework set by out Regulator Ofgem, that sets the outputs that the 14 DNOs need to deliver for their customers and the associated revenues the DNOs are allowed to collect for the eight-year period from 1 April 2015 to March 2023.
RIIO-ED2	Abbreviation for Revenue = Incentives + Innovation + Outputs for Electricity Distribution 2. RIIO ED2 is the price control framework set by out Regulator Ofgem, that sets the outputs that the 14 DNOs need to deliver for their customers and the associated revenues the DNOs are allowed to collect for the five-year period from 1 April 2023 to 31 March 2028.
RIIO-T1	Abbreviation for Revenue = Incentives + Innovation + Outputs for Transmission 1. RIIO T1 is the price control framework set by out Regulator Ofgem, that sets out what the 3 TOs are expected to deliver and details the regulatory framework that supports both effective and efficient delivery for energy customers over the eight years from 1 April 2013 to 31 March 2021.
RIIO-T2	Abbreviation for Revenue = Incentives + Innovation + Outputs for Transmission 1. RIIO T2 is the price control framework set by out Regulator Ofgem, that sets out what the 3 TOs are expected to deliver and details the regulatory framework that supports both effective and efficient delivery for energy customers over the five years from 1 April 2021 to 31 March 2026.
Science-Based Targets	Targets adopted by companies to reduce Greenhouse Gas emissions that are calculated in line with the methodology laid out by the Science-Based Targets Initiative, in line with one of the reduction trajectories featured in the Paris Agreement.
Scope 1 Carbon Emissions	Direct GHG emissions – from sources owned or controlled by the company.
Scope 2 Carbon Emissions	Indirect carbon emissions from the generation of purchased electricity, steam, heating and cooling consumed. For electricity network companies, network losses are included in Scope 2.
Scope 3 Carbon Emissions	All other indirect emissions that occur within the value chain.
SF_6	Abbreviation for Sulphur Hexafluoride, the most carbon intensive greenhouse gas in the world, used extensively as an electrical insulator since the 1980s when the industry moved away from using oil in mass quantities for safety reasons. Use of SF_6 prevents fire/explosion from catastrophic failure of plant and reduces the risk of oil pollution incidents on out network but has a global warming potential 23,500 times that of carbon dioxide.
SPD	Abbreviation for ScottishPower Distribution, a wholly owned subsidiary of SP Energy Networks responsible for the distribution of electricity in central and southern Scotland (33 kV and below).
SPEN	Abbreviation for ScottishPower Energy Networks, holder of the SPT, SPD, and SPM licences awarded by Ofgem, the regulator of the gas and electricity sector.
SPM	Abbreviation for ScottishPower Manweb, a wholly owned subsidiary of SP Energy Networks responsible for the distribution of electricity in North Wales and in Merseyside, Cheshire, and North Shropshire in England (132 kV and below).
SPT	Abbreviation for ScottishPower Transmission, a wholly owned subsidiary of SP Energy Network responsible for the transmission of electricity in central and southern Scotland (132 kV and upwards).
SROI	Social Return on Investment is an outcomes-based measurement tool that helps organisations to understand and quantify the social, environmental and economic value they are creating.
SSWG	Abbreviation for Stakeholder Sustainability Working Group, formed by SPEN in 2017 comprising of invited SPEN stakeholders and SPEN representatives to guide SPEN in the delivery of sustainability strategy, policies and plans.
Sustainable Networks Business	SPEN has identified this as managing out triple bottom line – a process to manage out financial, social and environmental risks, obligations and opportunities. These three impacts are sometimes referred to profits, people, and planet.
tCO_2e	tonnes (t) of carbon dioxide (CO2) equivalent (e)
TNO	Abbreviation for Transmission Network Operator, permitted to develop, operate, and maintain a high voltage system within their own distinct onshore transmission areas. These are National Grid Electricity Transmission plc (NGET) for England and Wales, ScottishPower Transmission Limited for southern Scotland and Scottish Hydro Electric Transmission plc for northern Scotland and the Scottish Islands groups.
Whole Life Carbon	Sum of GHG emissions from all stages of the life cycle of a product or asset
Zero Waste	An alternative to the traditional linear economy (make, use, dispose), in which resources are kept in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life as opposed to sending to landfill. Also referred to as Circular Economy.
Reportable Environmental Incidents	The number and type of environmental incidents which we have reported to the relevant environmental regulatory authority (e.g., Environmental Agency, Scottish Environmental Protection Agency) in the reporting year.

SP ENERGY NETWORKS

spenergynetworks.co.uk